

FASS Programme

Day-Ahead System Services Auction (DASSA) Design Consultation Paper V1.0

March 2024



Preface

As TSOs, EirGrid and SONI are separately bound by national and European legislation. Under the Climate Action and Low Carbon Development (Amendment) Act 2021 and the Climate Action Plan 2023 (CAP23) in Ireland, carbon budgets and the Climate Change Act (Northern Ireland) 2022 in Northern Ireland, the TSOs are each separately responsible for delivering low-carbon reserve services to support the 2030 decarbonisation targets in their respective jurisdictions.

At a European level, the Clean Energy Package (CEP) has set the foundation for a new electricity market design with the objective of modernising Europe's electricity market, promoting enhanced flexibility and integrating renewable energy through market driven solutions. The CEP builds on the Electricity Balancing Guideline (EBGL) Network Code, directing each TSO to procure system services in an efficient, economic and market-based manner for their jurisdiction. In particular, the legislation directs that balancing capacity (reserve services) should be procured on a short-term basis to the extent possible with a derogation required for contracting periods longer than one day.

To accommodate these regulatory adjustments, the SEM Committee (SEMC) published its High-Level Design (HLD) in April 2022. The High-Level Design laid out a phased introduction of a range of market arrangements to facilitate the move to a competitive framework for the procurement of reserves, including delivery of the Day Ahead System Services Auction (DASSA) in parallel.

In December 2023, the SEMC published their decision (SEM-23-103) on the System Services Future Arrangements, which requested that the TSOs consult on the Day Ahead System Services Auction (DASSA) Detailed Design and submit associated recommendation papers to the SEMC in 2024.

The motivation for this request is to transition the procurement of system services from the existing DS3 Regulated Arrangements to a set of future competitive arrangements. System services are a crucial component of the overall secure operation of the power system and are a key element of the revenue stack for investors in the Irish and Northern Irish power systems. The DS3 System Services Regulated Arrangements have supported the Single Electricity Market in becoming a world leader in respect of the amount of variable renewable electricity it can accommodate. However, the current arrangements were designed for 2020 targets, i.e.: 40% on average of electrical demand coming from renewable sources, and compensate providers for service availability based on fixed tariff rates.

As part of our Shaping Our Electricity Future Roadmap, the procurement of new system service capabilities from low carbon sources has been identified as an essential action to address the technical and operational challenges arising from the need to operate with SNSP levels up to 95% by 2030, which underpins achieving the renewable targets in Ireland and Northern Ireland.

Role of TSOs

As TSOs, we are responsible for ensuring the availability of all necessary ancillary (system) services to maintain a secure, reliable, and efficient electricity system¹ in both respective jurisdictions. To achieve our respective 2030 targets, and demonstrate leadership in the electricity sector in respect of sustainability and decarbonisation, we need to re-examine the services that we procure, the volume of services that we need and support the Regulatory Authorities in providing the commercial incentives and financing needed to provide the correct investment in service provision from low-carbon technologies.

Further, under EU Legislation (the Clean Energy Package and Electricity Balancing Guideline), we are required to procure reserve services competitively close to real-time. To meet these requirements, and to deliver value to consumers in Ireland and Northern Ireland, the TSOs, together with our strategic partners, have developed proposals for the DASSA Detailed Design which are detailed in this paper, on which we are inviting stakeholder feedback.

¹ Article 40 DIRECTIVE (EU) 2019/944 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

Previous Work in this Area

Before reading this consultation, we recommend the following readings:

Table 1 Recommended pre-reading

Published by	Document Name	Document Reference	Link
SEM Committee	System Services Future Arrangements High Level Design Decision	SEM-22-012	link
SEM Committee	System Services Future Arrangements Phase III: Detailed Design & Implementation Phased Implementation Roadmap for the System Services High Level Design Decision Paper	SEM-23-103	link
DotEcon/ Afry	Future Arrangements for System Services (FASS) Proposals for enduring arrangements and transition	SOEF Markets - Future Arrangements for System Services - Auction Design - DotEcon Afry Recommendations Paper	EirGrid link, SONI link
TSOs	Supporting cover note from the TSOs on DotEcon proposal for enduring arrangements and transition	SOEF Markets - Future Arrangements for System Services - Auction Design - DotEcon Afry Recommendations Paper - Supporting Note	EirGrid link, SONI link
TSOs	FASS - Proposals for enduring arrangements and transition - DotEcon / Afry Industry Workshop presentation	Future Arrangements for System Services - Auction Design - DotEcon Afry Workshop Slides	EirGrid link, SONI link
TSOs	DotEcon/Afry Proposals for enduring arrangements and transition - Questions captured in the 20 th September Industry Workshop and TSOs' responses	Future Arrangements for System Services - Auction Design - DotEcon Afry Workshop Q&A	EirGrid link, SONI link

This paper builds on the Recommendations Paper written by DotEcon and Afry and published by the TSOs in September 2023 and the subsequent period of bilateral engagement with industry throughout October. The TSOs have collated stakeholder feedback and worked closely with DotEcon and Afry to amend and expand on the daily auction design. In addition, the TSOs' Phased Implementation Roadmap² outlining the programme timeline, scope, and key dependencies (e.g.: programme funding, timely decision making etc.) for delivering the Future Arrangements of System Services has been published.

² EirGrid: <https://cms.eirgrid.ie/sites/default/files/publications/FASS-TSOs-PIR-March-2024-EirGrid.pdf>
SONI: <https://www.soni.ltd.uk/media/documents/FASS-TSOs-PIR-March-2024-SONI.pdf>

Executive Summary

At a summary level, the FASS programme arrangements consist of the following components:

Table 2 Components of the FASS programme

FASS Component	Description	Target Timeline
Day Ahead System Services Auction (DASSA) Arrangements	Daily auction and associated market arrangements. This is a requirement based on EU regulations and direction from SEM Committee.	December 2026 ³
Fixed Term Contracts	Procurement of fixed term contracts and development of future products (e.g.: Low Carbon Inertia Service (LCIS))	TBC, as required by product. LCIS Phase 1 October 2024
Product Review, Volume Forecasting and Locational Methodology	Ensuring the system services we procure and the volumes obtained enable the TSOs to operate the power system with higher levels of renewables.	2024 (reserve services) 2025 (non-reserve services)
Layered Procurement Framework	Procurement at timeframes greater than one day and less than one year	Pending outcome of annual assessment

This consultation focuses on the first component. It presents our proposals for the Day Ahead System Services Auction (DASSA) design and the supporting arrangements such as secondary trading, registration and qualification and settlement.

We recognise this will be more complex than the existing arrangements and there are significant market changes impacting market participants over the short term e.g., Scheduling & Dispatch and the Strategic Markets Programme. However, in response to industry feedback, we have endeavoured to propose the most straightforward implementation of the requirements laid out in the SEMC decision papers. An overview of the DASSA design is presented in Figure 1:

³ As noted by the RAs in SEM-23-103, the final Phased Implementation Roadmap including go live date is the responsibility of the TSOs and can only be confirmed following extensive engagement with all relevant stakeholders. Additionally, target dates assume timely decision making and approval of required funding. See Appendix B for further information.

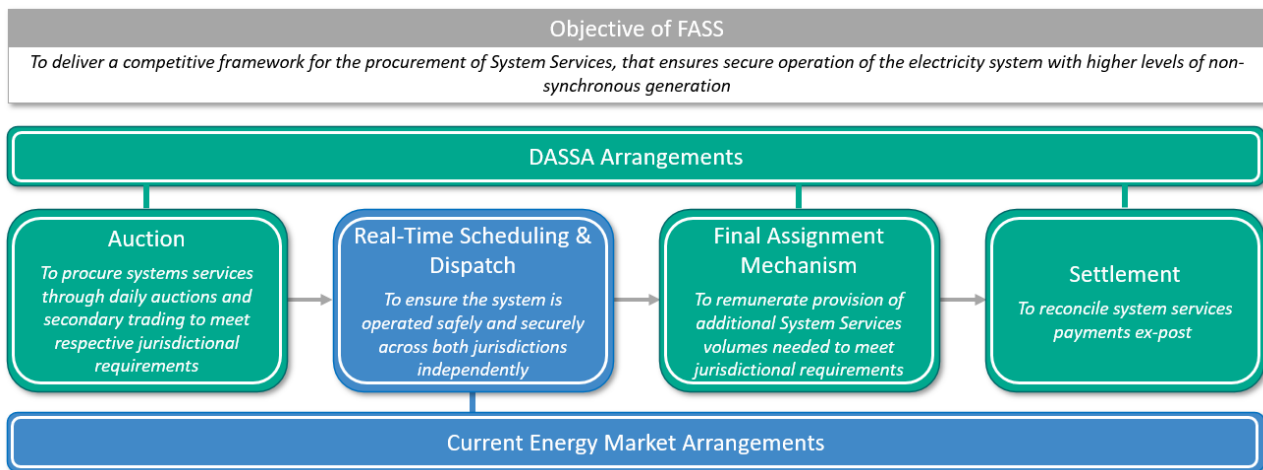


Figure 1 Overview of The DASSA Design

The key proposals set out in this consultation paper are that:

- The DASSA will initially procure reserve services - on an all-island basis, while meeting both TSOs' jurisdictional reserve requirements - with sufficient flexibility in the auction design to allow for the procurement of other system services if required at a later stage.
- The DASSA will take place after the Day Ahead Market and before the first day-ahead Balancing Market Long-Term Schedule (LTS). It will procure system services for a 24-hour Auction Timeframe starting at 23:00 day-ahead and ending at 23:00 the next day.
- The DASSA will be cleared on a pay-as-cleared basis per Trading Period (30-minute interval) for Ireland and Northern Ireland, subject to certain constraints.
- A DASSA Order, and associated commitment obligation, will be allocated to auction winners for each service for each Trading Period within the Auction Timeframe. Performance incentives and scalars are also proposed.
- Secondary trading will take place after the DASSA results are published and up to 90 minutes before the relevant Trading Period. Buy and Sell orders will be placed on a central trading platform, to be operational from the go-live of the DASSA arrangements. Bilateral trading will also be facilitated from go-live.
- Where service volume requirements are not fully met by DASSA Order Holders, an ex-post reconciliation mechanism, the Final Assignment Mechanism (FAM), will be used to remunerate service providers who were available to meet these volume requirements, on a merit order basis.
- Service providers will be required to register with the TSOs and accede to the System Services Code in order to participate in the DASSA arrangements. The qualification process will leverage the established system services testing regime, adapted as required for new or amended services.
- Settlement for the DASSA arrangements will take place monthly in arrears.
- The Layered Procurement Framework, fixed term contracts and forwards markets will also be considered as part of the surrounding DASSA arrangements. The TSOs will assess how these mechanisms can be used to provide further predictability of future revenue streams for service providers and contribute to the economic efficiency of system services procurement.

These proposals are based on our consideration of the appropriate procurement mechanisms to meet the current and future system requirements, provide value to consumers and incentivise investment in the right mix of technologies, facilitating Ireland and Northern Ireland to deliver on both respective climate change targets and security of supply obligations.

In this consultation, we are seeking stakeholders' views on these proposals. EirGrid and SONI welcome feedback on the questions posed within this paper, which will be used to inform a recommendation paper that will be submitted to the SEM Committee for its consideration.

Responses to the questions set out in this paper should be submitted through either the EirGrid or SONI consultation portal⁴ by **10 May 2024**.

⁴ [Link](#) to EirGrid portal, [link](#) to SONI portal.

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Revision History		
Revision	Date	Description
V1.0	15/03/2024	Version for publication

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1 Introduction

1.1 Purpose of Paper

This consultation paper sets out EirGrid and SONI’s proposals for the design of the day-ahead system services auction (DASSA), as part of the broader System Services Future Arrangements (SSFA) programme. In the sections below, we describe our proposals in detail and welcome responses from interested parties to the questions posed. The feedback received to this consultation will inform the final recommended design of the DASSA, which we aim to publish in Q2 of this year. The implementation of the DASSA design recommendations will be subject to approval by the SEM Committee (SEMC).

This paper refers to other deliverables within the SSFA programme for context. Distinct industry engagement and consultation will apply to those workstreams, as appropriate.

1.2 EirGrid plc and SONI Ltd

EirGrid plc is the licenced electricity Transmission System Operator (TSO) in Ireland, and SONI Ltd is the licensed TSO in Northern Ireland. Both companies also hold Market Operator (MO) licences in Ireland and Northern Ireland respectively and collectively act as the Single Electricity Market Operator (SEMO), which operates the Single Electricity Market (SEM) on the island of Ireland.

1.3 System Services Future Arrangements

The SSFA programme was officially launched by the SEM Committee in July 2020 with the publication of a Scoping Paper (SEM-20-044)⁵ for public consultation.

As set out in the SEM Committee’s SSFA Decision Paper 1 (SEM-21-021)⁶ the objective of the programme 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 April 2022, the SEM Committee published its SSFA High-Level Design Decision (HLD) in SEM-22-012⁷. The HLD set out a framework for the competitive procurement of system services, to consist of the following:

1. **Daily Auction Framework** for the procurement of system services within one day of energy dispatch.
2. **Layered Procurement Framework (LPF)** consisting of medium-term contracts of greater than one day duration and up to 12 months.
3. The existing **Fixed Contract Framework** to be continued to be utilised to remove barriers to entry for new technologies and ensure sufficient volumes of system services, as required.

In December 2023, the SEM Committee published its SSFA Phase III: Detailed Design & Implementation Decision paper (SEM-23-103)⁸, in which it decided that the commercial arrangements as described in the HLD should be progressed by the TSOs.

EirGrid and SONI, in their respective roles as Transmission System Operator in Ireland and Northern Ireland (together the ‘TSOs’), are supporting the SEM Committee in the development of its High-Level Design and the implementation of the IT solution and supporting arrangements.

⁵ [SEM-20-044 System services future arrangements scoping paper.pdf \(semcommittee.com\)](#)

⁶ [SEM-21-021 System Services Future Arrangements - Decision Paper 1.pdf \(semcommittee.com\)](#)

⁷ [SEM-22-012 System Services Future Arrangements High Level Design Decision Paper.pdf \(semcommittee.com\)](#)

⁸ [SEM-23-103 System Services Future Arrangements Phase III: Detailed Design & Implementation Decision Paper.pdf \(semcommittee.com\)](#)

Table 3 below summarises the SSFA components. The scope of this consultation includes the design of the DASSA and secondary trading for all system services, with the initial implementation to be for reserve services. The design of other procurement mechanisms including the LPF and forwards markets are not in scope for this consultation. The scope of the consultation is discussed further within the context of the SSFA programme in Section 3: Consultation Scope.

Table 3 Summary of SSFA Arrangements

SSFA Components	Format	Products Covered	Target Timeline
Day-Ahead System Services Auction (DASSA): Initial auctions	Daily auctions	Reserve services ⁹	Target implementation by December 2026
Secondary Trading	Continuous trading, up to gate closure	Reserve services	Target implementation by December 2026
Day-Ahead System Services Auction (DASSA): Full implementation	Daily auctions	Reserve services and ramping margin products TBC ¹⁰ , subject to non-reserve services product review	TBC, dependent on outcome of LPF annual assessment
Fixed-Term ¹¹ Contracts Framework	Multi-year contracts	Low Carbon Inertia Services TBC ⁶ , subject to non-reserve services product review	In place, to be revised as required
Layered Procurement Framework	Procurement at timeframes greater than one day and less than one year	Pending outcome of annual assessment	Pending outcome of annual assessment
Forwards Market	To be considered by the TSOs as per SEM-23-103	TBC	TBC

The procurement of system services under the SSFA programme is being developed in the context of the relevant European Regulations and Directives. The European Commission published Regulation (EU) 2017/2195¹² establishing a guideline on electricity balancing (the ‘EBGL’) in November 2017. Regulation (EU) 2019/943¹³ and Directive (EU) 2019/944¹⁴ were published in 2019 and form part of the Clean Energy Package (hereafter ‘CEP’). The EBGL and CEP govern the procurement of system services.

The design of the DASSA, proposed in the sections below, is intended to be compliant with the relevant EU legislation.

⁹ The products to be included in the initial implementation of the DASSA are subject to the outcomes of the product review which is to be consulted on in 2024.

¹⁰ It is still to be determined which mechanism the full suite of system service products will be procured under once the tariff arrangements expire.

¹¹ The TSOs view longer term investment incentives as crucial to maintaining system security.

¹² [Regulation \(EU\) 2017/2195 establishing a guideline on electricity balancing \(EBGL\) \(eur-lex.europa.eu\)](https://eur-lex.europa.eu/eli/reg/2017/2195/oj)

¹³ [Regulation \(EU\) 2019/943 on the internal market for electricity \(eur-lex.europa.eu\)](https://eur-lex.europa.eu/eli/reg/2019/943/oj)

¹⁴ [Directive \(EU\) 2019/944 on common rules for the internal market for electricity and amending Directive 2012/27/EU \(eur-lex.europa.eu\)](https://eur-lex.europa.eu/eli/dir/2019/944/oj)

The TSOs also note the requirements of the Climate Action Plan¹⁵ (CAP) in Ireland and the Climate Change Act (Northern Ireland) 2022¹⁶, and the need to deliver low-carbon reserve services as early as possible in the decade.

1.4 Phased Implementation Roadmap

The relevant workstreams and projected timelines within the SSFA project are detailed in the Phased Implementation Roadmap (PIR) which was published on 13 March 2024 on the EirGrid¹⁷ and SONI¹⁸ websites. The PIR (Level 1) is shown in Figure 2 below. Further information detailing approach and governance of the programme PIR in addition programme milestones for 2024 can be found in the published version of the PIR linked below.

Based on the current timelines set out in the PIR, the DASSA is scheduled to go-live in December 2026 following the termination of the Regulated Tariff Arrangements in April 2026. The arrangements for the transition period are not consulted on in this paper; these are to be discussed in a future consultation as per the timelines set out in the PIR.

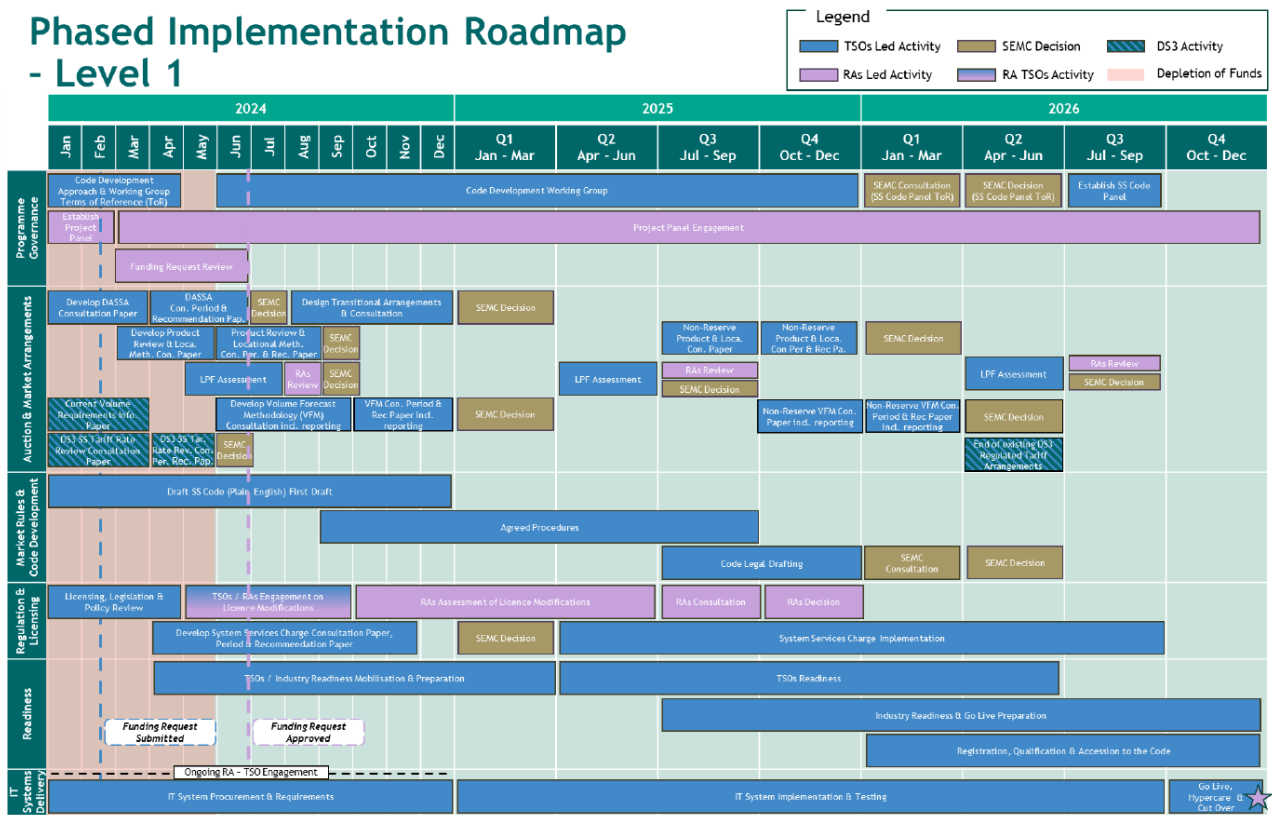


Figure 2 Phased Implementation Roadmap - Level 1

1.5 Development of DASSA Proposals

The TSOs' proposals for the daily auction of system services have been developed in conjunction with our auction design partners DotEcon and Afry. Following a period of extensive collaboration on the design of the DASSA, together with engagement with the Regulatory Authorities, the TSOs published DotEcon and Afry's

¹⁵ [Climate Action Plan \(gov.ie\)](https://www.gov.ie/en/publications-and-statistics/publications/2024-03-14-climate-action-plan/)

¹⁶ [Climate Change Act \(Northern Ireland\) 2022.pdf \(legislation.gov.uk\)](https://www.legislation.gov.uk/uk/acts/2022/1/contents)

¹⁷ <https://cms.eirgrid.ie/sites/default/files/publications/FASS-TSOs-PIR-March-2024-EirGrid.pdf>

¹⁸ <https://www.soni.ltd.uk/media/documents/FASS-TSOs-PIR-March-2024-SONI.pdf>

Future Arrangements for System Services (FASS) Proposals for Enduring Arrangements and Transition paper¹⁹ in August 2023. This paper set out DotEcon and Afry’s initial recommendations for the design of the DASSA.

Subsequent to the publication of the paper, the TSOs hosted an industry workshop in September followed by a series of bilateral workshops in which DotEcon and Afry presented their recommendations to industry representative bodies and system service providers. A workshop was also held for the Regulatory Authorities. Figure 3 below highlights the publications and engagements that have taken place to date in addition to the key future milestones.

Feedback received from these workshops has informed the finalised proposals for the DASSA, which are described in this paper.

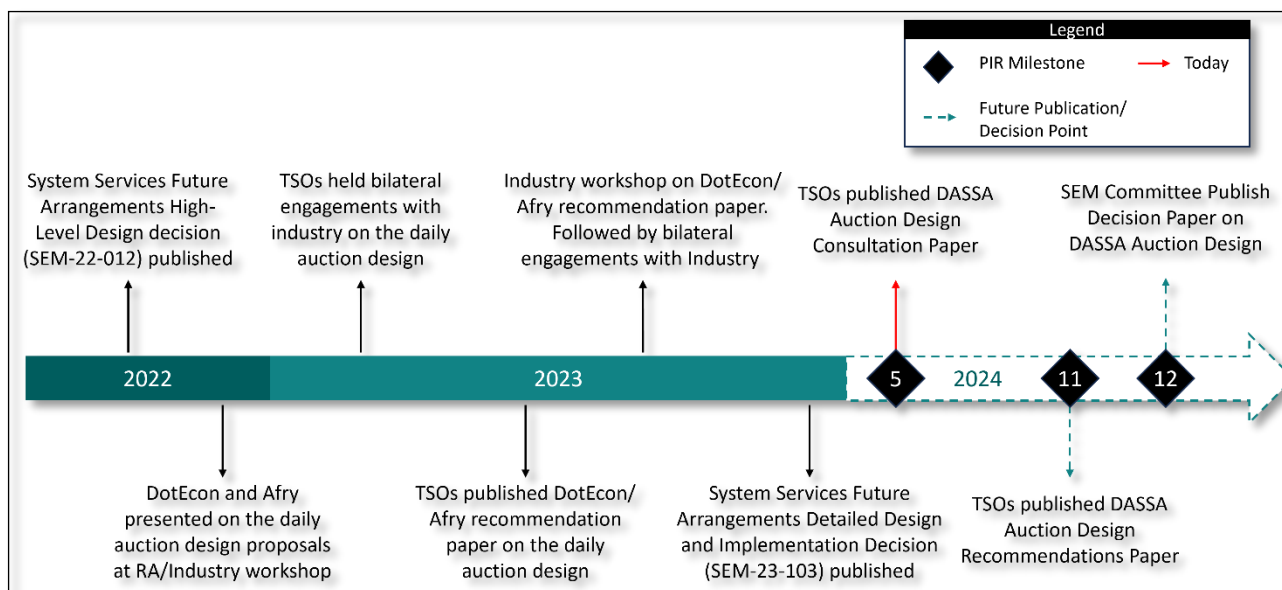


Figure 3 DASSA Design Timeline

1.6 Structure of Consultation Paper

This paper sets out the TSOs’ proposals for the design of the DASSA and invites feedback from interested stakeholders on the questions posed. Where applicable, the paper makes reference to related workstreams, the schedule of which is summarised in the PIR.

This paper is broken down into the following sections:

- Governance of the DASSA arrangements.
- Scope of the initial implementation of the DASSA.
- DASSA mechanics (design of the daily auction).
- Secondary trading.
- Commitment obligations and incentives.
- The Final Assignment Mechanism.
- Locational considerations in the DASSA.
- Registration and qualification.

¹⁹ [DotEcon/Afry Recommendations Paper September 2023.pdf \(eirgridgroup.com\)](#), [DotEcon/Afry Recommendations Paper September 2023.pdf \(soni.ltd.uk\)](#)

- Settlement and payment.
- Forwards markets.
- Migration to the DASSA arrangements.
- Interaction of the DASSA with other market arrangements.

1.7 Next Steps

The DASSA consultation will be open for eight weeks, closing on **10 May 2024**. Responses to the consultation should be submitted to the EirGrid²⁰ or SONI²¹ consultation portals.

Should stakeholders have any questions or comments during the consultation period these can be submitted to FASS@Eirgrid.com or FASSProgramme@soni.ltd.uk.

An industry workshop, at which the TSOs will present our proposals and facilitate a Q&A for interested parties, will take place in April 2024 (the date and location are to be confirmed and will be communicated to customers and stakeholders in due course).

Following this consultation on the DASSA design, the TSOs will publish a recommendation paper in advance of the SEM Committee Decision in July 2024 as per the timelines set out in the PIR.

²⁰ EirGrid Consultation Portal (<https://consult.eirgrid.ie/>)

²¹ SONI Consultation Portal (<https://consult.soni.ltd.uk/>)

2 Governance

This section of the consultation addresses the governance workstreams within the SSFA project. The sections covered below include the System Services Code, licence modifications, system services cost recovery, TSO/DSO interactions and the SSFA Project Panel.

2.1 System Services Code

In SEM-22-012²² the SEM Committee state, “All arrangements relating to the governance, settlement and procurement of System Services will be set out in a System Services Code.”

The TSOs propose that the System Services Code will include, but may not be limited to the following contents:

- **Introduction and Interpretation:** objectives, Agreed Procedures and scope.
- **Legal and Governance:** accession to the code, System Services charge (if applicable), the System Services Code Panel, dispute resolution, defaults and notices (e.g. Suspension Orders, Termination Orders and Notices of Dispute).
- **Registration:** the establishment of the System Services Register and the registration of service providers.
- **Qualification:** the qualification process to establish service providers’ capabilities to provide services in the DASSA.
- **Auctions:** auction timing, volume requirements, bidding structure, bid validation, auction clearing and payment logic.
- **Obligations:** the commitment obligations on service providers holding a DASSA Order and related compensation payments.
- **Secondary trading:** the mechanics of the trading of DASSA Orders, the validation and notification of trades, timing of trades, and how confirmed secondary trades interact with other aspects of the DASSA arrangements.
- **Final Assignment Mechanism (FAM):** adjusted supply functions, default bids, and FAM clearing.
- **Delivery and Performance Monitoring:** the performance monitoring of service providers in relation to availability and response to system events / dispatch instructions.
- **Settlement:** the settlement procedure for the DASSA arrangements.

In SEM-23-103²³, the TSOs were invited to establish a Working Group for the drafting of the System Services Code, with the aim of facilitating further engagement with industry in the code development process. The TSOs are to establish the System Services Code Working Group as per the timelines set out in the PIR. The objective of the Working Group is to discuss in detail the elements of the SEM Committee’s decisions and collaborate on the detailed drafting of the System Services Code. For the avoidance of doubt, it is not intended that the System Services Code Working Group will be a forum where decisions made by the SEMC on the design of the DASSA may be revisited or reconsidered. The TSOs’ proposed approach for the development of the code, workshop structure and membership will be included in the Terms of Reference, which is to be published according to the timelines set out in the PIR. The TSOs value industry opinion on the development of the System Services Code and will seek to engage on this through the forum of the System Services Code Working Group.

²² SEM-22-012, Section 3.4, page 25.

²³ SEM-23-103, Section 4.6, page 28.

The development of the System Services Code is proposed to be delivered according to the current timelines set out in the PIR. The TSOs consider it to be essential that the System Services Code is in place by go-live for the DASSA arrangements. Progress on the development of the System Services Code will be reported on in the System Services Future Arrangements Project Panel. The SSFA Project Panel is addressed in Section 2.5: System Services Future Arrangements Project Panel below.

With regards to the ongoing development of the Code after go-live for the DASSA, a System Services Code Review Panel will be set up to manage any future changes to the Code. The terms of reference of the panel will be subject to a future SEM Committee consultation, the timeline for which is set out in the PIR.

2.2 Licence modifications

The TSOs will complete a Licencing Gap Analysis, which will assess the need for any licence modifications as part of the DASSA arrangements. This workstream has commenced, as detailed in the PIR in Section 1.4: Phased Implementation Roadmap and this initial phase will continue to be led by the TSOs with input from the Regulatory Authorities. The conclusions from this work will inform the licence modifications that are required to facilitate the procurement of system services in line with the decisions made by the SEM Committee and will ensure consistency with the Network Codes. This workstream is focused on changes to the EirGrid and SONI licences only. The RAs will identify any work to update other types of licence, if required.

This Licencing Gap Analysis will precede the RAs' assessment of the necessity of licence changes, which will take place subsequently.

2.3 System Services Cost Recovery

In the Phase III Decision, the SEM Committee stated that the cost of system services should be recovered through an annual charge to be levied on suppliers across the island, which initially is to be set annually. These costs would be recovered using an annual €/MWh or £/MWh charge in Ireland and Northern Ireland respectively.

This workstream is expected to begin as per the timelines set out in the PIR, with a consultation on the potential methods of implementation to be published by the TSOs. This change to the TSOs' revenue model, risk profile and financeability will also be considered through the respective Price Control projects that are due to commence in 2024.

2.4 TSO/DSO Coordination

The TSOs note the principles in the HLD with regards to the provision of system services from distribution connected units:

- 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.

In December 2023, the TSOs provided progress reports to the SEM Committee regarding the agreed distribution system interactions for FASS, as requested by the SEM Committee in the Phase III Consultation Paper.

EirGrid will engage bilaterally with ESB Networks when developing the System Services Code under the FASS Programme to ensure that there are no unintended consequences for ESB Networks. EirGrid has included its joint work with ESB Networks in this area within the TSO-DSO Multi-Year Plan 2024-2028 call for input consultation²⁴ and will be providing progress updates through the PR5 Incentive Framework. EirGrid will also be engaging with ESB Networks in the context of the regulatory framework in Ireland, including any development that is required to the licence conditions to implement FASS.

SONI will engage bilaterally with NIE Networks when developing the System Services Code under the FASS Programme to ensure that there are no unintended consequences for NIE Networks. SONI has included its joint work with NIE Networks in this area within the Forward Work Plan for 2023/2024²⁵ and will be providing progress updates through its Evaluative Performance Framework. SONI will also be engaging with NIE Networks in the context of the regulatory framework in Northern Ireland, including any development that is required to the Transmission Interface Arrangements (TIA) or licence conditions to implement either the FASS or Flex Arrangements.

TSO/DSO coordination is to be included as a standing agenda item at SSFA Project Panel meetings.

2.5 System Services Future Arrangements Project Panel

The System Services Future Arrangements Project Panel, which has been established by the SEM Committee, will facilitate ongoing engagement with industry and will monitor and discuss the delivery of the workstreams within the DASSA arrangements.

As set out in the Phase III Decision Paper, the SSFA Project Panel aims to compliment standard public consultation processes, with SEM Committee noting: “Ultimately responsibility for consultation and recommendation of detailed design issues will remain with the TSOs and decision making on all elements will be a SEM Committee responsibility.”

²⁴ [DSO/TSO Multi-Year Plan 2024 - 2028, Joint System Operator Programme \(consult.eirgrid.ie\)](https://www.eirgrid.ie/consultation/2024/03/dso-tso-multi-year-plan-2024-2028-joint-system-operator-programme)

²⁵ [SONI Forward Work Plan 2023/2024 \(soni.ltd.uk\)](https://www.soni.ltd.uk/forward-work-plan-2023-2024)

3 Consultation Scope

3.1 Scope of this Paper

The purpose of this paper is to consult on the design of the DASSA arrangements, which are part of the enduring commercial arrangements for system services, that is being managed under the broader SSFA project.

Separate engagement with industry will be conducted in the future on the detailed design of other elements of the commercial arrangements for system services, with reference to the procurement mechanisms provided for in SEM-22-012.

Section 11: Forwards Markets of this paper sets out some of the TSOs' initial high-level design principles for forwards markets, which would potentially be used to offer service providers some additional investment incentives.

3.2 Services in Scope for Initial Implementation

The proposed DASSA arrangements described in this paper are designed to facilitate the competitive daily procurement of all system services.

SEM-22-012²⁶ states:

“Initially the daily auction would apply to reserve products (POR, SOR, TOR1, TOR2, RRD and RRS), and possibly ramping products (RM1, RM3, RM8) and Fast Frequency Response (FFR)”.

The TSOs propose that the services to be procured through the DASSA initially are FFR, POR, SOR, TOR1, TOR2, RRD and RRS, subject to the outcome of a product review that the TSOs will undertake in 2024 (see Section 3.3: Consultations on Products, Volumes and Locational Methodology below). FFR is a reserve service and as such is proposed to be procured through the DASSA from go-live as per SEM-22-012 rather than through an alternative mechanism. The proposed services to be procured align with the obligations for the competitive procurement of reserve services set out in the EBGL.

The procurement of ramping margin, reactive power and inertia services is not in scope for the initial implementation of the DASSA.

3.3 Consultations on Products, Volumes and Locational Methodology

For the avoidance of doubt, this consultation paper is only concerned with the proposed design of the daily auction of system services.

The TSOs will be conducting separate consultations in 2024 on several key developments, including:

- a reserve system services product review;
- forecasting the volume requirement of reserve services, including for the daily auctions; and
- methodologies for identifying locational considerations for reserve system services.

The timeline for the above consultations is set out in the PIR (see Section 1.4: Phased Implementation Roadmap).

Specifically relating to the product review, the outcome of the consultation will inform the decision as to which reserve services will be procured in the initial implementation of the daily auctions. The product review may result in new or amended reserve services, including aligning the definition of services with

²⁶ SEM-22-012, Section 4.2, page 44.

Regulation (EU) 2017/1485²⁷ establishing a guideline on electricity transmission system operation (hereafter referred to as “SOGL”).

Irrespective of the outcome of the product review, it is intended that the proposed design of the DASSA will allow for the procurement of redefined or amended services, existing services not in scope for the initial implementation, and any new services introduced in the future.

²⁷ [Commission Regulation \(EU\) 2017/1485 establishing a guideline on electricity transmission system operation \(SOGL\) \(eur-lex.europa.eu\)](https://eur-lex.europa.eu)

4 DASSA Mechanics

This section sets out the TSOs' proposals for the design of the daily auction for system services.

4.1 Services to be Procured in Initial DASSA

As set out in Section 3: Consultation Scope, the services in scope for the initial DASSA implementation are proposed to include FFR, POR, SOR, TOR1, TOR2, RRD and RRS, subject to the outcome of a TSO product review consultation in 2024 (see Section 1.4: Phased Implementation Roadmap).

In addition to these services, the proposed design of the DASSA, which is set out in detail in the sections below, has been developed to allow for the day-ahead procurement of:

- redefined services arising out of the product review;
- existing services not in scope for the initial DASSA implementation, but which may be in future be procured via auction, such as ramping margin services and reactive power;
- new services that may be introduced in the future.

It should be noted that the TSOs may utilise one or more of the procurement methods described in SEM-22-012 to procure existing, amended, or new system services, as appropriate and subject to industry consultation and approval by the Regulatory Authorities.

The TSOs propose, for the initial implementation of daily auctions for reserve services, that services will be procured individually. This is discussed in detail below in Section 4.6: DASSA Bidding Structure.

The proposed design of the DASSA has been developed to enable the TSOs to apply operational requirements, which may address certain operational needs, to the procurement of services. Such requirements may include, but may not be limited to:

- the procurement of continuously provided services from a single service provider;
- the procurement of different qualities or types of an individual service.

The application of the TSOs' requirements is discussed further in Section 4.10: DASSA Clearing Optimisation below.

Procurement requirements are subject to the outcome of the product review.

TSOs' Proposal:

The DASSA to initially procure reserve services, which will be subject to the outcome of a product review, with the auction design to allow for the procurement of other services in the future.

Services in scope to be procured individually in the initial implementation of the DASSA.

The auction design to allow for the TSOs to apply operational requirements to the procurement of services.

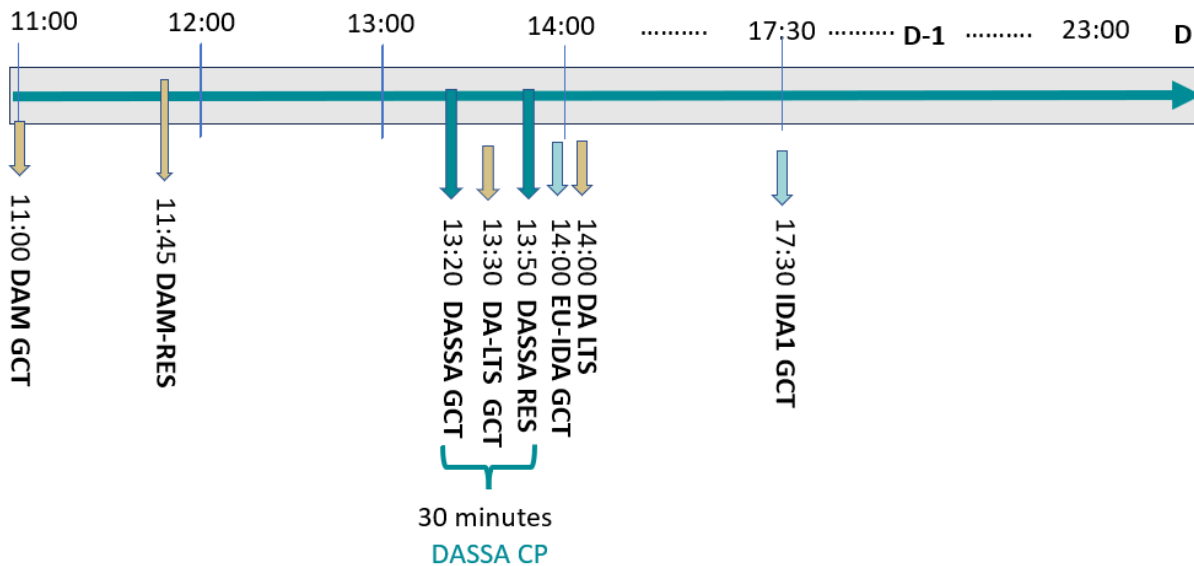
Question 1. Do you have any comments on the services to be procured under the DASSA?

4.2 Timing of the DASSA

The TSOs propose that the DASSA will take place daily after the Day-Ahead Market (DAM) and before the first run of the day-ahead Long-Term Scheduler (LTS).

The DAM gate closure is at 11:00, and the results are typically available at 11:45. The gate closure time for the first run of the LTS after the DAM is at 13:30. The proposed time for running the DASSA is intended to allow system service providers sufficient time to consider the submission of their DASSA bids after being notified of the DAM results.

Figure 4 below illustrates how this proposal may be implemented, with the DASSA scheduled to run daily at 13:20.



- | | |
|----------------------------------|---|
| GCT: Gate Closure Time | D-1: Day-ahead (Auction Day) |
| DAM: Day-ahead Market | D: Delivery Day |
| LTS: Long Term Scheduling | CP: Clearing Process (Auction Run, Approval) |
| ST: Secondary Trading | RES: Results |

Figure 4 Proposed DASSA Timing

In SEM-22-012, the SEM Committee decided that a daily ex-ante auction should take place after the DAM²⁸ and considered examples of auctions that would complete both before and after the LTS, with the precise timing subject to detailed design. SEM-22-012 also set out that commitment obligations would apply to services providers awarded volumes in the daily auction.

The TSOs are of the view that holding the DASSA between the DAM and the day-ahead LTS would be the preferred timing, as it would result in increased participation in the auction, as service providers would not need to account for system constraints and their energy position after the day-ahead LTS. This timing would allow auction winners to trade in the ex-ante intra-day energy markets to adjust their energy position to meet their commitment obligations, if required.

The TSOs' proposals on commitment obligations are described in detail in Section 6: Commitment Obligations and Incentives below.

The TSOs are cognisant that certain technology types, such as wind, solar and demand response, may not be able to accurately forecast their availability day-ahead to provide services. The TSOs propose that secondary trading be implemented, which will enable service providers to trade volume that has been awarded in the DASSA. Feedback that the TSOs received from industry highlighted the importance of

²⁸ SEM-22-012, Section 1.2, page 5.

secondary trading. Similarly, in SEM-23-103²⁹, the SEM Committee decided that secondary trading would be an important feature of the system services market, following feedback received to its consultation. Zero-volume bids, or bids that are limited by volume, are also proposed, allowing for service providers to be allocated volume in the ex-post Final Assignment Mechanism (FAM).

The TSOs' proposals on secondary trading are described in detail in Section 5: Secondary Trading. Proposals relating to zero-volume bids and bids limited by volume are set out in Section 4.6: DASSA Bidding Structure below.

TSOs' Proposal:

DASSA to take place after the DAM and before the first day-ahead Long-Term Scheduler (LTS).

DASSA Gate Closure Time to be 13:20, with the DASSA results to be published at 13:50.

Question 2. Do you have any comments on the timing of the execution of the DASSA?

4.3 DASSA Auction Timeframe

The Auction Timeframe refers to the duration to which each DASSA applies.

The TSOs propose that the DASSA Auction Timeframe will be for 24 hours and will start at 23:00 day-ahead (D-1) and terminate at 23:00 the following day (D).

This aligns with the European Day-Ahead energy market, and by extension the DAM auction timeframe.

TSOs' Proposal:

DASSA to procure system services for a 24-hour Auction Timeframe starting at 23:00 day-ahead (D-1) and ending at 23:00 next day (D).

Question 3. Do you have any comments on the DASSA Auction Timeframe?

4.4 DASSA Trading Period

A Trading Period refers to an interval in the Auction Timeframe for which the DASSA will provide an outcome. The auction will be cleared for each Trading Period.

For the initial implementation of the DASSA, the TSOs propose that each Trading Period will be of 30 minutes duration, beginning on the hour; there will be 48 Trading Periods per Auction Timeframe.

This proposal aligns with the existing Balancing Market settlement period and with the settlement period for payments for system services under the existing Regulated Tariff Arrangements.

The design of the DASSA will be compatible with the introduction of Trading Periods of different durations in the future, e.g. to align with a 15-minute imbalance settlement period.

²⁹ SEM-23-103, Section 4.10, page 31.

TSOs' Proposal:

The DASSA Trading Period to be defined as a 30-minute interval.

The DASSA design to be compatible with other Trading Period durations.

Question 4. Do you have any comments on the proposed Trading Period duration?

4.5 DASSA Volume Requirements

The TSOs propose to set an all-island volume requirement for each system service for each 30-minute Trading Period in the Auction Timeframe together with any operational requirements that the TSOs may wish to apply to the auction. The TSOs propose that the volume requirement for the entire Auction Timeframe will be determined once per auction, as close to the execution of the auction as is feasible.

It is envisaged that the volume requirement will include the volume of the service being auctioned, addressing any locational or zonal requirements, and reflecting the TSOs' operational requirements.

Further detail on locational requirements in the DASSA are set out in Section 8: Locational Considerations below.

The TSOs propose to publish the DASSA volume requirement prior to the running of the daily auction. The scheduling of the publication will allow service providers sufficient time to determine their bidding strategies for the DASSA and will be as close to the execution of the DASSA as is feasible.

Proposals for the methodology for calculating the volumes for the daily auctions are being developed by the TSOs, in addition to medium-term (1-2 years) and long-term (10 years) volume forecasting requirements (as specified in SEM-22-012). These proposals will be subject to industry consultation and approval by the Regulatory Authorities in line with the relevant Network Codes and legal framework in each jurisdiction. That consultation is scheduled to be carried out in 2024 as per the timelines in the PIR (see Section 1.4: Phased Implementation Roadmap).

As noted in Section 4.1: Services to be Procured in Initial DASSA, service definitions and operational requirements are subject to the outcome of a product review that the TSOs will undertake and consult on in 2024.

Note that under these proposals, a service provider will be obligated to declare its availability to provide a service if it is technically capable of doing so, irrespective of whether it was successful in the DASSA. This requirement is described further in Section 7.6: Service Availability Requirement. The TSOs propose that this requirement will be stipulated in the System Services Code.

TSOs' Proposal:

Volume requirement for each system service for each Trading Period in the Auction Timeframe to be published before the DASSA gate closure on the day of the auction (D-1).

Question 5. Do you have any comments on the publication of the volume requirements for the DASSA?

4.6 DASSA Bidding Structure

4.6.1 Auction Platform

The proposals set out in this section assume that a central auction platform, including an interface for service providers, will be implemented for the DASSA. The delivery of the auction platform, including a roll-out to service providers, will be subject to separate industry engagement, as required.

4.6.2 Bidding Code of Practice

Given the close interaction between the energy and system services markets, the TSOs are of the view that an evaluation of the potential for the exertion of market power in the DASSA arrangements should be undertaken. In our view, consideration should also be given to the development of a tailored Bidding Code of Practice (BCOP) for the DASSA arrangements that would facilitate the appropriate monitoring of the system services market.

Any market power evaluation, the need for licence changes to mandate accession to the code, and BCOP development/enforcement will be the responsibility of the Regulatory Authorities, with support to be provided by the TSOs as required.

4.6.3 Bidding Format and Process

Service providers may submit - in the form of one or more price/quantity pairs - a bid for each individual service for each Trading Period within the Auction Timeframe.

It is proposed that the DASSA auction platform will create stepwise linear supply functions for each service.

A typical stepwise linear supply function is illustrated in Figure 5 below. This supply function contains increasing steps that are made up of price/quantity pairs offered by the service providers, which are represented by the gold circles in the figure.

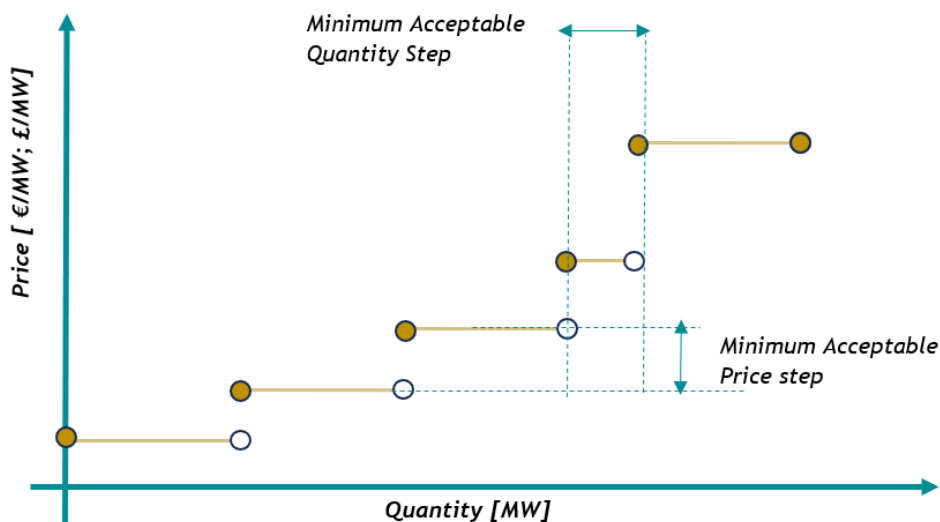


Figure 5 Stepwise Linear Supply Function

The TSOs propose the following bidding process for the DASSA:

- The auction will be single-sided, i.e. the TSOs will be setting the volume requirement for the auction, with a sealed bid process.

- Service providers may submit a bid for each individual service for each Trading Period within the Auction Timeframe.
- Service providers may submit one or more price/quantity pairs.
- Price/quantity pairs must be increasing.
- A maximum number of price/quantity pairs that service providers can submit will be implemented; this value is to be determined and will be driven by the optimal auction optimisation parameters and timeframe for running the auction.
- Minimum acceptable values for quantity and price for each step may be implemented, as represented in Figure 5.
- Price caps may be implemented; the value of any maximum bidding price is to be determined: this may involve quantitative analysis and approval by the Regulatory Authorities.
- Bids may be updated up to the time of the DASSA gate closure. After gate closure, the bids will persist through to real-time and settlement and rebids will not be permitted. This proposal is compatible with the EBGL³⁰.
- There will be no interdependency between bids i.e. all bids submitted for different products across different Trading Periods will be independent.

The rationale for proposing the above increasing stepwise linear supply function is to minimise the complexity of running the auction, and the cost of associated IT infrastructure, particularly as the auction would not need to solve a non-convex optimisation problem i.e. where price/quantity pairs do not increase.

4.6.4 Complex and Combinatorial Bids

The TSOs do not propose that complex bidding or combinatorial auctions be applied to the initial implementation of the DASSA.

Complex bidding would enable service providers to add additional criteria to their submitted bids, such as setting fill or kill conditions across the entire bidding curve, i.e. all steps, submitting block orders across different services or Trading Periods, or setting minimum revenue conditions.

In combinatorial auctions, service providers would be able to submit mutually exclusive package bids across different services and Trading Periods, with the clearing of the auction covering all services across different Trading Periods in a single optimisation.

The feedback that the TSOs received through bilateral engagement indicated that most stakeholders were of the view that complex bidding and combinatorial auctions would add unnecessary complexity to the DASSA arrangements. The TSOs remain open to considering these processes in the future, subject to operational requirements and industry needs.

Not implementing complex or combinatorial bidding also aligns with the SEM Committee's Objective and Assessment³¹ criterion for the auction to be simple and transparent enough so as to be easily understood.

³⁰ EU (2017/2195), Article 16(3), Page 14.

³¹ SEM-22-012, Section 2.1, page 13.

TSOs' Proposal:

Service providers to be able to submit a bid for each individual service for each Trading Period within the Auction Timeframe.

- DASSA bids to take the form of a stepwise linear supply function:
- Service providers may submit one or more price/quantity pairs, which must be increasing.
- A maximum number of price/quantity pairs will be implemented.
- Minimum acceptable values for quantity and price for each step may be implemented.
- Price caps may be implemented.
- Bids may be updated up to the time of the DASSA gate closure only.
- There will be no interdependency between bids.

Question 6. Do you have any comments on the proposed bidding format and process for the DASSA?

4.6.5 Zero-Volume DASSA Bids

The TSOs propose that service providers may submit a zero-volume bid for each individual service for each Trading Period within the Auction Timeframe.

Zero-volume bids will not be awarded any volume in the DASSA but will allow for service providers to be allocated volume in the FAM if they are in merit.

A zero-volume bid is a single price that can be submitted by a service provider before DASSA gate closure; this price would not be associated with any quantity. The TSOs propose the following process for zero-volume bids:

- Service providers may submit one price/zero-quantity pair.
- As with standard bids, described in Section 4.6.3: Bidding Format and Process above, zero-volume bids may be updated up to the time of the DASSA gate closure. After gate closure, the bids will persist through to real-time and settlement and rebids will not be permitted.
- Service providers may not submit a zero-volume bid in addition to a standard increasing step-wise linear bid for the same service and Trading Period(s).

In the FAM, the eventual availability of the unit will be considered and the service provider may be paid for available volume based on a merit order. The FAM is explained in detail in Section 7: Final Assignment Mechanism of the paper.

TSOs' Proposal:

Zero-volume DASSA bids to be facilitated to allow for service providers that only know their availability close to real time to be awarded volume in the FAM if they are in merit.

Question 7. Do you have any comments on zero-volume DASSA bids?

4.6.6 Volume-Cap DASSA Bids

The TSOs propose that service providers may cap the volume of their submitted price-quantity pairs that would be considered for the DASSA. Bids would only be considered in the DASSA up to the volume cap. Any volume for which they have service availability in excess of the cap would not be considered in the DASSA but could be allocated in the FAM if they were in merit.

The TSOs propose the following process for volume-cap bids, as illustrated in Figure 6 below:

- Service providers may submit a volume cap on their submitted DASSA supply function.
- The format of the bid will otherwise be that as described in Section 4.6.3 Bidding Format and Process above.

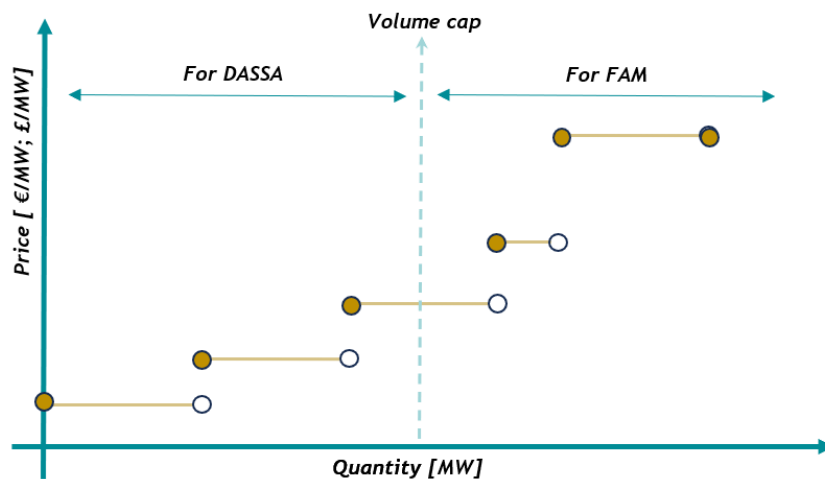


Figure 6 Volume-Cap DASSA Bids

In the FAM, the eventual availability of the unit above the volume cap will be considered. The unit may be paid for available volume based on a merit order. The FAM is explained in detail in Section 7: Final Assignment Mechanism of the paper.

Note that the proposed volume-cap of bids is not to be confused with a service provider's maximum volume of a service that it can provide (as established through the qualification process).

TSOs' Proposal:

Volume-Cap DASSA bids to be facilitated to allow for service providers to allocate a portion of their volume into the FAM only.

Question 8. Do you have any comments on volume-cap DASSA bids?

4.6.7 Divisibility of Bids

The TSOs propose that service providers may specify whether their DASSA bids are divisible or non-divisible.

A divisible bid allows for a fraction of the quantity of a submitted price/quantity pair to be awarded in the auction i.e. a partial quantity of the final submitted step that meets the volume requirement may be accepted (once it is less than the maximum offered volume in the service provider's supply function).

In the case of a non-divisible bid, a partial quantity of the final submitted step that meets the volume requirement will not be accepted in the auction i.e. only the entire volume may be accepted. This can be facilitated by the service provider adding a fill-or-kill condition individually to each step.

Figure 7 below illustrates a typical supply function, with the dashed green arrows showing the feasible acceptable volumes where bids are non-divisible.

The auction optimisation solution can optimally select between the divisible and non-divisible bids.

It should be noted that regardless of the divisibility of a bid, an individual step cannot be fully or partially accepted if the previous step has not been fully accepted.

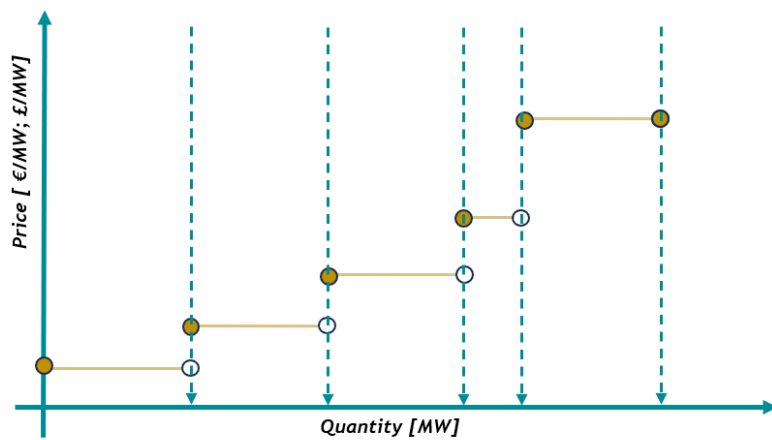


Figure 7 Non-Divisible Bids

The EBGL³² sets out that the divisibility of a bid is a non-standardised characteristic of balancing services that may be determined by service providers. The TSOs are of the view that service providers can set this non-standardised characteristic when they are submitting their DASSA bids.

TSOs' Proposal:

Service providers to be able to specify in their submitted bids whether DASSA bids will be divisible or non-divisible.

Question 9. Do you have any comments on the proposed approach for the divisibility of bids?

³² EU (2017/2195), Article 25.5, page 37-38.

4.7 Validation of Bids

Auction preprocessing will include a step to validate whether bids may or may not be submitted to the DASSA. This validation process will ensure that submitted bids are compatible with a service provider's technical capabilities as recorded in the System Services Register and may include, but not be limited to:

- Ensuring that service providers can only submit bids for services for which they have been approved through the qualification process.
- Ensuring that submitted bids for a service are within the technical capability of the service provider, as established through the qualification process.

The System Services Register is explained in Section 9: Registration and Qualification.

4.8 Volume Insufficiency

Auction preprocessing will evaluate the sufficiency of the volume per service offered by service providers in the auction.

Where a volume deficit is identified, the proposed measures available to the TSOs may include, but not be limited to:

- In the event that the daily auction has run, the volume deficit may be met in secondary trading at the DASSA clearing price. Secondary trading is described in detail in Section 5: Secondary Trading.
- In the event that the daily auction has not been run i.e. has been suspended due to the withholding of capacity, the volume requirement may be met in the FAM at default prices. The TSOs' proposals on the FAM are set out in Section 7: Final Assignment Mechanism.

In the case of a volume scarcity due to tight system conditions, the TSOs propose that the DASSA clearing price could be set at the auction price cap for the service.

The auction's pricing mechanics are explained in detail in Section 4.11: DASSA Clearing Prices.

In the event that the daily auction has not been run due to a technical difficulty, e.g. a technical issue with the auction platform, the volume requirement may be met in the FAM, with the price being set in the FAM.

TSOs' Proposal:

Measures to address volume insufficiency to be activated, depending on whether the reason is capacity withholding or volume scarcity.

Question 10. Do you have any comments on the proposals for addressing volume insufficiency in the DASSA?

4.9 DASSA Clearing Overview

The TSOs propose that the clearing of the auction will function as follows:

- The auction will be run on an all-island basis.
- The auction volume requirement will be determined in advance of the auction; it is envisaged that the volume requirement will be all-island and will include the MW volume of the service being auctioned, addressing any locational or jurisdictional requirements, and reflecting any operational requirements relating to service quality and continuous provision of services.

- The auction will be cleared respecting any locational constraints and operational requirements.
- The auction will be cleared to maximise the social welfare i.e. to minimise the cost of procuring system services.
- The objective function of the market clearing of the optimisation problem will be subject to a suite of constraints. See Section 4.10: DASSA Clearing Optimisation below for further details.
- The submitted bids for each service per Trading Period will be stacked to create a system wide supply function.
- There will be a single supply function per product per Trading Period for the island of Ireland.
- The auction will be cleared on a pay-as-cleared basis i.e. for each service for each Trading Period, the clearing price will be the value of the highest price/quantity pair that satisfies the auction volume requirement. The DASSA pricing proposals are explained in further detail in Section 4.11: DASSA Clearing Prices.
- A DASSA Order will be allocated to auction winners for each service for each Trading Period, detailing the volume of the service awarded and the price to be paid for the provision of the service.
- A DASSA Order will include a Commitment Obligation to provide the awarded service for the specified Trading Period. Commitment Obligations are discussed in detail in Section 6: Commitment Obligations and Incentives below.

TSOs' Proposal:

DASSA auction to be cleared on a pay-as cleared basis per Trading Period in the Auction Timeframe for the whole island of Ireland.

The objective function of the market clearing of the optimisation problem to be subject to a suite of constraints.

A DASSA Order, and associated commitment obligation, to be allocated to auction winners for each service for each Trading Period in the Auction Timeframe.

Question 11. Do you have any comments on the DASSA clearing overview?

4.10 DASSA Clearing Optimisation

This section sets out the TSOs' proposals for how the optimisation of the daily auction clearing process would function.

The clearing of the proposed DASSA auction will involve solving an optimisation problem for each service per Trading Period. There are two elements to the optimisation process:

- The objective function, the aim of which is to maximise the social welfare i.e. minimise the cost of the auction.
- The satisfaction of applicable constraints, such as minimum service volume requirements per location.

4.10.1 Objective Function of the Auction Clearing Optimisation

The aim of the objective function of the optimisation problem is to minimise the cost of procuring system services through the auction.

The objective function will have two main components:

- The first component will involve the selection of bids submitted by service providers on a price basis i.e. selecting the cheapest bids first, up to satisfying the volume requirement for the service.
- The second component will involve the processing of the value functions set by the TSOs for any operational requirements that will apply to the auction e.g. different qualities of a service or the continuous provision of selected services. These value functions will represent the TSOs' willingness to allocate a better merit position, and potentially higher payments, to bidders that meet operational requirements. See Section 4.10.2: Objective Function Operational Requirement - Service Quality and Section 4.10.3: Objective Function Operational Requirement - Continuous Provision of Services below for further detail on these value functions.
- Note that operational requirements may also be managed in the auction through the satisfaction of constraints. See Section 4.10.4: DASSA Clearing Optimisation Constraints below for a detailed description of how this would function.

4.10.2 Objective Function Operational Requirement - Service Quality

Subject to the **outcome** of a reserve services product review on which the TSOs will consult in 2024, the TSOs may define different qualities of certain system services based on the benefits they provide to the secure operation of the system.

The TSOs propose that service providers will be required to submit individual bids for the various quality levels of a service that they wish to provide (see Section 4.6.3: Bidding Format and Process above).

To incentivise service providers to offer high quality types of services into the auction, value functions will be added to the objective function of the DASSA clearing optimisation problem. These value functions will increase the probability of service providers that have submitted bids for higher quality types of services to be awarded a DASSA Order, based on the TSOs' willingness to pay.

The clearing prices for higher quality types of services will be the maximum of the DASSA clearing price for the higher quality type of service and that of the lower quality type of service. Therefore, in all cases, the payments for the higher quality type of services will be at least equal to that of the lower quality type of service.

This proposal allows for the TSOs to set a minimum requirement for high quality type services, together with a total requirement for an individual service irrespective of quality type.

4.10.3 Objective Function Operational Requirement - Continuous Provision of Services

Subject to the outcome of a reserve services product review that the TSOs will consult on in 2024, the TSOs may incentivise service providers to offer availability for an implicit bundle of services i.e. the continuous provision of a subset of services.

The TSOs propose that the objective function of the auction optimisation problem will comprise of two elements (note that in order to be cleared for an implicit bundle of services, price-quantity pairs for each service within the bundle must be submitted by the service provider in their bids):

- The effective offered price for an implicit bundle of services will be the sum of the prices of the bids submitted for each individual service within the bundle. The maximum effective price that has been offered will be the clearing price paid to all providers of the implicit bundle and will be included in the objective function of the optimisation problem.
- Predefined value functions (to be included as transparent auction parameters) will be added to the objective function of the DASSA clearing optimisation problem to increase the probability of service providers that have submitted bids for implicit bundles of services being awarded DASSA Orders in the auction, based on the TSOs' willingness to pay. In instances of system conditions where the continuous provision of services may have greater system value, this will be reflected in the value

function of the objective function - essentially assigning a high priority to the procurement of an implicit bundle of services.

This proposal allows for the TSOs to set a minimum requirement for an implicit bundle of services, as well as a total requirement for the implicit bundle and the individual services.

TSOs' Proposal:

The objective function of the DASSA clearing optimisation problem to:

- Minimise the cost of procuring services.
- Include value functions for addressing operational requirements related to the continuous provision of services and the quality of service, where those requirements are not set as auction constraints.

Question 12. Do you have any comments on the proposals for the design of the objective function defined for the DASSA clearing optimisation problem, including the value functions for operational requirements?

4.10.4 DASSA Clearing Optimisation Constraints

The TSOs propose that a limited number of constraints which need to be met will be included in the clearing of the daily auction.

The constraints to be included, and their volume threshold, will be informed by the outcomes of consultations relating to reserve products, reserve volumes and locational methodologies for reserve services that the TSOs will conduct in 2024. Section 1.4: Phased Implementation Roadmap provides further detail on these consultations.

The TSOs propose that only long-run reserve constraints, i.e. those enduring constraints that are required to ensure operational system security, will be modelled in the DASSA clearing optimisation problem. Such constraints may include, but not be limited to:

- A minimum total volume requirement for a service on an all-island basis.
- A minimum volume requirement for a service per zone (where jurisdictions will be assigned as zones, with the option to define other zones).

The TSOs' proposals for how locational constraints may be met in the auction are described in more detail in Section 4.11: DASSA Clearing Prices below.

In addition to the inclusion of value functions in the optimisation objective function, operational requirements may be modelled as constraints in the DASSA clearing, including:

- A minimum volume requirement for an implicit bundle of services, reflecting a need for the continuous provision of services.
- A minimum volume requirement for a higher quality type of service.

The TSOs do not propose to model any temporary local constraints, which may be the outcome of a TSO action to address system security or network issues, in the DASSA clearing optimisation problem; these would include transmission line constraints and outages. However, the TSOs propose that such constraints may be met in the FAM (see Section 7: Final Assignment Mechanism).

Additional detail on locational constraints can be found in Section 8: Locational Considerations.

TSOs' Proposal:

Long-run reserve constraints to be modelled in the daily auction clearing optimisation, as required for system security.

Operational requirements to be included as constraints, where they are not being included as value functions in the optimisation objective function.

Question 13. Do you have any comments on the constraints to be modelled in the DASSA clearing optimisation problem?

4.11 DASSA Clearing Prices

This section sets out the TSOs' proposed options for the setting of the clearing prices in the daily auction. While the TSOs do not currently have a preference for either option, we note that the SEM Committee, as expressed in SEM-22-012, considers the implementation of zonal incentives to be an important element of the future arrangements for system services.

4.11.1 Single Clearing Price per Service

Under this proposal, a single price would be cleared for each system service in the daily auction. This is compatible with the inclusion of operational requirements in the objective function of the optimisation problem, as described in Section 4.10: DASSA Clearing Optimisation above.

Where a higher-priced service provider is required to meet a binding locational constraint, and if the auction clears at that price, then all DASSA Order holders will receive that price.

This proposal would potentially lead to increased auction clearing prices across all zones and higher payments to all system service providers.

4.11.2 Zonal Pricing

Under this proposal, distinct zonal prices would be paid to those service providers that are required to meet binding locational constraints, with a standard DASSA clearing price to be paid to all other service providers.

Where a higher-priced service provider is required to meet a binding locational constraint, and this price is greater than the auction clearing price of other zones, the higher price will be paid to the service providers located in the affected zone.

The locational methodology for defining zones and associated constraints will be consulted on by the TSOs in 2024.

Locational constraints are described in detail in Section 8: Locational Considerations.

TSOs' Proposal:

The daily auction to be cleared with either:

- A uniform all-island clearing price per service per Trading Period.
- Zonal pricing where there are binding locational constraints.

Question 14. Do you have any comments on the proposed options for the clearing price of the daily auctions?

4.11.3 Scarcity Pricing

As proposed in Section 4.8: Volume Insufficiency above, in the case of a volume scarcity due to tight system conditions, the DASSA clearing price could be set at the auction price cap for the service.

4.12 DASSA Outcomes

To summarise, the outcome of the proposed daily auction for reserve services will be:

- 1) A service volume allocated to each service provider per service per Trading Period.
- 2) A clearing price per service, per Trading Period; or a clearing price per service, per Trading Period, per location.
- 3) A clearing price for an implicit bundle of services.
- 4) A clearing price for types of quality of services.

A DASSA Order, with its associated commitment obligations, will be awarded to successful service providers.

The total cleared volumes per service, per Trading Period, with the associated clearing prices, will be published.

5 Secondary Trading

This section sets out the TSOs' proposals for secondary trading of DASSA Orders.

5.1 Secondary Trading Overview

The TSOs propose that secondary trading of DASSA Orders be implemented from go-live of the DASSA arrangements.

Secondary trading will allow service providers to buy and sell DASSA Orders after the daily auction has run. DASSA Order holders will be able to adjust their position during the secondary trading window, which is explained in Section 5.3: Secondary Trading Window. Service providers that only know their availability closer to real-time will be able to purchase DASSA Orders. DASSA Orders could be traded fully or partially, subject to relevant limits. Trading a DASSA Order will transfer the relevant Commitment Obligation and right to payment associated with the Order.

Service providers will not be permitted to trade into positions that are infeasible i.e. a service provider must not purchase a DASSA Order that it knows it will not be capable of fulfilling. The TSOs propose that this will be set out in the System Services Code.

The TSOs propose that secondary trades will be facilitated via a central trading platform. Buy and Sell Orders will be validated against predefined rules set by the TSOs, then added to an Order Book where they will be matched. Matched trades will be subject to further validation to ensure a trade will not breach any constraints that have been met in the daily auction. It is also proposed that bilateral trades between service providers will be permitted, provided that the TSOs are notified of these via the central trading platform. Bilateral trades would also be subject to any validation processes. Service providers will be notified of a successful or unsuccessful trade as this occurs.

Sections 5.2 to Section 5.5 below describe these proposed arrangements in more detail. Section 5.6: Potential Market Power in Secondary Trading describes how the TSOs consider that the potential for market power in secondary trading is low and Section 5.7: TSOs' Participation in Secondary Trading considers the circumstances in which participation of the TSOs in secondary trading may be warranted.

Where relevant and unless stated otherwise, the proposals below apply to both secondary trades made through the matching of Buy and Sell Orders and bilateral secondary trades.

5.2 Central Secondary Trading Platform

The TSOs propose that a secondary trading platform, which would facilitate both the matching of Buy and Sell Orders and bilateral trades, will be implemented from go-live of the DASSA arrangements.

In SEM-23-103³³, the SEM Committee acknowledged the need for a secondary trading solution to be implemented. The paper states:

“the TSOs should seek to deliver a day-one secondary trading solution for go-live of any market-based arrangements insofar as possible. A central trading platform is likely to be the optimal solution, however bilateral trading should also be facilitated.”

The TSOs support this view and consider that a central trading platform is essential from go-live of the DASSA arrangements in order to reduce the cost of trading DASSA Orders and to facilitate the participation of all technologies and service providers. Feedback from industry, captured through our bilateral engagements in 2023, also articulated a strong preference from industry for a central platform to enable the efficient functioning of secondary trading of DASSA Orders.

³³ SEM-23-103, Section 4.10, page 31.

The TSOs also consider that a central secondary trading platform will need to be fully auditable, with all trades validated and traceable.

TSOs' Proposal:

Secondary trading to take place via a central trading platform, to be operational from the go-live of the DASSA arrangements.

Buy and Sell orders will be placed on the central trading platform and bilateral secondary trading will also be permitted, provided that the TSOs are notified of trades via the central trading platform.

Question 15. Do you have any comments on the proposal to implement a central trading platform from go-live of the DASSA arrangements?

5.3 Secondary Trading Window

The TSOs propose that DASSA Orders will be able to be traded after the DASSA has run and up to 90 minutes before the commencement of the relevant Trading Period.

Figure 8 below illustrates this proposal: the secondary trading window opens after the results of the DASSA have been published day ahead (D-1) and closes 90 minutes (t-1.5) before the start of the relevant Trading Period (t) within the delivery day (D).

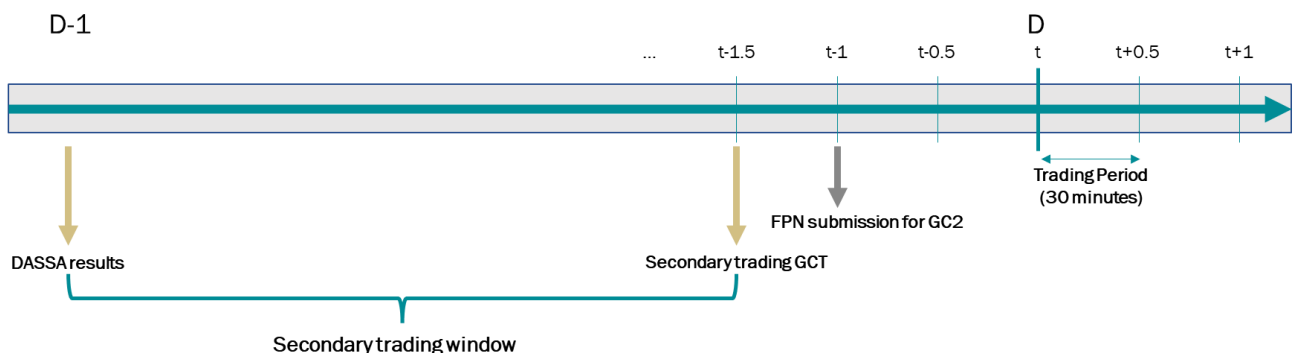


Figure 8 Secondary Trading Window

The proposed window would allow secondary trading up to a deadline as close as possible to real time, thereby facilitating the participation of those technologies that have variable availability, while allowing service providers time to submit an FPN, if required, in advance of Gate Closure 2 (GCT2) in the Balancing Market (which is one hour before the start of the relevant Imbalance Settlement Period).

TSOs' Proposal:

Secondary trading to take place after the DASSA results are published and up to 90 minutes before the relevant Trading Period.

Question 16. Do you have any comments on the proposals for the timing of the secondary trading window?

5.4 Secondary Trading Mechanics

This section sets out the TSOs' proposals for how the secondary trading of DASSA Orders would function.

The TSOs propose that secondary trading may be facilitated by two means:

- The direct placing, matching and validation of Buy and Sell Orders on the secondary trading platform. This is covered in Section 5.4.1 to Section 5.4.3 below.
- Bilateral trading, to be validated through the secondary trading platform. This is covered in Section 5.4.4: Bilateral Trading of DASSA Orders below.

5.4.1 Placing Buy and Sell Orders

The TSOs propose that Buy and Sell Orders will be placed on the central trading platform by service providers; the orders will then be validated before being added to an Order Book to execute the matching process. The validation and matching processes are described in Section 5.4.5: Validation of Matched Trades and Bilateral Trades below.

A Buy Order is an offer to take on a DASSA Order and its associated commitment obligations. Such orders may typically be placed by service providers that know their availability to provide services closer to real time.

A Sell Order may typically be placed by the holder of a DASSA Order that may no longer be available to provide all or a portion of its awarded service volume and does not wish to be subject to the associated commitment obligation.

The TSOs propose that eligible service providers will be able to make simple orders for a given service and Trading Period(s) which will specify a service quantity and a Secondary Trade Price limit, whereby the price limit represents the minimum price a service provider is willing to accept for a Sell Order and the maximum price a service provider is willing to offer for a Buy Order. Simple orders across multiple trading periods will not be linked. Note that the Secondary Trade Price is not to be confused with the DASSA Clearing Price, which will be the price that the TSOs pay the new DASSA Order holder arising out of the secondary trade. A worked example is set out in Section 5.5: Commitment Obligation and Right to Payment below.

A DASSA Order can be partially traded in terms of the volume of a service and the number of Trading Periods, except in the case where a service provider has been awarded an implicit bundle of services in the DASSA. As set out in Section 4.10.3: Objective Function Operational Requirement - Continuous Provision of Services, service providers may win DASSA Orders for implicit bundles of services, reflecting the TSOs' preference for the continuous provision of services. It is envisaged that such continuously provided services would be labelled as a single product on the central trading platform for the purposes of secondary trading, enabling it to be bought or sold using a simple order subject to limits applied by the TSOs which are described in Section 5.4.5: Validation of Matched Trades and Bilateral Trades below.

The TSOs do not propose that block orders for combinations of products or links between Trading Periods be considered for the initial implementation of the DASSA, given the additional complexity that these would add.

The TSOs propose for consideration the following conditions that service providers may specify in their secondary trade orders:

- Fill or Kill: The Order must be immediately³⁴ accepted for its full volume, or it will be cancelled.
- Immediate or Cancel: The Order must be immediately accepted fully or partially against one or more Order or it will be cancelled.
- Good Till: The Order will be cancelled if it cannot be matched by a specified date / time.

³⁴ An Order is immediately executed if an opposite Order already exists in the Order Book where a Buy Order is priced at or above the lowest offer in the book, or a Sell Order is priced at or below the highest bid in the book.

TSOs' Proposal:

Simple Buy and Sell Orders to be placed on the central trading platform for a given service and Trading Period(s). Service providers will be able to specify relevant conditions associated with a Buy or Sell Order.

Question 17. Do you have any comments on the proposals for placing Buy and Sell Orders?

5.4.2 Validation of Buy and Sell Orders

The TSOs propose that Buy and Sell Orders that are placed on the central trading platform will undergo a validation process before being added to the secondary trading Order Book to be matched. This process will ensure that the trades are feasible with regard to the capabilities of the service providers. These validation checks will also apply to the buy and sell elements of bilateral trades, which are explained in Section 5.4.4: Bilateral Trading of DASSA Orders.

The validation of secondary trades prior to being matched may include, but not be limited to:

- Ensuring that Sell Orders are consistent with the DASSA Order, and its associated obligations, as held by the service provider.
- Ensuring that any restrictions imposed by the TSOs - subject to system conditions - on secondary trading are observed, including minimum and maximum volumes of services allowable to be traded, limits on the total number of purchasing services providers, or limits on the density of service provision (e.g. total service volume divided by the total number of service providers).
- Ensuring that the integrity of implicit bundles of services, and their associated benefit of continuous provision, that were procured in the DASSA are maintained. Proposed secondary trading restrictions involved are described in Table 4 below.

Table 4 Secondary Trading Restrictions for Continuously Provided Services

Nature of trading	TSOs' Proposal
Trading of all services procured as an implicit bundle	Permitted
Trading of partial volume across all services procured in an implicit bundle	Permitted
Trading individual services procured in an implicit bundle	Not Permitted

The above measures are in addition to the validation of bids in the DASSA, which is described in Section 4.7: Validation of Bids.

The proposed measures for the validation of matched Buy and Sell Orders are set out in Section 5.4.5: Validation of Matched Trades and Bilateral Trades below.

TSOs' Proposal:

Buy and Sell Orders to be validated against service provider capabilities and other relevant validation checks to ensure all Orders are feasible.

Question 18. Do you have any comments on the proposals for the validation of Buy and Sell Orders?

5.4.3 Matching of Buy and Sell Orders

The TSOs propose that once a Buy or Sell Order has been validated and added to the Order Book it could be matched with a corresponding Order.

Matched trades will be subject to an evaluation as to whether they meet the relevant DASSA constraints, which are set out in Section 4.10.4: DASSA Clearing Optimisation Constraints. This post-matching validation is described in detail in Section 5.4.5: Validation of Matched Trades and Bilateral Trades below.

The TSOs have considered two options for how secondary trades will be matched, which are described in the following two sections.

5.4.3.1 Option 1: First-come-first served rolling matching

This option would be comparable to the way in which orders in the Intraday Continuous Market (IDC) are matched. Matching on a first-come first-served basis may work as follows (subject to the conditions that service providers may specify in their secondary trade orders, as set out in Section 5.4.1 Placing Buy and Sell Orders above):

- Rolling matching of trades would be executed throughout the secondary trading window.
- Valid Orders would be placed in the Order Book and matched to a corresponding order in real-time.
- If an Order could not be matched immediately, it would remain in the Order Book where it could be matched at a later stage.
- Orders would be allowed to be partially matched, subject to limits to be established by the TSOs. Partial matching would allow a proportion of the volume to be traded, and the remainder to stay in the Order Book.
- The Order book would be available to all qualified service providers during the secondary trading window.

This option would give service providers more time to adjust their market position in advance of real time as they would learn of their DASSA Obligations during the secondary trading window as trades were approved or rejected. Rolling matching should also encourage the posting of offers to maximise the chances of being matched if the secondary trading market is not liquid.

Under Option 1 secondary trades may be made before providers who only know their availability closer to real time are able to engage in secondary trading, however, provided these units can supply services at a lower cost this should not necessarily be a barrier to entry since more expensive service providers would still have a good incentive to sell their DASSA Orders in this case.

Option 1 is the TSOs' preferred approach.

5.4.3.2 Option 2: Batch matching

Alternatively, Orders could be matched in a batch after the secondary trading gate closure. Under this option, Buy and Sell Orders would be added to the Order Book during the secondary trading window and after secondary trading gate closure these Orders would be matched based on Secondary Trade Price limits and potentially other factors such as quality levels and jurisdictional requirements.

While batch matching would create thickness in the market which could establish a market price, this is not the aim of secondary trading, which primarily seeks to facilitate the efficient transfer of DASSA Orders. Under batch matching, providers would only learn of their DASSA Obligations after the batch process was completed which would be after the secondary trading gate closure and therefore closer to real time. This would provide less time to adjust energy positions compared to rolling matching which would provide better opportunities for the prompt resolution of offers during the secondary trading window. Option 2 may require the gate closure time for secondary trading to be earlier which may disincentivise participation for late-availability units.

TSOs' Proposal:

Matching of Orders in secondary trading to be done on a first-come first-serve basis (Option 1).

Question 19. Do you have any comments on the TSOs' preferred approach to match Orders on a first-come first-serve basis?

5.4.4 Bilateral Trading of DASSA Orders

The TSOs propose that secondary trading may also be facilitated through bilateral trading between service providers, with such trades to be recorded, validated, and confirmed on the central trading platform.

Bilateral trades between eligible service providers would be pre-agreed and then posted on the central trading platform, specifying the volume of the relevant service for the relevant Trading Period(s) to be traded. Bilateral trades would not need to specify the agreed secondary trading price. One provider may submit the trade on the platform with an approval required from each counterparty.

This proposal is consistent with SEM-23-103 which suggested bilateral trading should also be facilitated.³⁵ While the TSOs received some feedback from industry suggesting that bilateral trading may be costly for smaller service providers, the majority view was in favour of facilitating bilateral trades as it would allow providers of system services to manage risk across units within a portfolio and as a result this may increase the incentive to participate in the DASSA.

The matter of potential market power in secondary trading and bilateral trading is addressed in Section 5.6: Potential Market Power in Secondary Trading below.

Once submitted to the platform, bilateral trades would be subject to the validation processes set out in Section 5.4.2: Validation of Buy and Sell Orders for the Buy and Sell elements of the trade and Section 5.4.5: Validation of Matched Trades and Bilateral Trades for the matched bilateral trade.

TSOs' Proposal:

Bilateral secondary trading of DASSA Orders to be facilitated, with all orders to be recorded, validated, and confirmed on the central secondary trading platform.

Question 20. Do you have any comments on the proposals for placing bilateral trades?

5.4.5 Validation of Matched Trades and Bilateral Trades

The TSOs propose that both matched and bilateral secondary trades would be validated to ensure that the DASSA constraints, as described in Section 4.10.4: DASSA Clearing Optimisation Constraints, have been met. Where a DASSA constraint is broken, the trade would be deemed invalid and would not complete.

The TSOs have considered two options for validating that all secondary trading meets the DASSA constraints. These are described in the following two sections.

5.4.5.1 Option 1: Permit secondary trading between identical service providers only

Under this option, secondary trading would only be permitted between service providers in the same zone and with the same service capabilities e.g. with respect to the quality type of a service in terms of being either dynamic or static.

This would ensure the relevant DASSA constraints would be met in a straightforward manner.

³⁵ SEM-23-103, Section 4.10, page 31.

5.4.5.2 Option 2: Permitting secondary trading between imperfectly substitutable service providers

As an alternative, secondary trades would be permitted between non-identical service providers, provided that the relevant DASSA constraints were still met. This approach may work as follows:

- Trading of a DASSA Order for a service between service providers with identical capabilities but residing in different jurisdictions or zones may be permitted if it did not violate the DASSA zonal constraints. Otherwise, these trades would be blocked.
- Trading of a DASSA Order for a service with a particular quality type between service providers with non-identical capabilities may be permitted if the service could be provided by the buying party at the same quality level or higher. The Order would remain at the original quality level for future trades.

Option 2 would be the TSOs' preferred approach. It would increase the opportunity for a service provider to trade in and out of a position, while still ensuring that the needs of the power system are met. This may boost participation in the DASSA and increase liquidity in the secondary market. This option is also compatible with any future changes in how constraints are defined, such as if more granular zonal constraints were to be set.

TSOs' Proposal:

Secondary trading to be permitted between imperfectly substitutable service providers (Option 2).

Question 21. Do you have any comments on the TSOs' preferred approach to allow secondary trades between imperfect substitutes?

5.4.6 Notification

Service providers would be notified of any outcomes of the secondary trading process. These may include:

- Notification that a Buy Order or Sell Order failed validation when this has occurred.
- Notification of a successful secondary or bilateral trade.
- Notification of an unsuccessful secondary or bilateral trade.

Notifications would be sent through the central trading platform.

5.5 Commitment Obligation and Right to Payment

The successful trade of a DASSA Order, which has been approved by the TSOs, would transfer the relevant Commitment Obligation and right to payment associated with the original DASSA Order to the buyer.

This means that the buyer would receive the DASSA price for the Order from the TSOs provided they meet their obligations, regardless of the Secondary Trading Price at which the secondary trade was matched in the platform or agreed bilaterally. The secondary trade payment agreed between service providers would be made bilaterally. A worked example of a secondary trade is included in Table 5 below.

Table 5 Secondary Trade Worked Example

Secondary trading right to payment worked example:

Suppose Unit A bids for POR in the DASSA and is awarded a DASSA Order in the auction for 10MW at a DASSA clearing price of €5/MW for a particular service.

Unit A makes a secondary trade with Unit B for its Order, in full, at an agreed price of €15.

Unit B will pay Unit A €15 for the DASSA Order.

Unit B will receive €50 (for 10MW at €5/MW) provided it meets the commitment obligations associated with the DASSA Order and is not subject to any applicable performance scalars.

Unit A will receive €15 from Unit B.

Unit A will no longer have a commitment obligation associated with the DASSA Order as this has been passed on to Unit B.

DASSA Prices and Commitment Obligations are described in Section 4.11: DASSA Clearing Prices and Section 6: Commitment Obligations and Incentives.

5.6 Potential Market Power in Secondary Trading

In the TSOs' bilateral engagements with industry, concerns were expressed about potential market power in secondary trading, whereby large providers holding DASSA Orders may decide not to trade. This would exclude technologies who are only aware of their availability closer to real-time from participating.

Our auction design partners DotEcon and Afry are not currently concerned about market power in secondary trading and bilateral trading as there would be a good incentive to trade DASSA Orders. While it could be rational to not engage in secondary trading due to behaviour aimed at driving competitors out of the market in the long-run, appropriate measures would be taken by the Regulatory Authorities and the TSOs which would make this strategy unlikely to be successful. Any market power exercised in secondary trading would also be self-limiting as extraordinary profits from acquiring Orders in the DASSA and refusing to trade would result in increased competition in the DASSA, thus reducing the possibility of exploiting potential market power. In addition, bidding in the DASSA is done at a unit level which limits the ability of a bidder to accumulate volume in the DASSA and exercise market power.

The TSOs agree with DotEcon/ Afry's views regarding market power in secondary trading and invite further industry feedback on the topic.

Question 22. Do you have any comments on the assessment of market power in secondary trading?

5.7 TSOs' Participation in Secondary Trading

The DASSA aims to procure balancing capacity through a market-based approach at the day-ahead stage in accordance with the EGBL³⁶ to ensure operational security and provide certainty for the TSOs and service providers. Secondary trading will allow for the transfer of DASSA Orders which are to be remunerated at the DASSA clearing price.

As noted in Section 4.8: Volume Insufficiency, the TSOs propose that to address the exceptional issue of volume insufficiency in the DASSA due to capacity withholding, the TSOs will be able to participate in

³⁶ EU (2017/2195), recital 15, page 2.

secondary trading. It is envisaged that this would occur in limited and exceptional circumstances, the conditions of which would be clearly communicated to industry.

The participation of the TSOs in secondary trading via the central trading platform would take the form of:

- Meeting unmatched Buy Orders at a Secondary Trading Price of zero, which would give the buyer a DASSA Order for the volume associated with the Buy Order. The buyer would receive the DASSA clearing price for this volume; or
- Submitting Sell Orders at a Secondary Trading Price of zero, which would give a potential buyer a DASSA Order at the DASSA clearing price.

This proposal aims to minimise uncertainty in the event that the TSOs are unable to procure the required volume in the DASSA by assigning the DASSA clearing price to the required additional volumes in secondary trading, which are expected to be relatively small. The corresponding DASSA price for providers who cleared in the DASSA would not be modified as a result of these actions.

For the avoidance of doubt, meeting the volume requirement in secondary trading would not allow service providers to update their bid for the FAM.

This proposal would minimise disruption to the procurement process and provide certainty for service providers who cleared in the DASSA. This reflects the objective of the EGBL³⁷ regarding a fair, objective and transparent market-based approach which prevents distortions.

TSOs' Proposal:

The TSOs may participate in secondary trading in the event of volume insufficiency in the DASSA due to capacity withholding by meeting unmatched Buy Orders or submitting Sell Orders at a Secondary Trading Price of zero. This would assign the DASSA clearing price to the additional volumes sold in secondary trading. Service providers would not be able to update their bids for the FAM in this event.

Question 23. Do you have a view on the TSOs participating in secondary trading?

³⁷ EU (2017/2195), Article 3.1(e)

6 Commitment Obligations and Incentives

A critical component of the TSOs' proposed DASSA design is that service providers are incentivised to meet the obligation to fulfil their DASSA Order, to accurately declare their availability to provide a service, and to respond when called upon to do so i.e. automatically in response to a frequency event or in response to a dispatch instruction, as applicable.

This section sets out the TSOs' proposals for the Commitment Obligation associated with a DASSA Order, the scenarios where a Compensation Payment to the TSOs will apply, and the application of performance scalars to payments.

6.1 Commitment Obligation Overview

Under the TSOs' proposals, the essential feature of a DASSA Order is that it will include a Commitment Obligation to provide the awarded service for the specified Trading Period i.e. the DASSA Order Holder, which will be a service provider that has won in the DASSA or has any approved purchase order in secondary trading, will be required to be available to provide the service and to deliver it if called upon to do so.

The proposed process for incentivising a DASSA Order Holder to fulfil its obligation comprises:

- Confirmation of a DASSA Order (otherwise the Order lapses).
- Levy of a Compensation Payment on the service provider.
- Application of Availability and Event Performance Scalars to payments.

Section 6.2: Commitment Obligation and Incentive Process below provides an outline of the proposed end-to-end process. In this section, the TSOs describe the key incentives and components of the process.

The evaluation of a DASSA Order will principally be concerned with the status of the Order at Balancing Market Gate Closure, i.e. one hour before the applicable Trading Period.

6.1.1 Confirmed DASSA Order

In order for a service provider to be paid for its DASSA Order, the Order must be confirmed (subject to exceptions). A Confirmed DASSA Order requires its holder to be available to provide the required services. Holders of Confirmed DASSA Orders will receive a payment at the DASSA clearing price, subject to the application of performance scalars.

A DASSA Order may be fully or partially confirmed, where:

- For a fully Confirmed DASSA Order, the volume is equivalent to the DASSA Order held by the service provider.
- For a partially Confirmed DASSA Order, the volume is less than the DASSA Order held by the service provider.

DASSA Order Holders that do not meet the requirements to confirm their Order may not be paid and may have to pay the TSOs a Compensation Payment.

Whether a DASSA Order has been confirmed or not will be determined ex-post.

The proposed design allows for diverse technology types to have their DASSA Orders confirmed (assuming the Order is not lapsed), depending on:

- A service provider's interaction with the ex-ante energy market and whether it submits a Final Physical Notification (FPN)³⁸, or has a deemed FPN, subject to the requirements for units set out in the Trading and Settlement Code.
- Whether a service provider has been subject to certain dispatch instructions in a specified timeframe.

The circumstances where a DASSA Order may be confirmed for different technology types are described below.

6.1.1.1 Service providers that submit FPNs or have deemed FPNs:

For these types of units, a DASSA Order will be confirmed if the service provider has submitted an FPN by Gate Closure, or has an FPN deemed by the TSOs, for the relevant Balancing Market settlement period - equating to the DASSA Trading Period - that is compatible with its DASSA Order. Typically, FPNs are submitted by conventional units, energy storage units, non-priority wind and solar farms, and demand response units. A deemed FPN will apply to interconnectors.

6.1.1.2 Service providers that do not submit FPNs:

For these types of units, the service provider's DASSA Order will be automatically confirmed. This method will apply to priority dispatch renewable units.

6.1.1.3 Service providers that have been dispatched:

Where a DASSA Order Holder has been subject to a pre-Gate Closure dispatch instruction or frequency event, the Order may be confirmed if it is compatible with the dispatched volume or volume delivered in response to the frequency event. In the case where the Order is not compatible, the Order will fully or partially lapse.

The scenarios where the above circumstances may occur are described in Section 6.2: Commitment Obligation and Incentive Process below.

6.1.2 Lapsed DASSA Order

If DASSA Order Holder does not subsequently have its DASSA Order confirmed, the Order will lapse: in this case, the service provider will not be paid for the DASSA Order and may have to pay the TSOs a Compensation Payment (subject to exceptions).

A Lapsed DASSA Order can happen in two ways:

- A DASSA Order Holder does not meet the conditions for confirming a DASSA Order, as described in Section 6.1.1: Confirmed DASSA Order above.
- A DASSA Order Holder chooses to lapse all or a portion of its Order and notify the TSOs: self-lapsing may be used by a service provider when it knows that it will be unable to fulfil its commitment obligation, e.g. due to a technical issue. A DASSA Order may be self-lapsed up to Gate Closure i.e. one hour before the applicable Trading Period.

The TSOs will prefer that service providers self-lapse their DASSA Order if they are aware that there is a risk that they will not be able to meet the obligation associated with the Order. The relative values of the Compensation Payment and the Availability Performance Scalar will be designed to incentivise this behaviour. There will be no financial advantage realisable for the service provider in self-lapsing.

Where a service provider has lapsed its Order but continues to make itself available for the FAM, a cap will be placed on any FAM Assignment payment that will limit it to the applicable DASSA Clearing Price.

The scenarios where the above circumstances may occur are described in Section 6.2: Commitment Obligation and Incentive Process below.

38 <https://www.sem-o.com/training/modules/balancing-market-bidding/Physical-Notification.pdf>

6.1.3 Compensation Payment

The TSOs propose that a Compensation Payment may be payable by a service provider to the TSOs in the event that its DASSA Order has fully lapsed or partially lapsed.

Where a Compensation Payment is to be levied, there will be no payment to the service provider for the lapsed (portion of the) DASSA Order.

The levy of a Compensation Payment, and whether a full or partial payment is to apply, or whether a dispensation will be given, will be subject to any mitigating factors in the lapsing of a DASSA Order.

For example, a service provider may have been issued a dispatch instruction pre-Gate Closure and its Order has become incompatible with the dispatched volume and lapses; in this instance, a dispensation will be applicable against the Compensation Payment, subject to considerations as to whether the service provider would have been able to trade out of its position in secondary trading. Similarly, in the case of an energy storage unit, the service provider may have responded to a frequency deviation, depleted its resource, was not able to make itself available to fulfil its DASSA Order and decided to self-lapse its Order.

The scenarios where the Compensation Payment may be levied or waived are described in Section 6.2: Commitment Obligation and Incentive Process below.

The potential means for calculating the value of the Compensation Payment are discussed in Section 6.3: Value of Compensation Payment below.

6.1.4 Grace Period

For energy storage units, the TSOs propose that a Grace Period will apply where a service provider was impacted by a previous dispatch instruction or response to a frequency event that resulted in its asset being depleted to the point that it was not capable of fulfilling its obligation to provide the service for multiple Trading Periods.

In this case, a service provider will not be subject to a Compensation Payment and may receive scaled payments for its DASSA Order depending on the remaining duration of the Grace Period. For example, for the first hour of the Grace Period a service provider may receive a full payment for its DASSA Order; for the last hour of the Grace Period, it may receive a much reduced / no payment. This scaling of payments will be designed to incentivise service providers to trade out their DASSA Orders and associated obligations.

Where a service provider has recharged its resource so that it can provide the service, the Grace Period will no longer apply.

The TSOs propose that the Grace Period will be of a duration of eight hours from the time of the response to the frequency event. This is consistent with the approach currently used for DS3 Fixed Contract service providers.³⁹

6.1.5 Availability Performance Scalar

The TSOs propose that an Availability Performance Scalar will be implemented to incentivise the holder of a Confirmed DASSA Order to maintain and accurately declare its availability to provide a service.

If a Confirmed DASSA Order Holder does not make itself available to provide the service, it may be subject to the application of an Availability Performance Scalar against its DASSA payment, contingent on any mitigating factors as to the reason for its unavailability.

Where a service provider has a partially Confirmed DASSA Order, that portion of the Order will be subject to the Availability Performance Scalar.

Mitigating factors that may have impacted a unit to be unavailable to provide a service would include post-Gate Closure dispatch instructions that move the service provider away from a position compatible with its Confirmed DASSA Order.

³⁹ [ISEM-Volume-Capped-interactions.pdf \(eirgridgroup.com\)](#)

The determination of the values of the Availability Performance Scalar will account for the diverse scenarios by which a service provider may have its DASSA Order confirmed and the level of the Compensation payment to apply in each circumstance.

Considerations relating to the value and the duration of the financial impact of the Availability Performance Scalar in a daily auction environment will be subject to detailed design and an industry consultation. The pathway for the design of performance scalars in the DASSA is described further in Section 6.4: Performance Scalar Design below.

6.1.6 Event Performance Scalar

The TSOs propose that an Event Performance Scalar will be implemented to incentivise the holder of a Confirmed DASSA Order to deliver the service when called upon to do so.

If a Confirmed DASSA Order Holder is available to provide a service but does not deliver it when called upon to do so, it will be subject to Event Performance Scalar consequences.

Where a service provider has a partially Confirmed DASSA Order - and is partially available - that portion of the Order will be subject to the Event Performance Scalar.

The Event Performance Scalar will also be applicable to FAM payments.

The evaluation of whether a service provider's response to a frequency event or dispatch instruction is acceptable will leverage existing performance monitoring methods utilised under the Regulated Tariff Arrangements.

Considerations relating to the value and the duration of the financial impact of the Event Performance Scalar in a daily auction environment will be subject to detailed design and an industry consultation. The pathway for the design of performance scalars in the DASSA is described further in Section 6.4: Performance Scalar Design below.

Question 24. Do you have any comments on the proposed commitment obligation overview?

6.2 Commitment Obligation and Incentive Process

This section sets out the TSOs' proposed method for the consideration of DASSA Order Holders' commitment obligations, when Compensation Payments are applicable, and how performance incentives may be applied.

This process will be executed ex-post. A process flow diagram in Figure 9 is accompanied by explanatory text; additional factors that may need to be addressed are also noted.

The evaluation of a DASSA Order will be principally concerned with the status of the Order at Balancing Market Gate Closure, i.e. one hour before the applicable Trading Period.

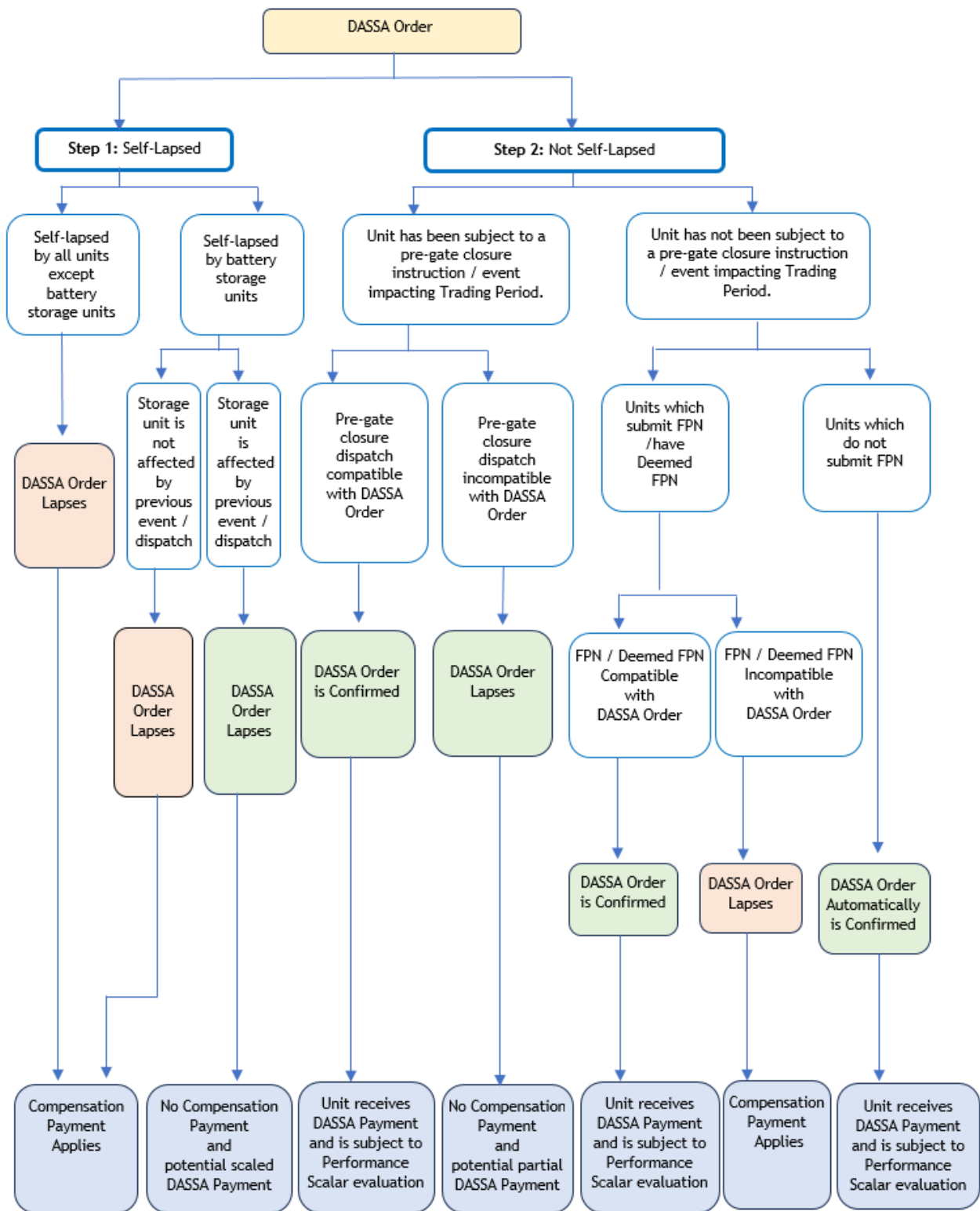


Figure 9 Commitment Obligation and Incentive Process Map

6.2.1 Step 1: DASSA Order Self-Lapsed

The first step in the process will check whether a DASSA Order Holder has chosen to self-lapse its Order by Gate Closure, in full or partially.

If a service provider has chosen to lapse its Order, its commitment obligations will be determined based on whether it is an energy storage unit or another technology type.

6.2.1.1 *Self-lapsed service providers other than energy storage units*

For conventional units, wind and solar farms, demand side units, and interconnectors that choose to self-lapse their Order, the consequences will be as follows:

- No payment for the lapsed proportion of the DASSA Order.
- Proportional Compensation Payment payable to the TSOs.

6.2.1.2 *Self-lapsed energy storage units*

In the case of energy storage units, the process will check whether a service provider was impacted by a pre-Gate Closure dispatch instruction or response to a frequency event that resulted in its asset being depleted to the point that it was not capable of fulfilling its obligation to provide the service.

If the service provider was not impacted by a pre-Gate Closure dispatch instruction or response to a frequency event and has chosen to lapse its Order partially or in full, the consequences will be as for other technology types described above.

Where a service provider has chosen to lapse its Order partially or in full and was impacted by a pre-Gate Closure dispatch instruction or response to a frequency event, the consequences will be as follows:

- Partial payment of the DASSA Order, considering the Grace Period scaling.
- Proportional Compensation Payment payable to the TSOs.

6.2.2 Step 2: DASSA Order Not Self-Lapsed

The next step in the process applies to service providers that have opted not to self-lapse their DASSA Order by Gate Closure.

The initial evaluation in this step will be to check whether a service provider was subject to a pre-Gate Closure dispatch instruction that may have impacted its ability to meet its commitment obligation for the Trading Period.

6.2.2.1 *Unit has been given a pre-Gate Closure dispatch instruction*

Where a service provider was subject to a pre-Gate Closure dispatch instruction - typically a conventional unit being instructed to synchronise to the system, to minimum stable generation or to turn off- the process will evaluate whether its dispatch is compatible with the fulfilment of its DASSA Order.

If the service provider's pre-Gate Closure dispatch is compatible with its DASSA Order, then the DASSA Order becomes a Confirmed DASSA Order.

Where a service provider's pre-Gate Closure dispatch is not compatible with its DASSA Order, the consequences will be as follows:

- DASSA Order partially or fully lapses.
- Partial payment of the DASSA Order, depending on the portion of the DASSA Order that may remain confirmed.
- No Compensation Payment payable to the TSOs.

Where a DASSA Order has lapsed partially or in full due to a service provider's pre-Gate Closure dispatch not being compatible with its DASSA Order, and the service provider obtains additional volume in the secondary trading market - knowing that it would not be in a position to meet its obligation - there would be no dispensation on the compensation payment applicable to the volume acquired in secondary trading.

6.2.2.2 *Unit has not been given a pre-Gate Closure dispatch instruction*

For those service providers that were not subject to a dispatch instruction, the process of determining whether a DASSA Order has been confirmed will consider whether an FPN was submitted.

Where a service provider submits an FPN, or has a deemed FPN, the process will check if its FPN at Gate Closure is compatible with its DASSA Order. If the FPN is fully or partially compatible, then the DASSA Order will be fully or partially confirmed. The incompatible portion of the DASSA Order will lapse and a proportional Compensation Payment will be payable to the TSOs.

For those service providers that do not submit FPNs as a matter of course, or have a deemed FPN, as required by the Trading and Settlement Code, DASSA Orders will be confirmed automatically with the associated commitment obligations to apply.

Question 25. Do you have any comments on the proposed commitment obligation and incentive process?

6.3 Value of Compensation Payment

As described above, the TSOs propose that a Compensation Payment may be payable by a service provider to the TSOs in the event that its DASSA Order has lapsed or partially lapsed. The Compensation Payment forms the first layer of incentives for DASSA Order Holders to commit to the provision of the service set out in the Order.

This section sets out several alternatives for how the Compensation Payment may be calculated. The TSOs do not state a preference for any option at this time. Feedback on these options is invited from stakeholders. The schedule for this workstream will be set out in the next iteration of the PIR, which is expected to be published in Q4 2024.

The TSOs propose that the value of the Compensation Payment should reflect a best estimate of the cost borne by the TSOs in securing a replacement service provider for the service volume in the lapsed order. Potential alternatives to how the Compensation Payment may be calculated include:

- Linking the Compensation Payment to the FAM Clearing Price over a defined period of time.
- Making the Compensation Payment proportional to the imbalance settlement price in the Balancing Market.
- Linking the Compensation Payment to the constrained-on payment rate in the Balancing Market, where the constrained-on payment rate refers to the maximum payment rate associated with resolving constraints and imbalances associated with non-energy actions.
- Linking the value of the Compensation Payment to the System Non-Synchronous Penetration (SNSP)⁴⁰ level. SNSP is a metric defined to measure the real-time MW contribution from non-synchronous generation and net HVDC interconnector imports to demand plus net HVDC interconnector exports. When SNSP is high, the requirement for services will be high.

Question 26. Do you have any comments on the alternatives for the determination of the Compensation Payment?

⁴⁰ <https://www.eirgrid.ie/site-files/library/EirGrid/SNSP-Formula-External-Publication.pdf>

6.4 Performance Scalar Design

As described in the sections above, the TSOs propose that a performance monitoring regime will apply to the DASSA and that it will comprise an Availability Performance Scalar and an Event Performance Scalar.

In this paper we do not propose a finalised design for either performance scalar. Matters relating to the methods for evaluating availability and event performance, calculating the scalar values, and how the financial impact of scalars may persist over time will be subject to separate detailed design, a public consultation, and approval by the Regulatory Authorities. The schedule for this workstream will be set out in the next iteration of the PIR, which is expected to be published in Q4 2024.

For the avoidance of doubt, the TSOs are of the view that the performance scalar methodology that is currently in place for the Regulated Tariff Arrangements is not appropriate for, or transferrable to, the proposed daily auctions.

The TSOs consider that it is crucial that we have the capability to amend the performance monitoring regime periodically as required, subject to the appropriate governance. This will be necessary to reflect changes in policy arising from operational experience and industry feedback, and improvements in performance monitoring techniques and tools. The TSOs envisage that such changes will be managed on an enduring basis through the modification process for the System Services Code once the DASSA has gone live.

7 Final Assignment Mechanism

This section sets out the TSOs' proposals for the DASSA Final Assignment Mechanism (FAM).

7.1 FAM Overview

SEM-22-012⁴¹ states:

“The SEM Committee has decided to proceed on the basis of a daily ex-ante market auction to take place at some point after the closure of the DAM. This will then be followed by an ex-post physical top-up auction, based on the TSOs physical dispatch of the system, to take place if there are insufficient System Service volumes procured through the ex-ante market auction.”

The TSOs propose that a mechanism known as the FAM will meet the requirement for a physical top-up auction.

The FAM will be an ex-post process to allocate payments on a merit basis to some service providers who were available to provide a service during the Auction Timeframe where the service volume needs of the system were not fully met by DASSA Order Holders. This will include service providers that did not hold a DASSA Order, or which had additional capability for service provision above their DASSA Order in real time during the Auction Timeframe.

The FAM is intended to bridge any gap between the outcomes of the daily auction and the actual service volume availability of DASSA Order Holders in real time by incentivising service providers to make themselves available to provide services even if they are not a DASSA winner. This would ensure that reserve volume requirements would continue to be met during the Auction Timeframe.

There may be several reasons for a mismatch between the outcomes of the DASSA and the availability of DASSA Order Holders in real time, including:

- Holders of a Confirmed DASSA Order may be moved away from a compatible position by the TSOs for system reasons.
- Holders of a DASSA Order may not meet their commitment obligation.
- Holders of a DASSA Order may lapse their Order or may have it lapsed by the TSOs.
- Holders of a DASSA Order may not declare themselves available to provide a service, when the observed unavailability is interpreted as service providers' fault.

The proposed FAM design will enable service providers that only know their availability close to real-time, such as wind, solar and demand response units, to be paid for the provision of services where there is a need and where they are in merit. Service providers may submit zero-volume bids and volume-cap bids into the DASSA. Zero-volume bids will not be awarded any volume in the DASSA but would allow for service providers to potentially be assigned volume in the FAM based on the merit order. Volume-cap bids will only be considered in the DASSA up to the volume cap, with any excess above the cap to be allocated in the FAM. The proposals for zero-volume and volume-cap bids are described in Section 4.6.5: Zero-Volume DASSA Bids and Section 4.6.6: Volume-Cap DASSA Bids.

The FAM is proposed to be an ex-post reconciliation mechanism. Any deficit in the availability of DASSA Order Holders will be calculated per Trading Period. Payments for a specified volume and Trading Period(s), in the form of a FAM Assignment, will be paid to service providers on a merit order basis.

The proposed sequence for determining FAM assignments will be as follows for the TSOs:

⁴¹ SEM-22-012, Section 4.3, page 44.

- Determine the FAM volume ex-post to cover any available volume deficit of DASSA Order Holders;
- Create Adjusted Supply Functions for all available service providers, irrespective of whether a DASSA Order is held;
- Determine the merit order of the Adjusted Supply Functions;
- Issue FAM Assignments based on the merit order, confirming the service volume and the price to be paid.

The TSOs' proposals for the calculation of the FAM volume are described in Section 7.2: Calculating the FAM Volume Requirement. Proposals for how FAM Assignments will be made are set out in Section 7.3: FAM Adjusted Supply Functions and Section 7.4: FAM Clearing and Assignments.

It should be noted that service providers will not be allowed to update the offered DASSA volume/prices for the FAM i.e. the bids that have been submitted before the DASSA gate closure remain valid for the FAM. The original bids will be subject to adjustments⁴² to create the Adjusted Supply Functions.

The TSOs propose that any constraints to be met in the DASSA and secondary trading should also be observed in the FAM. In addition, the proposed FAM design may consider other locational constraints, such as transmission line constraints and outages: in this case, units that are subject to line constraints may not be awarded a FAM Assignment for all or a portion of their availability. Section 7.5.2: Constraints and FAM Payments below describes how these constraints might be considered in the FAM process.

7.2 Calculating the FAM Volume Requirement

The FAM is intended to bridge any gap between the outcomes of the daily auction and the actual service volume availability of DASSA Order Holders in real time.

Under this proposal, the FAM volume requirement for each service for each Trading Period would be calculated ex-post. The inputs to the volume calculation may include, but not be limited to:

- The volume of DASSA Orders that do not meet the commitment obligations (as described in Section 6: Commitment Obligations and Incentives) required of the service provider.
- The volume of DASSA Orders that could not be fulfilled due to the holders being moved away from a compatible position by the TSOs for system reasons.
- The volume of any deficit between the expected delivery of a DASSA Order holder and the actual balancing energy delivered in response to a frequency event.
- The volume of Confirmed DASSA Orders not declared available by the order holder, when the observed unavailability is interpreted as service providers' fault.

Where a shortfall is identified ex-post in the total compatibility and availability of DASSA Order holders compared to the DASSA volume requirements, the TSOs will make the FAM payments to selected available service providers in the merit order. This will be done through the creation of Adjusted Supply Functions for all available service providers, irrespective of whether a DASSA Order is held. Adjusted supply functions are described in detail in Section 7.3: FAM Adjusted Supply Functions.

The FAM volume requirement for a service may be met by any available eligible service provider, subject to it being available, capable of providing the service and its price being in the FAM merit order.

⁴² FAM is an ex-post settlement mechanism therefore it is not a procurement process. Based on Article (16.3) EBGL, "Each balancing service provider participating in the procurement process for balancing capacity shall submit and have the right to update its balancing capacity bids before the gate closure time of the procurement process".

TSOs' Proposal:

The FAM volume requirement to be calculated ex-post based on the difference between the DASSA volume requirement and actual total compatibility and availability of DASSA Order holders in real time.

The FAM volume requirement for a service to be met by any available eligible service provider, subject to it being capable of providing the service and its price being in the merit order.

Question 27. Do you have any comments on the proposal for determining the FAM volume requirement?

7.3 FAM Adjusted Supply Functions

In the DASSA, as described in Section 4.6: DASSA Bidding Structure, a supply function is created that consists of the price/quantity pairs offered by a service provider into the daily auction of a service; the supply functions are an input to the DASSA clearing process.

For the FAM, the TSOs propose to establish Adjusted Supply Functions for all available registered service providers, irrespective of whether a service provider holds a DASSA Order for a particular service in a particular Trading Period. Adjusted Supply functions would establish the available volume and price of a service provider per eligible service per Trading Period for the FAM. The Adjusted Supply Functions would then be cleared through the FAM on a merit order basis i.e. based on price.

To establish the Adjusted Supply Functions for service providers for the FAM, the TSOs may consider a number of inputs which may include, but not be limited to, the following:

- Submitted bids before the DASSA gate closure;
- The outcome of secondary trades;
- Confirmed DASSA orders;
- Declared availability of the service providers;
- Eventual availability of the service providers;
- The calculation of default prices.

The following sections describe how the volume and price of Adjusted Supply Functions are proposed to be determined.

7.3.1 Adjusted Supply Function Volume

The volume of a FAM Adjusted Supply Function would be based on the eventual availability of a service provider, which would be calculated ex-post.

The calculation of eventual availability may include, but not be limited to:

- Service availability declarations;
- Meter data;
- Responses to frequency events i.e. if a service provider declared itself available but failed to respond to an event as required, it would not be considered available.
- Constraints limiting the actual delivery of the services as represented in Section 7.5.2: Constraints and FAM Payments below.

For Confirmed DASSA Order holders, only the difference between the service provider’s eventual availability and the volume of its order would be considered for the FAM (and be eligible for inclusion in a FAM Assignment). This is illustrated in Figure 10 below.

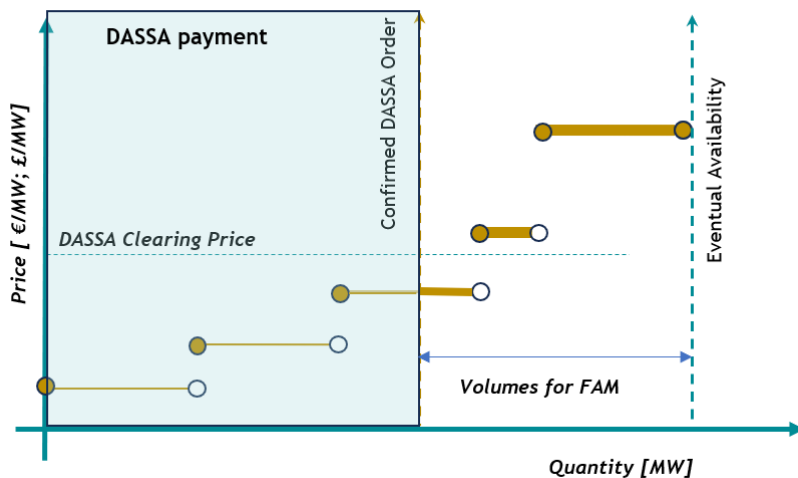


Figure 10 Adjusted Supply Function Volume for Confirmed DASSA Order Holder

For service providers that do not hold a Confirmed DASSA Order, their entire eventual availability may be considered in the FAM.

7.3.2 Adjusted Supply Function Prices

This section describes how prices would be set for the Adjusted Supply Functions. The setting of prices will differ depending on the scenario. Scenarios are listed below.

Note, the volume associated with any Confirmed DASSA Orders has not been illustrated in the following diagrams. However, to reiterate, in the case of Confirmed DASSA Order holders, FAM Assignments will only be applicable to the difference between the service provider’s eventual availability and the volume of its DASSA order.

7.3.2.1 DASSA Order Holder - Extension of the DASSA Supply Function to Eventual Availability in FAM

If the eventual availability of a service provider is higher than its maximum offered volume in the daily auction, the last offered step in its DASSA Supply Function will be extended to the eventual availability volume at the same price. This is illustrated in Figure 11 - see the gold dashed line.

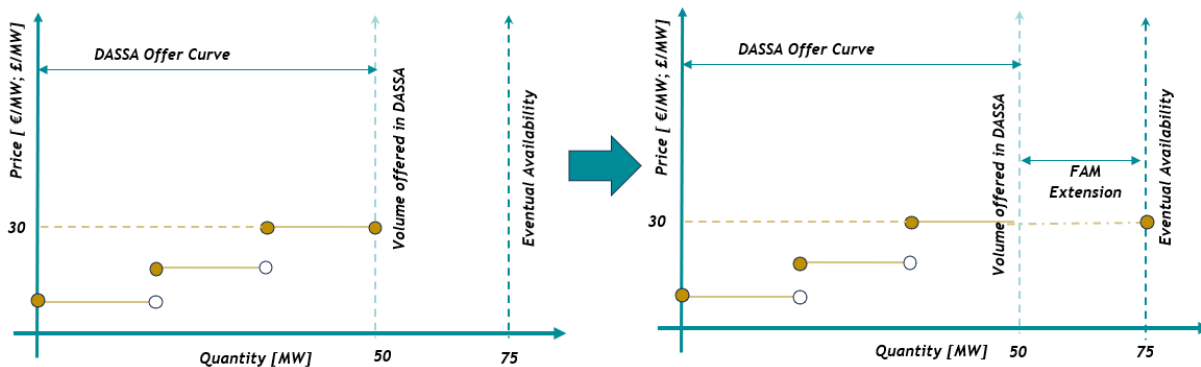


Figure 11 Extension of the DASSA Supply Function for FAM

As illustrated on the left-hand-side of Figure 11, if the final (price, quantity) pair that has been offered in the DASSA by a service provider for a certain system service in a Trading Period is €30 per MW up to 50 MW, and the eventual availability of that service provider is 75 MW, to create the Adjusted Supply Function in the FAM, the final step will be extended to span from €30 per MW up to 75 MW.

7.3.2.2 DASSA Order Holder - Crop of DASSA Supply Function to Eventual Availability in FAM

If the eventual availability of a service provider is lower than its maximum offered volume in the daily auction, the FAM volume will be limited to its eventual availability. This is illustrated in Figure 12 below.

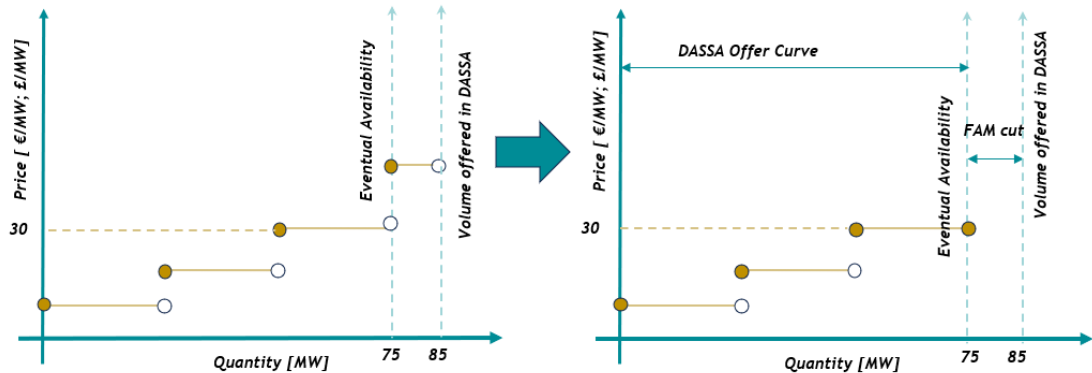


Figure 12 Crop of DASSA Supply Function to Eventual Availability in FAM

As illustrated on the left-hand-side of Figure 12, if the maximum volume that has been offered in the DASSA by a service provider for a certain system service in a Trading Period is 85 MW, but the eventual availability of that service provider is 75 MW, to create the Adjusted Supply Function in the FAM, the volume associated with this step will be reduced to 75 MW.

7.3.2.3 No Bid in DASSA - Default Price Applied in FAM

If an available service provider did not submit any bid in the DASSA for the service and Trading Period(s) in question, the default price will be applicable to its Adjusted Supply Function. Please see Section 7.5.1: FAM Default Price below for further information on FAM default prices.

7.3.2.4 Zero Volume Bid in DASSA

If a service provider submitted a zero-volume bid in the daily auction, the price of the zero-volume bid will apply to its volume in the Adjusted Supply Function.

7.3.2.5 Volume Cap Bid

If a service provider submitted a volume-cap bid in the daily auction, the price applicable to the volume in the Adjusted Supply Function will be that above the volume cap. As illustrated in Figure 13, if a service provider has set a volume cap equal to 100 MW in the DASSA for a certain system service in a Trading Period, this will limit the DASSA offered volume to 100 MW.

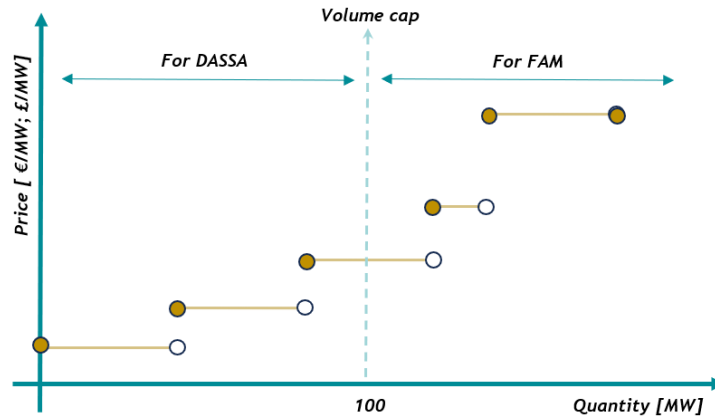


Figure 13 Volume Cap DASSA Bid Curve

7.3.2.6 Secondary Trading Considerations in the FAM

The impact of secondary trades also needs to be addressed when determining the prices of an Adjusted Supply Function in the FAM.

Where a service provider has purchased additional volumes in secondary or bilateral trading, the TSOs have considered two options:

- Allow the DASSA clearing price to determine the price in the Adjusted Supply Function.
- Do not allow the DASSA clearing price to determine the price in the Adjusted Supply Function.

These options are illustrated in Figure 14 below. The first option may create a non-increasing Adjusted Supply Function that will complicate the FAM clearing. Therefore, the TSOs propose that the second option is the preferred method.

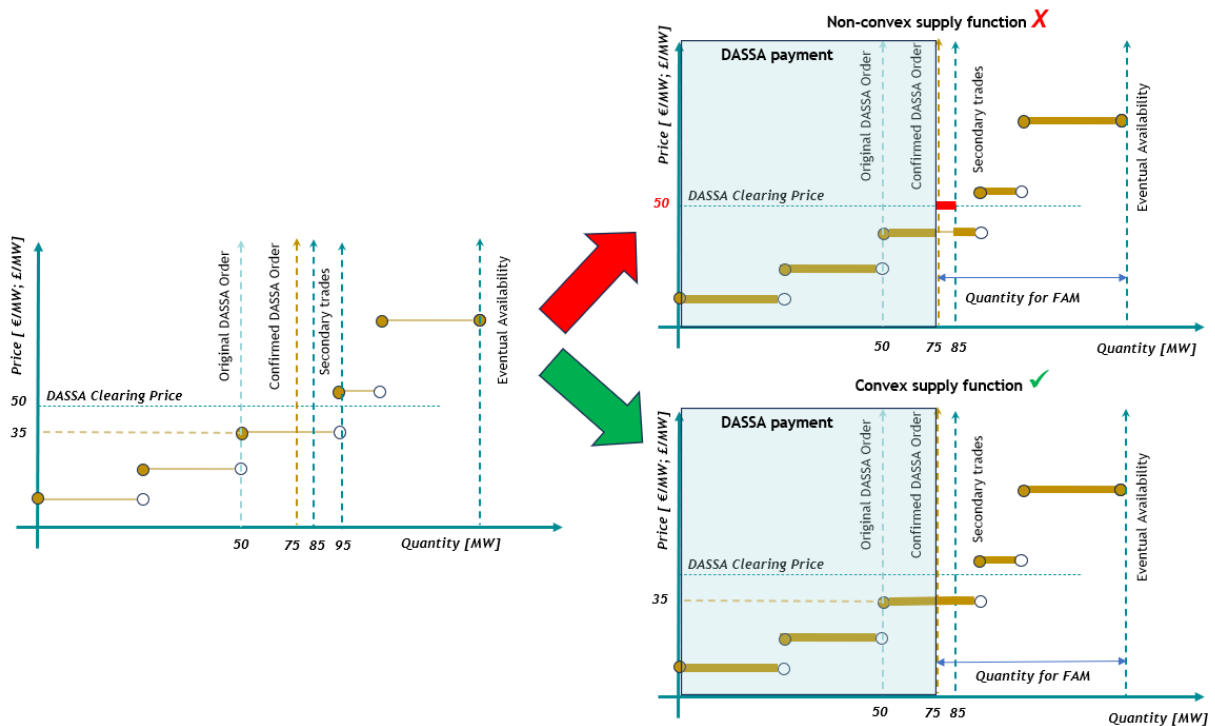


Figure 14 DASSA Clearing Price - Secondary Trades - FAM Adjusted Supply Functions

By way of clarification, with reference to Figure 14:

- As illustrated on the left-hand-side of the Figure 14, a service provider had been awarded 50 MW of a certain service in the DASSA.
- Subsequently in Secondary Trading, the service provider has purchased 35 MW in addition to its own awarded DASSA volume, bringing its commitment obligation to 85 MW.
- At DASSA gate closure, the service provider has submitted an FPN that is compatible with a service provision of 75 MW only, so the Confirmed DASSA Order volume is limited to 75 MW.
- As illustrated on the top right-hand-side of Figure 14, if the TSOs apply the DASSA clearing price (i.e. €50 per MW) to the volume between 75 MW and 85 MW, the resulting Adjusted Supply Function will become non-increasing, which is not permitted (please see the red line). This is because the remaining part of that step (i.e. from 85 MW to 95 MW) has been offered at €35 per MW in the DASSA.
- Instead, the TSOs propose to apply the DASSA offered price (i.e. €35 per MW) to the volume between 75 MW and 95 MW, which results in an increasing Adjusted Supply Function as illustrated on the bottom right-hand-side of Figure 14.

Finally, at the settlement stage, Adjusted Supply Functions will be stacked together to create a supply function per service per trading period for all service providers. The merit order for FAM payments will be based on this FAM Supply Function.

TSOs' Proposal:

Adjusted Supply Functions will be established by the TSOs based on the available data to be considered for FAM payments.

Question 28. Do you have any comments on the proposed methods for establishing the Adjusted Supply Functions for FAM payments?

7.4 FAM Clearing and Assignments

After calculating the FAM volume requirements, the FAM would be cleared per trading period per service using the FAM Adjusted Supply Function and a FAM clearing price would be determined (which would be applicable to all service providers) based on the merit order.

FAM may be cleared subject to the constraints discussed in Section 7.5.2: Constraints and FAM Payments below.

Any service providers that have Adjusted Supply Function volumes with prices lower than the FAM clearing price would be paid the FAM clearing price.

The FAM clearing price may be higher or lower than the DASSA clearing price.

For the avoidance of doubt, under this proposal an eligible service provider that actually delivered a service in response to a frequency event would not be in receipt of a FAM Assignment if its price was not in the merit order.

TSOs' Proposal:

Service providers in receipt of a FAM Assignment to be paid the FAM clearing price.

Question 29. Do you have any comments on the FAM clearing and FAM Assignments?

7.5 Further Design FAM Design Considerations

7.5.1 FAM Default Price

When establishing the Adjusted Supply Functions for service providers that did not submit a bid into the daily auction (a DASSA Supply Function), a FAM Default Price would need to be determined.

The Default Price would be a predetermined price. Its value would be based on the following considerations:

- 1) It should not undermine incentives for service providers to participate in the DASSA and the FAM process;
- 2) It should not undermine the economic efficiency of the procurement process.

The value of the default price will be subject to the outcome of future studies and engagement with industry stakeholders.

TSOs' Proposal:

A FAM default price to be determined and be applicable to service providers that did not submit a bid into the daily auction.

Question 30. Do you have any comments on the considerations for determining the default price?

7.5.2 Constraints and FAM Payments

The TSOs propose that any constraints met in the DASSA and secondary trading should also be observed in the FAM.

In addition, the proposed FAM design may consider other locational constraints, including but not limited to:

- Transmission / distribution line outages;
- Transmission / distribution line constraints.

Inclusion of these constraints will ensure that FAM payments are made to service providers that can physically deliver the intended services.

Further detail on the locational considerations for the FAM are set out Section 8: Locational Considerations. In particular, meeting locational constraints will be informed by the design and implementation of Firm Access for system services, as directed by the SEM Committee in SEM-22-012.

TSOs' Proposal:

DASSA and Secondary Trading constraints to be met in the FAM.

Additional locational constraints for the FAM to be considered in light of Firm Access for system services.

Question 31. Do you have any comments on constraints in the FAM?

7.6 Service Availability Requirement

Under this proposal, a service provider will be obliged to declare its availability to provide a service to the TSOs if it is technically capable of doing so, irrespective of whether it holds a DASSA Order for the service volume. This means that:

- A service provider holding a DASSA Order must declare its total availability to provide a service, even if its total availability is in excess of the service volume specified in the Order;
- A service provider that does not hold a DASSA Order, either because it did not participate or was not successful in the daily auction or secondary trading, must declare its total availability to provide a service.

The TSOs propose that this requirement will be stipulated in the System Services Code.

As the DASSA will be a partially constrained auction, all system constraints will not be accounted for in the auction. Post DASSA contingencies impacting service provider capability and/or transmission system availability can also arise that change service requirements. Ensuring that sufficient service capability is available to the TSOs within the scheduling and dispatch process will be crucial for maintaining system security. In addition, reflecting the technical performance characteristics of service providers in their service availability declaration is important for the TSOs' real-time modelling of the behaviour of the power system.

The TSOs propose that new forecast availability signals, enabling service providers to give indicative service availability for longer periods, will be implemented to support this requirement.

TSOs' Proposal:

Service providers to be obliged to declare their availability to provide a service to the TSOs if they are technically capable of doing so, irrespective of whether they hold a DASSA Order for the service volume.

Question 32. Do you have any comments on the obligation for service providers to declare availability irrespective of whether they hold a DASSA Order for the service volume?

8 Locational Considerations

This section summarises the TSOs’ proposals for how the DASSA would meet locational constraints and addresses the requirement to implement firm access for system services.

8.1 Locational Constraints in the DASSA

In our proposals, the TSOs have sought to differentiate between different types of locational constraints and how they are to be met in the DASSA arrangements.

Long-run reserve constraints, i.e. those enduring constraints that are required to ensure operational system security such as minimum service volumes on an all-island basis or per zone, will be modelled in the DASSA clearing optimisation problem. These constraints will also be met in secondary trading and the FAM.

The TSOs do not propose to model any temporary local constraints, such as transmission line limits and outages, in the DASSA clearing optimisation problem. Such constraints may be the outcome of a TSO action to address system security or network issues; the TSOs propose that such constraints may be met in the FAM, ensuring that FAM payments are only made to service providers that can physically deliver the service if called upon. This proposal will be informed by the design and implementation of Firm Access for system services, which is discussed further in Section 8.2: System Services Firm Access below. The TSOs consider that accounting for temporary local constraints in the FAM will be a complex undertaking.

Table 6 below summarises the TSOs’ proposals regarding the application of constraints. Detailed worked examples explaining how the relevant constraints are applied are included in Appendix 1.

Table 6 Applicability of Long-run & Short-run constraints to DASSA, Secondary Trading, and FAM

Constraint	Example	Long-run	Imposed in the DASSA	Imposed in Secondary Trading	Imposed in the FAM
Jurisdictional / zonal minima	Minimum service provision for IE/ NI	✓	✓	✓	✓
Quality/implicit bundle minima (jurisdictional/zonal)	Minimum dynamic service provision for IE/NI	✓	✓	✓	✓
Transmission line restrictions (to be considered as maxima for unit/s or zone/s)	Maximum service provision for a unit due to line congestion	×	×	×	✓

The proposed design of the DASSA is compatible with the procurement of non-reserve system services with a strong locational requirement, for example reactive power. Zones could be defined with minimum service volumes set per zone.

8.2 System Services Firm Access

In the SEM-22-012⁴³, the SEM Committee decided that the concept of Firm Access should be implemented for system services, as follows:

“Transmission connected System Services providers will be granted Firm Access to System Services markets once structural issues related to their connection have been resolved to the satisfaction of the TSOs and the SEM Committee.

Once granted Firm Access, transmission connected providers will be able to bid into a System Services auction and be paid, even if they are constrained out of a position to be able to provide the service by transitory constraints.

Where markets are zonal/locational, Firm Access will be to zone/location only.

Firm Access to System Services markets may be on a product-by-product basis, hence it may (for instance) be possible for a provider to be granted Firm Access to a reactive market, before it is granted Firm Access to reserve markets.

Firm Access to System Services markets will be decoupled from Firm Access to the energy market, so in principle, it will be possible to have Firm Access to one or all System Services markets by non-Firm Access to the energy market, or vice-versa.

Market access for distribution connected providers will be determined through the operational envelope to be agreed by the TSOs and DSO/DNO.”

From engagement with the Regulatory Authorities, the TSOs understand that it is the intention of the SEM Committee that available service providers which would not be able to physically deliver services if they were called upon to do should not be paid.

The TSOs do not propose a design for Firm Access for system services at this time; this will be the subject of a separate design and industry consultation process. The schedule for this workstream will be set out in the next iteration of the PIR, which is expected to be published in late 2024. The TSOs may leverage, where appropriate, similar processes and methodologies that are utilised in the SEM. The TSOs will also ensure that any proposal aligns with a plan-led approach for the deployment of service providers and provides appropriate locational incentives.

Question 33. Do you have any comments on the TSOs' approach to the inclusion of distinct locational constraints into the DASSA arrangements and on the requirement to implement Firm Access for system services?

⁴³ SEM-22-012, Section 5.5, page 57.

9 Registration and Qualification

This section sets out the TSOs' proposals for the registration and qualification of service providers for the DASSA arrangements. While the exact process is to be defined, it is envisaged that it will comprise of several elements including:

- Establishment of a System Services Register, which will detail service providers' eligibility and capability to participate in the daily auctions;
- Registration of service providers and accession to the System Services Code;
- Submission of organisation / company data including financial standing and other necessary qualifying data by service providers ; and
- Participation of service providers in the qualification process to establish their capabilities to provide services in the DASSA.

This section also addresses the transfer of service providers' existing capability data under the Regulated Tariff arrangements to the DASSA arrangements and provides an update on the Qualification Trial Process (QTP).

It is proposed that the System Services Code will describe the registration and qualification requirements for service providers in detail.

9.1 Registration

Service providers wishing to participate in the DASSA arrangements will be required to register with the TSOs. Provided that a service provider's registration is successful, they will be included in the System Services Register.

The completion of the qualification process will determine a service provider's capabilities to provide one or more services and eligibility for participation in the auctions. The qualification process is set out in Section 9.2: Qualification below.

The System Services Register will regulate how service providers may participate in the DASSA arrangements, including secondary trading. It will define the volume and quality/type of services they may bid for and establish their maximum service capabilities.

It is envisaged that registration will comprise of several stages:

- **Accession to the System Services Code:** Registration for the DASSA arrangements will be dependent on a service provider acceding to the System Services Code. A service provider will not be included in the System Services Register if it has not formally agreed to the terms set out in the Code.
- **Registration of company / organisation details:** Service providers will be required to submit data relating to their project and organisation, which may include, but not be limited to, declarations as to its financial, health and safety, employment, and environmental status (analogous to what is required from tenderers under the existing Regulated Tariff arrangements procurement process). Successful unit registration will be subject to evaluation of the submitted data by the TSOs based on a set of defined and transparent criteria.
- **Registration of service providers' technical capabilities:** Service providers will be required to participate in the qualification process, described in more detail in Section 9.2: Qualification below. The qualification process will determine a service provider's capability to provide one or more services and will determine the quality levels and maximum quantity by service providers of services they can provide, where applicable. The outcome(s) of the qualification process will be recorded in the System Services Register and will determine a service provider's eligibility to bid for one or more services.

The registration process will be conducted on a rolling basis i.e., service providers may apply to register for the DASSA arrangements at any time. To be clear, the existing procurement process that applies to the Regulated Tariff arrangements will not be applicable to the DASSA arrangements. It is intended that the registration process will apply to all services to be procured in the future under the DASSA arrangements.

The timescales for processing an application are noted in SEM-22-012⁴⁴ which states,

- “[the] TSOs have 8 weeks from the receipt of an application to confirm whether that application is complete, with the applicant having 4 weeks to provide the missing information. This 4- week period starts from the point at which the applicant is notified of their information deficiencies;
- Once the TSO’s have decided an application is complete, they are then allowed to take up to three months to decide whether the providers qualify for the provision of FCR.”

The TSOs will decide whether an application contains all necessary information and is therefore complete. The timescales for the completion of the registration process, including qualification, for new applicants to the DASSA arrangements will be 90 days from confirmation that the application is complete. This is compliant with the prequalification timelines set out in Articles 155, 159 and 162 of the SOGL which states, for example in the case of frequency containment reserves (FCR), the following:

“Within 3 months from confirmation that the application is complete, the reserve connecting TSO shall evaluate the information provided and decide whether the potential FCR providing units or FCR providing groups meet the criteria for an FCR prequalification. The reserve connecting TSO shall notify its decision to the potential FCR provider.”

TSOs’ Proposal:

Service providers to register with the TSOs in order to participate in the DASSA arrangements. Registration to be open on a rolling basis. The TSOs to complete the registration process, including qualification, within 90 days of receipt of a completed application.

The System Services Register to regulate eligibility for participation in the DASSA arrangements.

Question 34. Do you have any comments on the proposals for registration in the DASSA arrangements?

9.2 Qualification

The qualification process will determine a service provider’s capabilities to provide one or more services together with the quality levels and maximum quantity of service a unit can provide, where applicable.

The TSOs propose that the DASSA qualification process will leverage the established system services testing regime. The testing processes and requirements for all technology types are described in detail on the EirGrid⁴⁵ and SONI⁴⁶ websites. The testing regime may be refined and adapted in the future to account for the outcomes of product reviews and associated consultations to be conducted by the TSOs, for example changes to service definitions or the introduction of new services.

The outcome of a successful qualification process is an approved System Services test report. Selected data contained in the approved test report, including maximum service volume and type of capability, will be captured in the System Services Register. These parameters will determine a service provider’s eligibility to bid for services.

⁴⁴ SEM-22-012, Section 3.2.2, page 18.

⁴⁵ [EirGrid System Services Testing \(eirgrid.ie\)](https://eirgrid.ie)

⁴⁶ [SONI System Services Testing \(soni.ltd.uk\)](https://soni.ltd.uk)

Note that the distribution system operators will continue to approve the maximum service capability that a distribution connected unit can provide. Further information on TSO/DSO interactions as part of the SSFA project are included in Section 2.4: TSO/DSO Coordination.

TSOs' Proposal:

The qualification process to leverage the established system services testing regime and to adapt as required to new or amended services.

Question 35. Do you have any comments on the proposals for qualification in the DASSA arrangements?

9.3 Transfer of Regulated Tariff Arrangements Details and Capabilities

The TSOs will consider how the organisational data and service capabilities of existing service providers contracted under the Regulated Tariff arrangements, or applicable transitional arrangements, may be transferred to the DASSA System Services Register.

The TSOs will endeavour to limit the requirement for retesting as part of the qualification process where possible, although, in the case of new or amended services being required as part of the product review, completion of the qualification process may be required.

9.4 Qualification Trial Process

The Qualification Trial Process (QTP) is a periodic process carried out to determine the ability of new technologies to provide System Services; it has also been used to trial communications protocols and performance monitoring improvements. This process is the responsibility of the TSOs.

As set out in the SEM-22-012⁴⁷, the TSOs were required to establish a more formalised process for the QTP to ensure the transparency of the process for the enduring arrangements. The TSOs are required to publish a call for evidence at least every 12 months to allow for stakeholders to input into the design of the trial; following this, the TSOs may publicly consult on a QTP proposal.

The most recent call for evidence was published by the TSOs on eTenders on 15th December 2023 and closed on 26th January 2024.

⁴⁷ SEM-22-012, Section 3.3, page 20-21.

10 Settlement

This section sets out the TSOs' proposal for the settlement period of the DASSA arrangements, together with information on the payments to be made.

This section sets out the TSOs' proposal for the settlement period of the DASSA arrangements, together with information on the payments to be made.

10.1 Settlement Period

The TSOs propose that the settlement of the DASSA will take place monthly in arrears e.g. the settlement process for the month of January will commence in February. Payments to service providers will be made within a timeframe that allows for the settlement process to complete e.g. 20 business days after the process has commenced.

Running the settlement one month in arrears will allow for multiple required inputs to be collated and validated, including data associated with service providers' availability declarations, FPNs, metered and dispatched megawatt (MW) quantities, and performance scalar values, as required.

It is the TSOs' experience that monthly settlement tends to result in less resettlement than other market arrangements.

A monthly settlement process for the DASSA aligns with the existing settlement of system services under the Regulated Tariff and Fixed Contract arrangements. It is also intended that the settlement of the Low Carbon Inertia Services (LCIS) arrangements will be completed monthly in arrears.

Subject to feasibility, an indicative settlement notice may be provided weekly, with actual settlement running monthly in arrears.

TSOs' Proposal:

Settlement for the DASSA arrangements to take place monthly in arrears.

Subject to feasibility, an indicative settlement notice to be provided weekly.

Question 36. Do you have any comments on the proposals for the DASSA settlement period?

10.2 Payments

The settlement of the DASSA arrangements will result in payments to service providers with Confirmed DASSA Orders and FAM Assignments, accounting also for compensation payments that are due to the TSOs.

As stated in Section 5.5: Commitment Obligation and Right to Payment, the Secondary Trading Payment agreed between service providers for the trading of DASSA Orders will be made bilaterally and is not in scope for the DASSA settlement process.

10.2.1 Confirmed DASSA Orders

Confirmed DASSA Order Holders will receive the DASSA clearing price applied to the volume associated with a Confirmed DASSA Order, subject to any performance scalars. This can be summarised as follows:

Confirmed DASSA Order Volume x DASSA Clearing Price x Performance Scalar Value(s)

This means that service providers will receive the DASSA clearing price for the portion of the DASSA Order that is confirmed, and the clearing price will be multiplied by the value of applicable availability or event performance scalars. Any portion of the DASSA Order that is not confirmed will be subject to a compensation payment to the TSOs. These proposals are described in detail in Section 6: Commitment Obligations and Incentives.

10.2.2 Compensation Payments

If a DASSA Order Holder fails to meet its obligations to be compatible with all or some of its DASSA Order, the service provider will be subject to a compensation payment to be made to the TSOs. This payment will be proportional to the volume of the DASSA Order that is not confirmed.

10.2.3 FAM Assignments

As described in Section 7: Final Assignment Mechanism, the FAM will be an ex-post process to allocate payments on a merit basis to some service providers who were available to provide a service during the Auction Timeframe, where the service volume requirements were not fully met by DASSA Order Holders. Holders of FAM Assignments will be paid the FAM clearing price, which may be higher or lower than the DASSA clearing price, and this payment will be subject to the value of the event performance scalar.

10.2.4 Payments Under Volume Insufficiency

Section 4.8: Volume Insufficiency sets out proposed measures that may be activated in the event of volume insufficiency in the daily auction due to capacity withholding.

One such measure, where the DASSA has run, is to meet the volume deficit in secondary trading at the DASSA clearing price. All Confirmed DASSA Order Holders in this scenario will receive the DASSA clearing price per unit of the quantity associated with a Confirmed DASSA Order, subject to any applicable performance scalars.

The other proposed measure, where the market has been suspended and has not run, is to meet the full volume requirement in the FAM at the default price. In this scenario, service providers with FAM Assignments will receive the FAM default price.

In the event that the DASSA has not been run due to a technical difficulty, rather than due to capacity withholding or tight system conditions, the entire volume requirement may be met in the FAM at the FAM clearing price.

11 Forwards Markets

This section sets out the basis for considering forwards markets as a component of the SSFA. Forwards markets can be designed in different ways, but the benefit that they may bring in the context of the SSFA is in terms of providing long-term investment signals for service provision by allowing for the hedging of the price in the DASSA ahead of time.

The HLD⁴⁸ outlines the relevant elements that make up the framework for the competitive procurement of system services, which include:

- The daily auction, which is the subject of this consultation.
- A Layered Procurement Framework for contracts greater than one day and up to 12 months.
- The already established Fixed Contract Framework.

In addition, the SEM-22-012 states:

“The detailed design will also consider TSO proposals for a forward contracting approach.”⁴⁹

The SEM Committee reiterated its position on forwards markets in SEM-22-103, inviting the TSOs to consider forwards markets as part of the detailed market design for the procurement of system services.⁵⁰

During our bilateral engagements with industry stakeholders, concerns were expressed as to how the daily auction arrangements would provide effective long-term investment signals for system service provision.

Subject to detailed design, forwards markets may allow service providers to hedge the price in the DASSA. This would improve the predictability of future revenue streams for service providers and incentivise more possibilities for the provision of system services. By linking forwards markets to the DASSA, they may also contribute to the cost-effective procurement of system services in the long run as these would not lock in fixed prices for provision when competitive prices in the DASSA may otherwise have fallen.

The relevant risks and limitations of forwards markets would need to be factored into any design proposals. Forwards markets should not undermine the primacy of the daily auction in the procurement of applicable system services. In addition, a lack of competition and liquidity can be a barrier to an efficient forwards market which may limit the participation of all technologies.

The TSOs invite feedback on the need for a forwards market, which would be in addition to the commercial arrangements for the procurement of system services set out in the HLD. Any forwards market arrangements would be subject to industry consultation and approval by the Regulatory Authorities. The implementation of any forwards markets or long-term contract design is a separate deliverable to the DASSA, the schedule for which is captured in the PIR.

Question 37. Do you have any comments on considerations for the introduction of forwards markets in the SSFA?

⁴⁸ SEM-22-012, Section 1.1, page 2.

⁴⁹ SEM-22-012, Section 6.6, page 69.

⁵⁰ SEM-23-103, Section 4, page 23.

12 Migration to the DASSA Arrangements

In this section, considerations are set out for how the TSOs would facilitate the transition of the procurement of system services to the daily auctions from the commercial arrangements in place at the time of the launch of the DASSA.

The TSOs recognise that the migration to the DASSA arrangements will be a significant undertaking for service providers. There will be a detailed market trial, training, and further engagement with industry before go-live to support the migration to the daily auction arrangements. These measures are part of the Readiness workstream as set out in the PIR (see Section 1.4: Phased Implementation Roadmap). Section 3.2: Services in Scope for Initial Implementation sets out the scope for the initial implementation of the DASSA.

This section discusses the options for migrating the procurement of system service volumes to the daily auctions in addition to other considerations relevant to the migration to the DASSA which include but may not be limited to the FAM default price, the compensation payment, registration and qualification information, system services charges and value functions for operational preferences.

For the avoidance of doubt, this section is not concerned with the nature of the commercial arrangements that will be put in place for the interim period between the termination of the Regulated Tariff Arrangements in April 2026 and the implementation of the daily auctions, scheduled for December 2026. Those interim procurement arrangements will be the subject of a separate workstream, with reference to the directions provided by the SEM Committee in SEM-23-103. Please refer to Section 1.4: Phased Implementation Roadmap for further information.

12.1 DASSA Volumes and Frequency

The options for migrating the procurement of service volumes to the daily auctions include:

- Option 1: Procuring full required volume in the DASSA from go-live of the daily auctions.
- Option 2: Procuring only a portion of the total system service required volume in the DASSA, with the remainder to be acquired in the FAM at the default price; the volumes being procured in the DASSA would gradually increase up to the total service volume requirement.
- Option 3: Running the auctions at a frequency less than daily initially with commitment obligations to apply for longer Auction Timeframes.

Option 1 may be the preferred one, subject to adequate planning to mitigate the risk of not procuring sufficient service volumes. Procuring only a portion of the total system service volume in the DASSA, as proposed in Option 2, may result in artificially low clearing prices initially. In their paper⁵¹, DotEcon/ Afry consider Option 3 is a poor means of phasing into the DASSA. Running the auctions at a frequency less than daily initially would pose challenges for certain service providers to sustain their DASSA commitment over the period between auctions. Not all technology types would be able to participate on a level playing field and this could lead to reduced competition in the DASSA and higher prices. Running the auctions at a lower frequency would also not be consistent with the EBGL and Article (6.9) of the CEP.

12.2 FAM Default Price

The value of the default price within the FAM may be used during the migration into the DASSA to incentivise participation in the auction.

⁵¹ DotEcon/Afry Recommendations Paper September 2023, Section 8, page 68.

12.3 Compensation Payment

Subject to other considerations as set out in Section 6: Commitment Obligations and Obligations, the value of the compensation payment could be set to a relatively small value initially, with this increasing over time. This would allow for service providers to gain familiarity with the auction process and secondary trading and to adapt to the risks associated with compensation payments.

12.4 Registration and Qualification

As discussed in Section 9.3: Transfer of Regulated Tariff Arrangements Details and Capabilities, the TSOs will consider how the organisational data and service capabilities of existing service providers contracted under the Regulated Tariff arrangements, or applicable transitional arrangements prior to DASSA go-live, may be transferred to the DASSA System Services Register.

The TSOs will endeavour to limit the requirement for retesting as part of the qualification process where possible, although, in the case of new or amended services being required as part of the product review, completion of the qualification process may be required.

12.5 System Services Charges

As set out on SEM-22-012⁵² the TSOs shall introduce a new set of system services charge to recover the costs associated with the procurement of system services from suppliers. Initially, system services charges will be set on an annual basis, and the granularity of this may be increased over time.

Question 38. Do you have any comments on the considerations for the migration to the DASSA Arrangements?

⁵² SEM-22-012, Page 3, section 1.1

13 DASSA Interactions with Energy Markets

In our engagements with industry on the design of the DASSA, the TSOs received feedback that greater clarity was needed as to how the daily auction for system services will interact with other electricity market arrangements i.e. ex-ante markets, the balancing market, the capacity market, and relevant European electricity markets.

The TSOs acknowledge the importance of this issue and wish to provide clarity for service providers in this regard.

13.1 Interaction with the Single Electricity Market (SEM)

The proposed design of the DASSA, as described in this consultation paper, does not incorporate any changes to the wholesale electricity market in Ireland and Northern Ireland.

However, the daily auction has been designed to account for the mechanics of the SEM. For example:

- The proposed timing of the DASSA, as described in Section 4.2: Timing of the DASSA, takes place after the Day-Ahead Market (DAM), allowing service providers to consider their ex-ante market position when bidding into the DASSA.
- In Section 6: Commitment Obligations and Incentives, where service providers submit PNs the proposed design incorporates an evaluation of the compatibility of a service provider's FPN with its DASSA Order. Where service providers do not actively participate in the SEM, or submit FPNs, alternatives are proposed.
- Service providers' positions at balancing market gate closure are also utilised in our assessment of whether commitment obligations are being met.

The TSOs consider that it is up to a service provider to manage the risk associated with participating in the DASSA and other markets.

The TSOs welcome further feedback from industry on this topic.

Question 39. Do you have any comments on the interaction of the DASSA with the SEM?

13.2 Interaction with the Capacity Market

The proposed design of the DASSA, as described in this consultation paper, does not alter existing Capacity Market obligations for a service provider that has also been contracted to provide system services.

13.3 Interaction with European Markets

Since the exit of the United Kingdom from the European Union, the all-island electricity market is not currently integrated with European energy markets. This will change in 2026 following the completion of the Celtic interconnector linking the island of Ireland with mainland Europe.

Regarding the exchange of balancing capacity, Article 33 and Article 38 of the EGBL⁵³ allow for the exchange of balancing capacity between TSOs. The exchange of balancing energy across the European Union is facilitated by the PICASSO, MARI and TERRE platforms for the automatic Frequency Restoration Reserve (aFRR), manual Frequency Restoration Reserve (mFRR) and Replacement Reserves (RR) services respectively.

The proposed design of the DASSA is intended to be compatible with the exchange of balancing capacity and balancing energy in Europe. As noted in Section 3: Consultation Scope, existing system services may be redefined to align with the SOGL definitions, subject to the outcome of a product review that the TSOs will undertake in 2024.

The TSOs welcome further feedback from industry on this topic.

Question 40. Do you have any comments on the interaction of the DASSA with European markets following the completion of the Celtic interconnector?

⁵³ EGBL, Article 33, Article 38.

Glossary

Acronym	Meaning
BCOP	Bidding Code of Practice
BM	Balancing Market
CEP	Clean Energy Package
CP	Clearing Price
CRU	Commission for Regulation of Utilities
D	Delivery Day
D-1	Day Ahead
DAM	Day Ahead Market
DASSA	Daily Auction System Services Arrangements
DS3	Delivering a Secure Sustainable Electricity System
DSO	Distribution System Operator
EA	Eventual Availability
EBGL	Electricity Balancing Guidelines
ESPS	Energy Storage Power Stations
FAM	Final Assignment Mechanism
FASS	Future Arrangements for System Services
FCR	Frequency Containment Reserves
FFR	Fast Frequency Response
FPN	Final Physical Notification
GC2	Gate Closure 2
HLD	High Level Design
ICM	Intraday Continuous Market
LCIS	Low Carbon Inertia Services
LTS	Long Term Scheduler
NI	Northern Ireland
PIR	Phased Implementation Roadmap
POR	Primary Operating Reserve
QTP	Qualification Trial Process
RAs	Regulatory Authorities
RES	Renewable Energy Sources
RM1	Ramping Margin 1
RM3	Ramping Margin 2

Acronym	Meaning
RM8	Ramping Margin 3
RRD	Replacement Reserve Desynchronised
RRS	Replacement Reserve Synchronised
SEM	Single Electricity Market
SEM-C	Single Electricity Market Committee
SNSP	System Non-Synchronous Penetration
SOR	Secondary Operating Reserve
SSFA	System Services Future Arrangements
ST	Secondary Trading
TOR1	Tertiary Operating Reserve 1
TOR2	Tertiary Operating Reserve 2
TSO	Transmission System Operator
UR	Utility Regulator

Appendix

Appendix 1: Worked Example - Locational Constraints in the DASSA

Table 7 Worked Example of Locational Constraints in the DASSA

	Constraint	Example	Long-run	Imposed in the DASSA	Imposed in Secondary Trading	Imposed in the FAM
			A	B	C	D
Z	Jurisdictional / zonal minima	Minimum service provision for IE/ NI	✓	✓	✓	✓
Y	Quality/implicit bundle minima (jurisdictional/zonal)	Minimum dynamic service provision for IE/NI	✓	✓	✓	✓
X	Transmission line restrictions (to be considered as maxima for unit/s or zone/s)	Maximum service provision for a unit due to line congestion	×	×	×	✓

XD- Suppose that to meet the TOR2 requirement in the FAM, just 50 MW of additional TOR2 is required. The market clearing optimisation engine needs to choose between Unit A and Unit B that have offered 50 MW at €40 per MW and €45 per MW of TOR2 respectively. Unit A is located in Zone A that is affected by a line congestion such that it cannot transmit more power from Zone A to the grid. Unit B is located in Zone B that has not been affected by any congestion. In the absence of transmission limit considerations, Unit A will win in the FAM competition and get paid at the price of €40. However, by considering the line congestion information as proposed in Section 8.1: Locational Constraints in the DASSA, the Eventual Availability of Unit A will be set at zero even though it is technically available to provide TOR2. In contrast, the Eventual Availability of Unit B will be set at 50 MW. Therefore, the optimisation engine will assign this 50 MW requirement to Unit B, although it has a lower merit order position compared to Unit A. As a result, the FAM cleaning price for TOR2 will be €45.

XB - Suppose the equivalent situation occurs as in **XD** but this now takes place at the DASSA stage. Although due to a congestion issue Unit A won't be able to provide TOR2, Unit A has a better merit order position and will be the DASSA winner since transmission line restrictions will not be applied in the DASSA.

XC- Suppose Unit C has submitted a Sell Order for 30 MW of TOR2 in secondary trading. In addition, suppose Unit A and B have submitted 15 MW Buy Orders for TOR2, and their orders are matched with the Unit C's Sell Order as per the process set out in Section 5.4.3: Matching of Buy and Sell Orders. Unit A is located in Zone A that is affected by line congestion such that it cannot transmit more power from Zone A to the grid. Unit B is located in Zone B that has not been affected by any congestion. As proposed in Section 8.1: Locational Constraints in the DASSA, transmission limits will not be considered in the validation of matched trades and bilateral trades; therefore, both described secondary trades will be approved by TSOs.

ZB- Suppose that to meet the POR minimum requirement in the SEM, 270 MW is required in the DASSA. Suppose also that the minimum POR requirements in Ireland and Northern Ireland have been set to 150 MW and 120 MW respectively. Suppose that 300MW of valid bids are submitted to the DASSA and these are ranked

in a merit order based on price. For the first 240 MW of the merit order, 150 MW can be procured from units that are in Ireland and 90 MW from units in Northern Ireland. However, for the remaining 30 MW that must be procured in the DASSA to reach the volume requirement of 270 MW, the market clearing optimisation engine needs to choose between Unit A and Unit B that have offered 30 MW at €20 per MW and 30 MW at €25 per MW for POR respectively. Suppose that Unit A is located in Ireland and Unit B is located in Northern Ireland. If Unit A was cleared, the minimum requirement constraints in Ireland will be still met (i.e. 180 MW in Ireland > 150 MW requirement), however, the minimum POR requirement constraint in Northern Ireland will be violated (since already 90 MW procured in Northern Ireland is less than the 120 MW minimum requirement). In contrast, if Unit B clears, neither of the jurisdictional constraints will be violated. Unit B will clear in the DASSA since the minimum zonal requirements will be modelled in DASSA as a constraint.

ZC and ZD are similar to **ZB**.

YB is similar to **ZB**, however the constraint under consideration here would be minimum high-quality FFR requirement in Ireland and Northern Ireland, not POR.

YC and YD are similar to **YB**.