System Services Code Development

Plain English Version

Version 3.0

Contents

1.1 Document Review History

Review and Sign-Off:

Name	Title	Department/Role	Date

1.2 Change History

Version	Date	Author	Description of Changes
.1	26 June 24	Carole Devlin	Initial Draft
.2	01 October 24	Carole Devlin	Updates following 1st Code Development Working Group including: • Market integrity as part of objectives in section 3.2.2 • Update to Membership of Modifications Committee and Quorum in section 3.3 • Removal of References to FAM following SEM 24-066
.3	22 November 24	Carole Devlin	Updates following 2nd Code Development Working Group including: • Update to section 3.3 to facilitate non-binding voting for Modifications Committee • Inclusion of DASSA and Secondary Trading Chapters
.4	22 January 2025	FASS Project Team	Key updates following 3rd Code Development Working Group including: • Inclusion of reference to Settlement in Trading and Settlement Code in Section 2.3 • Inclusion of Capacity Market Code in Hierarchy in Section 3.1.5. • Inclusion of Market Operator for Membership of System Services Modifications Committee in Section 3.3.1 • Update from day to Working Days (WD) in table 2, Section 3.4.7 in relation • Addition of text in Section 4.3 with regard to registration to align with Section B.7.4.6 of Trading and Settlement Code

Version	Date	Author	Description of Changes
			• Insertion of text in relation to Governance of Zones in Section 6.2 • Insertion of Table showing DASSA outcomes on a Trading Period basis in Section 6.10 • Update of Agreed Procedures
2	April 2025		• Update to Section 3.4: for General Disputes the timeline for raising a dispute has been changed from within 1 year of the Disputed Event having occurred to 2 years of the Disputed Event having occurred • Updates to Section 4.3: Change of wording from Participant to Service Provider to align with Agreed Procedure presented at last Working Group Meeting • Update to Chapter 4: Inclusion of Suspension and Termination in section 4.6 • Inclusion of Supplier Charge Chapter 9
3	October 2025		• Update to Section 2.3 to incorporate RAD • Update to Chapters 8 and 9 following publication of RAD Decision Paper • Updates to Definitions to incorporate RAD

1.3 Relevant Documents

Version	Date	Author	Title/Description

1.4 Copyright Notice

2 Overview

2.1 Background

The main objective of Future Arrangements of System Services (FASS) 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 while adhering to EU regulations including the Clean Energy Package, the Electricity Balancing Guideline and System Operation Guideline. As such, the FASS programme will ensure non-discrimination between service providers and implement market-based procedures whereby 40% of standard balancing products and a minimum of 30% of all products used for balancing capacity, shall be concluded for no more than one day before the provision of the balancing.

The market arrangements comprise three main frameworks:

1. Daily Auction Framework which is under development for the procurement of System Services within one day of energy dispatch – Day Ahead System Services Auction (DASSA).
2. Layered Procurement Framework (LPF) for longer-term contracts of up to 12 months will be established to work in parallel with the daily auctions to ensure appropriate volumes of System Services are procured. The need for LPF implementation will be annually assessed by the TSOs, per the most recent SEM Committee Decision paper published in December 2023[2]
3. The already established Fixed Contract Framework will continue to be utilised to remove barriers to entry for new technologies and ensure sufficient volumes of System Services, as required.

This document provides a view of how the System Services Arrangements will be reflected in the System Services Code, with explanations of the reasoning for this design. The System Services Code itself will be further developed and presented through the System Services Code Development Working Group process. This Plain English Guide will be followed by an updated Plain English guide and then an initial legal draft of the System Services Code followed by the final legal draft of the System Services Code.

[2] SEM-23-103 System Services Future Arrangements – Detailed Design & Implementation – Phased Implementation Roadmap - Decision Paper 3

This document is based on SEM Committee decision documents, High Level Design Documents and TSO reports, these documents collectively describe the design to be implemented in the System Services Code. The key documents are shown in table 1 below:

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 EirGrid and SONI 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 20th of September Industry Workshop and TSOs' responses	Future Arrangements for System Services – Auction Design – DotEcon Afry Workshop Q&A	EirGrid link, SONI link
TSOs	Day-Ahead System Services Auction (DASSA) Design Consultation Paper V0.01	Future Arrangements for System Service – DASSA Consultation Paper	EirGrid link, SONI link

TSOs	All-Island System Services Supplier Charge	All-Island System Services Supplier Charge Consultation Paper	EirGrid link, SONI link
TSOs	Day-Ahead System Services Auction (DASSA) Design Recommendations Paper V1.0	Day-Ahead System Services Auction (DASSA) Design Recommendations Paper	EirGrid link, SONI link
SEM Committee	Future Arrangements for System Services DASSA Market Design – Decision Paper	SEM-24-066	link
SEM Committee	Future Arrangements for System Services Product Review and Locational Methodology	SEM-24-074	link
TSOs	All-Island System Services Supplier Charge – Recommendations Paper	SEM 25 007A	link
SEM Committee	All-Island System Services Supplier Charge – Decision Paper	SEM 25 007	link
TSOs	FASS: DASSA Top-Up Mechanism	FASS: DASSA Top-Up Mechanism: Consultation Paper	EirGrid link, SONI link
TSOs	Day-Ahead System Services Auction (DASSA) Volume Forecasting Methodology	Day-Ahead System Services Auction (DASSA) Volume Forecasting Methodology Recommendations Paper V1.0	EirGrid link, SONI link
SEM Committee	Day-Ahead System Services Auction (DASSA) Volume Forecasting Methodology – Decision Paper	SEM 25-011	link
TSOs	Day-Ahead System Services Auction (DASSA) Top-Up Mechanism - Recommendations Paper	Day-Ahead System Services Auction (DASSA) Top-Up Mechanism - Recommendations Paper	EirGrid link, SONI link
SEM Committee	FASS: DASSA Top-Up Mechanism Decision Paper	SEM-25-056	link

Table 1: Previous Documentation relevant to System Services Code Development

The following SEM Committee decisions that will also inform the design are yet to be published:

- Parameters and Scalars
- Second Product Review - Non-Reserves

In respect of design issues under consultation or not decided, this document has been drafted either to reflect a relatively generic view of the options under consideration without considering detailed methodologies or has deferred discussion of the topic until more information is available (e.g. regarding management of locational issues and some aspects of the auction design).

As much as possible, the naming conventions and common variables used have been made consistent with Trading and Settlement Code terminology. The names and abbreviations for variables used in this document should not be considered final as they may be further refined during the drafting of further Plain English Documents and Legal Documents.

2.1.1 TSO/DSO Co-ordination

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

2.2 Assumptions

The following conventions are used in this document.

- The SEM Committee is referred to as having various roles and functions in the System Services Market Decisions. The SEM Committee is not a separate legal entity. It is established under an inter-governmental memorandum of understanding, and recognised in legislation in each jurisdiction, as exercising certain functions of the Regulatory Authorities relating to the SEM. In this document when we refer to the 'Regulatory Authorities' having a certain role or function, the SEM Committee will be carrying out that role or function.
- In reflecting the FASS decisions this document makes statements about actions of the Regulatory Authorities. However, the Regulatory Authorities are not part of the System Services framework agreement and are not bound by the System Services Code.

2.3 Requirements of the System Services Code

In SEM-22-012[2] 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 System Services Code covers:

1. Administration and Governance arrangements, including:
    a. Roles and responsibilities, including that of the TSOs
    b. Modification process
    c. Disputes
    d. The content of any relevant Agreed Procedures, which will form part of the System Services Arrangements must be approved by the Regulatory Authorities as part of the approval process of the System Services Code.
2. Accession to the System Services Code
3. Registration for DASSA, Secondary Trading
    a. Party registration;
    b. Providing Unit registration
4. Qualification for the DASSA, Secondary Trading:
    a. Qualification and Testing

b. Qualification Trial Process: the TSOs are required to establish a 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.

5. The operation of the DASSA, including:
    a. The governance of the auction timetable;
    b. Determination of DASSA Volume Requirements including constraints (Zonal, Quality, Continuous Provision, Locational);
    c. Validation of offers in the DASSA;
    d. DASSA clearing, pricing rules;
    e. Measures to address Volume Insufficiency;
    f. Publication of DASSA results;
        i. DASSA Orders
        ii. Clearing Prices
    g. Rules governing the DASSA Auction suspension or cancellation;
    h. Prohibition on market manipulation;
    i. Prohibition on other unreasonable business methods;
    j. Role of the Auction Monitor and System Services Market Auditor.
6. Participant Obligations
    a. Confirmation of DASSA Order (or Lapse)
    b. Compensation payment to be made to the TSOs for failing to provide the entire volume specified in its DASSA Order and the appropriate level of compensation payment
    c. Application of Availability and Event Performance Scalars to payments
7. Secondary Trading
    a. Matching and Validation of Buy and Sell Orders

b. Timing of Trades

c. Notification of Trades

8. Bilateral Trades

9. Residual Availability Determination (RAD)

    a. Determination of RAD Volume Requirements

    b. Submission and validation of RAD Offers, including determination of offers in respect of Providing Units that did not submit an offer but had available capacity.

    c. RAD Clearing and RAD Price determination

    d. Publication of RAD results

    e. Monthly RAD Reports and Review of the RAD

10. Service Availability Requirements

11. Market Governance

    a. Prohibition on market manipulation;

    b. Prohibition on other unreasonable business methods;

    c. Role of the Auction Monitor and System Services Market Auditor

12. Performance Monitoring

13. Settlement functions will be included in the System Services Code. The detailed rules for the remuneration of system service providers, including settlement of secondary trades, and the associated rules for system service charges on suppliers will also be set out in the Code. There will be monthly invoicing one month in arrears.

14. Long Term Contracts

15. Layered Procurement Framework

16. Arrangements for services that do not partake in DASSA, Secondary Trading i.e. Ramping, Inertia and Voltage services.

3 Legal and Governance

3.1 Code Scope and Objectives

The System Services Code scope will follow the form of equivalent sections in the Trading and Settlement Code and is expected to describe:

- The legal and regulatory framework under which the System Services Code is formed.
- The objectives of the System Services Market.
- The various trading arrangements in FASS governed by different Codes, and the need for coordination between these trading arrangements for the successful operation of the FASS overall.
- The licence obligations on the TSOs with respect to the operation, administration, and development of the System Services Market.

The objectives of the System Services Code, based on the wording of the Transmission System Operator Licences due to take effect at a later date[3], are expected to be as follows:

1. to facilitate the efficient discharge by the TSOs of the obligations imposed upon it by the Transmission System Operator Licences.
2. to facilitate the efficient, economic, and coordinated operation, administration and development of the System Services Market in a financially secure manner.
3. to facilitate the participation of undertakings including electricity undertakings engaged or seeking to be engaged in the provision of System Services in the System Services Market.
4. to promote competition in the provision of System Services.
5. to provide transparency in the operation of the System Services Market.
6. to ensure no undue discrimination between persons who are or may seek to become parties to the System Services Code; and

[3] As set out in the RAs Decision Notices in XX

7. through the development of the System Services Market, to promote the short-term and long-term interests of consumers of electricity with respect to price, quality, reliability, market integrity and security of supply of electricity across the island of Ireland.

8. The above objectives must also align with EU regulations such as the Clean Energy Package, the Electricity Balancing Guideline (EU 2017/2195) and System Operation Guideline (EU 2017/1485) in developing an overarching commercial and legal framework to drive necessary third-party investment to meet challenges of high renewables.

3.1.1 Appendices and Agreed Procedures

The Appendices and the Agreed Procedures, as may be amended or modified from time to time, shall be construed as and form part of the Code and shall be subject to the terms of the Code. The Agreed Procedures set out the detail of procedures to be followed by Parties in performing obligations and functions under the Code.

Appendix [?] "Scope of Agreed Procedures" describes and sets out the scope of each of the Agreed Procedures.

A description of individual products will also be included within the Agreed Procedures. Per SEM Committee Decision 23- 103[2], these are subject to a Product Review with a SEM Committee decision due in Q4 2024.

3.1.2 Governing Law

This Code and any disputes arising under, out of, or in relation to the Code shall be interpreted, construed and governed in accordance with the laws of Northern Ireland.

3.1.3 Jurisdiction

Subject to the provisions relating to the Dispute Resolution Process, the Parties hereby submit to the exclusive jurisdiction of the Courts of Ireland and the Courts of Northern Ireland for all disputes arising under, out of, or in relation to the Code.

3.1.4 Term

The Code shall commence on the Commencement Date and shall have no fixed duration.

3.1.5 System Services Code Hierarchy/Priority

In the event of any conflict between any Party's obligation pursuant to any Legal Requirements and the Code, such conflict shall be resolved according to the following order of priority:

(a) requirements under Applicable Laws;

(b) any applicable requirement, direction, determination, decision, instruction or rule of any Competent Authority;

(c) the applicable Licence;

(d) the Grid Code applicable to the relevant Providing Unit concerned;

(e) the Metering Code applicable to the relevant Providing Unit concerned;

(f) the Capacity Market Code

(g) the Trading and Settlement Code;

(h) this Code.

3.2 Roles and Obligations

3.2.1 The Regulatory Authorities

The Regulatory Authorities will have the following roles/powers with respect to the System Services Code:

- Making final decisions on the approval, amendment or rejection of modifications to the System Services Code as proposed by the Modifications Committee.
- Resolution of Disputes should TSOs be party to Dispute.

3.2.2 The TSOs

The responsibilities of the TSOs will include:

- Running the Registration and Qualification process,
- Maintaining a system to support the Registration and Qualification process;
- Maintaining a register of Registration and Qualification data;
- Calculating the Volume Requirement for DASSA including any locational considerations;

- Maintaining a system to validate DASSA offers and conduct DASSA Auction clearing;
- Maintaining a system to conduct and validate Secondary Trades;
- Maintaining a system to validate Bilateral Trades;
- Under exceptional circumstances as detailed in Section 7, participation in Secondary Trading
- Monitoring and enforcing commitment obligations of service providers
- Maintaining a register of awarded DASSA orders, Secondary and Bilateral Trade data and associated prices;
- Publishing auction parameters in accordance with the System Services Code or as otherwise directed by the Regulatory Authorities;
- Maintaining a register for Fixed Term Contracts
- Annual Assessment of Layered Procurement Framework
- Managing and maintain a system to calculate and levy System Services Charges
- Releasing/publishing DASSA in accordance with the System Services Code or as otherwise directed by the Regulatory Authorities;
- Supporting the process for resolution of Disputes
- Advising the Regulatory Authorities of proposed changes to the System Services Code to better achieve the objectives of the Code
- Monitoring performance of System Service Providers.
- Tendering for and contracting the Auction Monitor and System Services Market Auditor
- Management of Credit Cover arrangements under the Code; and
- Administering the System Services Code, including Agreed Procedures.

3.3 Modification Process

This section describes the process for modifying the System Services Code. From SEM Committee High Level Design Decision (SEM 22-012), the Regulatory Authorities stated that:

- A System Services Panel will be established.
- The panel will be consulted on any changes to the System Services Code or other documentation relating to the procurement of System Services. Membership of the Panel will comprise representatives from industry.
- The TSOs will be responsible for drafting and submitting modification recommendations to the Regulatory Authorities and will ensure the views expressed by the Panel are clearly set out.

Detail on the workings of System Services Modifications Committee would form part of an Agreed Procedure in a similar manner to the Trading and Settlement Code. Some high-level principles with regard to the Modification Process are set out here.

The TSOs shall establish and maintain the System Services Modification Committee which shall be a standing body constituted to:

- generally, review and discuss the System Services Code and its workings;
- review and discuss suggestions for modifications to the System Services Code which the TSOs, the Regulatory Authorities, or any system service participant may wish to submit to the TSOs for consideration by the System Services Modification Committee from time to time;
- discuss what changes are necessary to the System Services Code arising out of any unforeseen circumstances referred to it by the TSOs; and
- publish recommendations and ensure that consultation upon such recommendations has occurred through System Services Modifications Committee members

3.3.1 Membership of System Services Modification Committee

The System Services Modifications Committee shall comprise of no more than 20 members, which shall include at least the following at all times:

- A chairperson to be appointed by the SEM Committee
- A representative from the CRU
- A representative from the UR
- A representative from EirGrid

- A representative from SONI
- A representative from the Market Operator
- A representative from ESBN DSO
- A representative from NIEN DSO
- At least 1 Generator Unit representatives
- At least 1 DSU representative
- At least 1 Interconnector representative
- At least 1 Assetless representatives
- At least 1 Flexible Participant representative
- At least 1 Supplier representative
- At least 1 Renewable Generator representative
- At least 1 Storage representative

The TSO shall provide the secretariat to the Panel.

Any person may register to be a member of the Modifications Committee where that person holds a licence, where applicable, relevant to the activities of the Appointor and such activities represent a material element of that person's business. The chairperson shall have the right to add additional members should it be deemed necessary.

The Secretariat shall arrange a Nominating Participant Election for the initial Modifications Panel to fill the vacancies listed above. Each Nominating Participant may put forward one nominee and an alternate for that nominee for appointment to the Modifications Committee.

3.3.2 Meetings of the Modifications Committee

The Modifications Committee shall have a Meeting at least once every 2 months. The Modifications Committee, acting through the Secretariat, shall set the date of each Meeting and, where possible, shall publish such date at least two weeks in advance. Meetings will take place in person.

To form a Quorum the Chairperson or Vice-chairperson must be present, together with the following Members:

(a) at least four system service provider representatives.

(b) at least one Regulatory Authorities appointee; and

(c) at least one System Operator appointee.

Any person may attend Meetings of the Modifications Committee in an observatory capacity where that person has informed the Secretariat to the Modifications Committee in advance and the Secretariat has confirmed that person's attendance. Where space is limited, and with the agreement of the Chairperson of the Modifications Committee, attendance of non-members may be limited on a first come first served basis.

3.3.3 Modification Proposals

A change to the Code or Agreed Procedures can be administered via the Modifications process per section 3.3 of this document. Any proposed change shall be in the form of a Modification Proposal using the template available on the TSO website.

3.3.4 Procedure for Developing Proposals

Any person may submit a Modification Proposal. Modification Proposals to the Code can be proposed by any person including the TSOs and the Regulatory Authorities. Any Modification Proposal shall be submitted to the Secretariat.

When raising a Modification Proposal, the Proposer shall ensure that their proposal is clear and substantiated with the appropriate detail including the way in which it furthers the Code Objectives to enable it to be fully considered by the Modifications Committee. Each Modification Proposal will include a draft text of the proposed Modification to the Code unless, if raising a Provisional Modification Proposal whereby legal drafting text is not imperative.

At a duly convened meeting of the System Services Modification Committee, the Proposal shall be presented to the Members by the Proposer, who shall endeavour to answer any initial questions which the other Members may have in respect of the Proposal or the presentation. The Modification Committee shall discuss the Proposal. Members of the System Services Modification Committee shall be entitled to one, non-binding, vote. Voting may be conducted by open ballot. Each voting Member may communicate their approval or disapproval of the Proposal by a show of hands.

The Chairperson taking into account the views and votes cast of the System Services Modifications Committee may determine that the Proposal:

- does not merit any further consideration, particularly where the Proposal is deemed, in the Chairperson's opinion, to be contrary to the SEM Objective or System Services Code Objectives or does not further any of those objectives;

- shall be submitted by the TSOs to the Regulatory Authorities as a System Services Code modification for approval. The modification application shall include the original Proposal and the views and considerations of the System Service Modifications Committee; or

- merits further consideration.

In the event further consideration is required, the Chairperson may set up a working group to consider the Proposal further in liaison with the Modifications Committee. Each working group shall be chaired by a representative from the TSOs or such other nominees as may be designated by the TSOs who shall coordinate the further consideration of the Proposal. The working group shall report to the System Services Modifications Committee at each meeting to the progress of the working group. When the work of the working group is complete, and following final review by the System Services Modification Committee, the TSOs may submit the Proposal to the Regulatory Authorities for a revision of the System Services Code and in doing so shall include the original Proposal and the views and considerations of the System Services Modifications Committee.

3.3.5 Intellectual Property Issues Associated with Modification Proposals

Each Party submitting a Modification Proposal shall be deemed to have irrevocably licensed any Intellectual Property Rights or other rights to, and to have waived any moral rights in, the content, form or other aspect of the Modification Proposal and such licence and waiver shall be a precondition to the valid submission of a Modification Proposal.

Each Proposer, who is not a Party, shall be required to irrevocably licence any Intellectual Property Rights or other rights to and waive any moral rights in the content, form or other aspect of the Modification Proposal and such licence and waiver shall be a precondition to the acceptance of a Modification Proposal.

A form for Modification Proposals shall be made available on the provided by the TSOs and such form shall include a licence of Intellectual Property Rights, and waiver of moral rights in respect of the content, format or other aspects of the proposal.

3.3.6 No Retrospective Effect

For the avoidance of doubt, a Modification shall have effect as and from the date specified by the Regulatory Authorities and in no event shall that date be earlier than the date on which the Modification is approved by the Regulatory Authorities. Under no circumstances shall Modifications have retrospective effect.

3.3.7 Urgent Modification Proposals

A Proposer may mark a Modification Proposal as "Urgent". A Proposer submitting a Modification Proposal marked "Urgent" shall submit the Modification Proposal to the TSOs and to the Regulatory Authorities.

The TSOs shall, as soon as possible on receipt of a Modification Proposal which is marked "Urgent", contact the Regulatory Authorities which shall determine whether or not it shall be treated as Urgent.

A Modification Proposal shall be determined to be Urgent by the Regulatory Authorities where, if not made, it can reasonably be anticipated that the event or circumstance with which the Modification Proposal is concerned would imminently:

- threaten or prejudice safety, security or reliability of supply of electricity; or
- unduly interfere with, disrupt or threaten the operation of the System Services Market or any of its component markets;
- or if a Modification is required to correct a material error or inconsistency in the Code or between the Code and another market code.

If the Regulatory Authorities determine that a Modification Proposal is Urgent, the System Services shall convene an Emergency Workshop.

If the TSOs consider that any of the criteria for an Urgent Modification apply in respect of any Modification Proposal that has not been marked "Urgent" by the Proposer, the TSOs shall promptly submit the Modification Proposal to the Regulatory Authorities for consideration as an Urgent Modification

In the event that a Modification Proposal is determined by the Regulatory Authorities to be Urgent, the Regulatory Authorities shall propose the procedure and timetable to be followed in making a recommendation in respect of the Urgent Modification which may fast-track the normal processes provided for in this Code in accordance with Agreed Procedure 5 – Modifications Committee Operation.

3.3.8 Alternative Modification Proposals

If any person does not agree with a Modification Proposal to the Code, it may propose an alternative Modification Proposal, which if received in sufficient time to be considered within the Regulatory Authorities' plans for progressing the initial Modification Proposal may be considered in conjunction with, or in substitution for, the initial Modification Proposal.

3.3.9 Decision of the Regulatory Authorities

Following receipt of responses to the public consultation, the Regulatory Authorities shall decide whether to make a Modification in accordance with the proposals laid out in the consultation paper or otherwise. The Regulatory Authorities may make a Modification that is different (including materially different) from that proposed in a Modification Proposal if the Regulatory Authorities are satisfied that, having regard to the issue or issues that were raised by the Modification Proposal that, the different Modification will or is likely to better contribute to the achievement of the SEM Objectives and the System Services Code Objectives.

The Regulatory Authorities shall make their decision in relation to a Modification Proposal as soon as reasonably practicable following closure of the public consultation.

Any decision of the Regulatory Authorities to reject a Modification Proposal must set out the reasons for the decision in writing and the Regulatory Authorities must provide the reasons to the person making the Modification Proposal and the Parties to the Code.

A Modification shall become effective [x] Working Days after the date of the decision of the Regulatory Authorities or such other date as may be specified by the Regulatory Authorities in its decision.

Once any Modification has been made, the TSOs will be required to implement the Modification, including making the necessary changes to systems and processes with effect from the date provided for. The TSOs shall publish the decision of the Regulatory Authorities promptly on its receipt.

3.4 Dispute Resolution

It is proposed to define Dispute per the Trading and Settlement Code and Capacity Market Code. A "Dispute" means any claim, dispute or difference of whatever nature between any of the Parties howsoever arising under, out of or in relation to the Code or the System Services Framework Agreement (including the existence or validity of the same) in respect of which (i) one Party has served a Notice of Dispute, or (ii) a Notice of Dispute is deemed to have been served. A Dispute also includes any Settlement Dispute.

The first step is a written Notice of Dispute issued from one party to another party or parties. The Notice of Dispute shall include the following:

- details of the Dispute including the paragraphs of the Code relevant to the matters being disputed;
- additional supporting documentation;
- counterparties to the Dispute;
- the proposed negotiation timeframe; and
- any corrective actions sought.

A copy of the notice must be sent to the TSOs, who can inform third parties impacted by the dispute of its existence, nature and progress. Where the TSOs are a party to the Dispute, they send a copy of the dispute notice to the Regulatory Authorities.

Disputes are designed to guarantee the correct application of the provisions of the System Services Code in operating and settling the System Services Market and to provide assessment and remedial measures in the event of a non-compliance being identified.

Disputes may address '*any claim, dispute or difference of whatever nature between any of the Parties howsoever arising under, out of or in relation to the Code or the Framework Agreement'*[4]. Disputes also require the Regulatory Authorities to receive updates and provide approval at key stages of the process and, if no agreement can be reached, entitle the affected parties to a higher-level independent recourse to a System Services Dispute Resolution Board and ultimately Court proceedings.

[4] Extract from T&SC 2.276. Section 6.59, however, excludes from the Dispute process any actions to recover Unsecured Bad Debt.

The SEM Committee decisions in relation to FASS did not make direct mention of the Dispute Resolution process, therefore the existing provisions for the Trading & Settlement Code and Capacity Market Code will be adapted were possible. The entities, roles and functions involved for the Trade & Settlement Code as well as the Capacity Market Code are largely valid and adaptable to the new System Services market structure.

3.4.1 Objectives of the Dispute Process

The general objectives of the Dispute Process, as stated in paragraph B.19.5.1 of the Trade & Settlement Code, are also valid for the System Services Code:

It is intended that the Dispute Resolution Process set out in or implemented in compliance with the Code and described in detail in the following paragraphs should to the extent possible:

1. *be simple, quick and inexpensive;*
2. *preserve or enhance the relationship between the Disputing Parties;*
3. *resolve and allow for the continuing and proper operation of the Code having regard to the Objectives of the Code;*
4. *resolve Disputes on an equitable basis in accordance with the provisions of the Code having regard to the Objectives of the Code;*
5. *take account of the skills and knowledge that are required for the relevant procedure; and*
6. *encourage resolution of Disputes without formal legal representation or reliance on legal procedures.*

3.4.2 Types of Disputes

A Dispute is deemed to exist when one Party notifies another Party or Parties in writing of the Dispute by way of a Notice of Dispute within the applicable timeframe, as follows:

- for Disputes in relation to Settlement Queries within five Working Days of receipt of the TSO's response to the relevant Settlement Query; or Dispute will be deemed to

have arisen automatically if the System Operator fails to resolve a Settlement Query and a Notice of Dispute is not required;

- for a Pricing Dispute, within five Working Days of the relevant DASSA Price being published;
- for all other Disputes ("General Disputes"), 20 Working Days of that Party having become aware of the Disputed Event and in any event within 2 years of the Disputed Event having occurred.

Referral to a System Services Dispute Resolution Board (SSDRB) may take place should disputing parties fail to reach an agreement within a prescribed number of Working days following the Notice of Dispute. This detail is outlined for each dispute type in the following sections.

3.4.3 System Services Dispute Resolution Board (SSDRB)

It is intended to adopt principles for Dispute Resolution similar to those set out in both the Trading and Settlement and Capacity Market Codes. Any Dispute in respect of which a Notice of Dissatisfaction has been issued may only be finally settled by proceedings in a Court having competent jurisdiction. The provisions set out in this Dispute Resolution Process shall not prejudice or restrict any Party's entitlement to seek interim or interlocutory relief directly from the appropriate Court or Courts having competent jurisdiction. The timelines and process flow for each type of dispute is discussed in more detail in the preceding sections.

The TSOs shall establish and maintain a panel (the "Panel") consisting of members which have been approved by the Regulatory Authorities.

The Panel shall include suitably qualified experts from relevant disciplines who:

- are experienced in and familiar with alternative dispute resolution procedures which do not involve litigation; and/or
- have an understanding of the electricity industry or have the technical competence to acquire such an understanding.

The TSOs shall review the membership of the Panel, confirming the continued willingness and availability of members to be included at least once every year. The TSOs shall publish the name and a brief curriculum vitae for each Panel member.

A person may be appointed as a member of the Panel and the equivalent panel established and maintained under the corresponding dispute resolution provision in the Trading and Settlement Code and Capacity Market Codes.

The Panel shall consist of no less than 10 members subject to any vacancies which may arise from time to time which shall be filled as soon as reasonably practicable. Any vacancies arising from time to time shall not invalidate the Panel.

The SSDRB shall be comprised of either a sole member or three members, except where the Disputing Parties cannot agree on the number of members. In this case, it shall be comprised of three members.

The Regulatory Authorities shall from time to time nominate a member of the Panel to act as chairperson of the Panel. The Regulatory Authorities shall appoint a replacement chairperson immediately on the position of chairperson being vacated on a permanent basis for any reason. The identity of the members of the Panel and the Panel Chairperson shall be published by the TSOs.

The Panel Chairperson shall, with the prior agreement of the Regulatory Authorities, from time to time nominate a vice-chairperson from the members of the Panel, to perform the Panel Chairperson's functions in the event of the latter's unavailability or in the event of the Panel Chairperson's position being vacant.

The Panel Chairperson and the vice-chairperson shall be retained under contract to the Regulatory Authorities. Where appropriate and at the sole discretion of the Regulatory Authorities, the contract may include provision for payment of a stipend to the Panel Chairperson and vice-chairperson in order to cover the reasonable and vouched expenses incurred by that person in connection with carrying out his or her duties under this Code. The TSOs shall reimburse the Regulatory Authorities for any payments made under any such contract.

The TSOs shall with the prior approval of the Regulatory Authorities nominate further members to the Panel from time to time as may be necessary to fill any vacancies and to maintain the membership of the panel at a minimum of 10 members.

There shall be no restriction on the ability or entitlement of the Panel Chairperson or vice-chairperson to act as a member of a SSDRB by virtue of holding those positions except where a dispute arises between the Disputing Parties in respect of the number of Members or the identity of Members of the SSDRB in relation to the Dispute concerned in which case the Panel Chairperson and vice-chairperson shall be proscribed from appointing himself or herself to the SSDRB.

No Party to this Code shall hold (or seek to hold) the Panel Chairperson or vice-chairperson liable for any claims for anything done or omitted in the discharge or purported discharge of the Panel Chairperson's or vice-chairperson's functions under this Code, unless the act or omission is shown to be in bad faith. The Disputing Parties shall jointly and severally indemnify and hold the Panel Chairperson or vice-chairperson (as applicable) harmless from and against claims made by any Party or any other person against the Panel Chairperson or vice-chairperson (as applicable) in connection with their discharge or purported discharge of the Panel Chairperson's or vice-chairperson's (as applicable) functions under this Code, unless the claim is in connection with an act or omission shown to be in bad faith.

3.4.3.1 SSDRB General Disputes

In the case of a General Dispute, if, having met, the Disputing Parties are unable to reach agreement within a period of 10 Working Days of first meeting, the General Dispute may within a further period of 20 Working Days be referred by any Disputing Party to the SSDRB by way of notice in writing to the other Disputing Party or Parties ("Referral Notice"), otherwise the Notice of Dispute in relation to the General Dispute will be deemed to be withdrawn.

A Referral Notice shall be in the form published from time to time by the TSOs. The Disputing Party shall immediately send a copy of the Referral Notice to the TSOs (or to the Regulatory Authorities where the TSOs are a Disputing Party), and the TSOs shall forward the Referral Notice to the Panel Chairperson.

In the case of a General Dispute, the SSDRB shall be comprised of either a sole member or three members, except where the Disputing Parties cannot agree on the number of members, in which case, it shall be comprised of three members, and shall be appointed from the Panel in accordance with the following process:

- where there are no more than two Disputing Parties, the Disputing Parties may agree within 10 Working Days after the date of receipt by the receiving Party of the Referral Notice to establish a sole member SSDRB or a three member SSDRB. If the Disputing

Parties to a Dispute agree to establish a sole member SSDRB, they shall agree to appoint the sole SSDRB member from the Panel within a further five Working Days. If the Disputing Parties agree on a three member SSDRB, then each Disputing Party shall within a further period of five Working Days nominate one member from the Panel to the SSDRB and the two members so nominated shall appoint the third member from the Panel within a further period of five Working Days. Each Disputing Party shall promptly notify the Panel Chairperson of the identity of any member of the SSDRB that it has agreed with the other Disputing Party and/ or nominated;

- in the event the Disputing Parties do not within the relevant period notify the Panel Chairperson of their agreement on:

  (i) the number of members of the SSDRB, then the SSDRB shall be comprised of three members; or

  (ii) having agreed a sole member SSDRB, the identity of the sole member, then the Panel Chairperson shall within a further period of 10 Working Days appoint the sole member from the Panel. In making any such determination and appointment, the Panel Chairperson shall take account of the complexity of the General Dispute as set out in the Notice of Dispute and the range of issues which may be relevant;

- in the event that the Disputing Parties agree upon a three member SSDRB but a Disputing Party does not notify the Panel Chairperson of its nomination from the Panel, then the Panel Chairperson shall make the necessary nomination from the Panel within 10 Working Days of the end of the relevant period;

- where there are more than two Disputing Parties to any Dispute, then the SSDRB shall comprise of three members and shall be appointed by the Panel Chairperson unless all Disputing Parties have, within 10 Working Days after the date of receipt by the counterparties of the Referral Notice, notified the Panel Chairperson as to the identity of member(s) to be selected from the Panel. In making any such appointment, the Panel Chairperson shall:

take account of the complexity of the General Dispute as set out in the Notice of Dispute and the range of issues which may be relevant; and

- if the Panel Chairperson (or, where applicable, the vice-chairperson of the Panel) makes an appointment in relation to a Dispute, then the Panel Chairperson (or, where applicable, the vice-chairperson of the Panel) shall promptly notify the Disputing Parties.

3.4.3.2 SSDRB Pricing Dispute

In ISEM and other electricity markets there is provision for scenarios where manifest errors may occur in determination of market prices. Attention should therefore be given to the possibility of re-opening DASSA prices should a manifest error occur. For example, the incorrect DASSA price could be published due to an input error or system defect.

In establishing an appropriate process for any error in relation to imbalance prices for ISEM it was agreed by market participants that both accuracy and publication of prices in a timely manner were important objectives. It was also agreed within this working group that the imbalance price should be capable of being re-opened to remedy errors but subject to a materiality threshold and some limitations on the time allowable to raise a pricing dispute. The purpose of the Price Materiality Threshold value is to achieve a balance between the value to the market of repricing and resettlement of a material error, and the operational overhead of the effort and resources required to adjust for the error[5].

On 7th July 2017, the SEM Committee published the I-SEM Policy Parameters and Scheduling and Dispatch Parameters Decision Paper (SEM-17-046). In this paper, the SEM Committee set the Price Materiality Threshold at 5%, to be applied from 1st October 2018. Under paragraph B.19.3.1 of Part B of the Trading and Settlement Code, the Market Operator is required to report to the Regulatory Authorities proposing parameters to be used in determining the occurrence of recalculating the Imbalance Settlement Price as required from time to time.

Under the Trading and Settlement Code, if as part of an upheld Pricing Dispute it is determined that there is a manifest error in the pricing calculation which leads to a change in price greater than a certain Price Materiality Threshold, the price is recalculated and included in resettlement.

A materiality threshold will similarly be applied in respect of pricing disputes in the context of the System Services Code, with the onus being on the party raising the dispute to provide supporting evidence to enable the TSO to make an assessment as to whether it considers it likely that the matter being disputed will, if the dispute is upheld, satisfy the materiality threshold. The TSOs shall make this assessment within 5 working days.

The TSOs will also be limited to directing a re-opening of price only where it determines that the threshold will be exceeded. The threshold would be determined as a parameter to be reviewed from time to time as necessary. If the TSOs consider that the threshold has not been exceeded,

[5] SEM-19-042a Recommended Values for SEM Price Materiality Threshold.pdf (semcommittee.com)

the matter may be referred to the SSDRB with the panel being comprised in a manner similar to a General Dispute as outlined in section 3.4.3.1.

With regard to other settlement or Code-related matters, it is the experience of the Market Operator that unexpected issues, such as system defects or incorrect input data affecting Settlement, that do not affect prices may be discovered well after publication of statements. Where these issues have material impact, the current timelines allowing the resolution of undiscovered errors for a period of up to two years can still be maintained. The resolutions of such errors will also be subject to the same limits that will apply to Settlement Queries such as the Materiality Threshold.

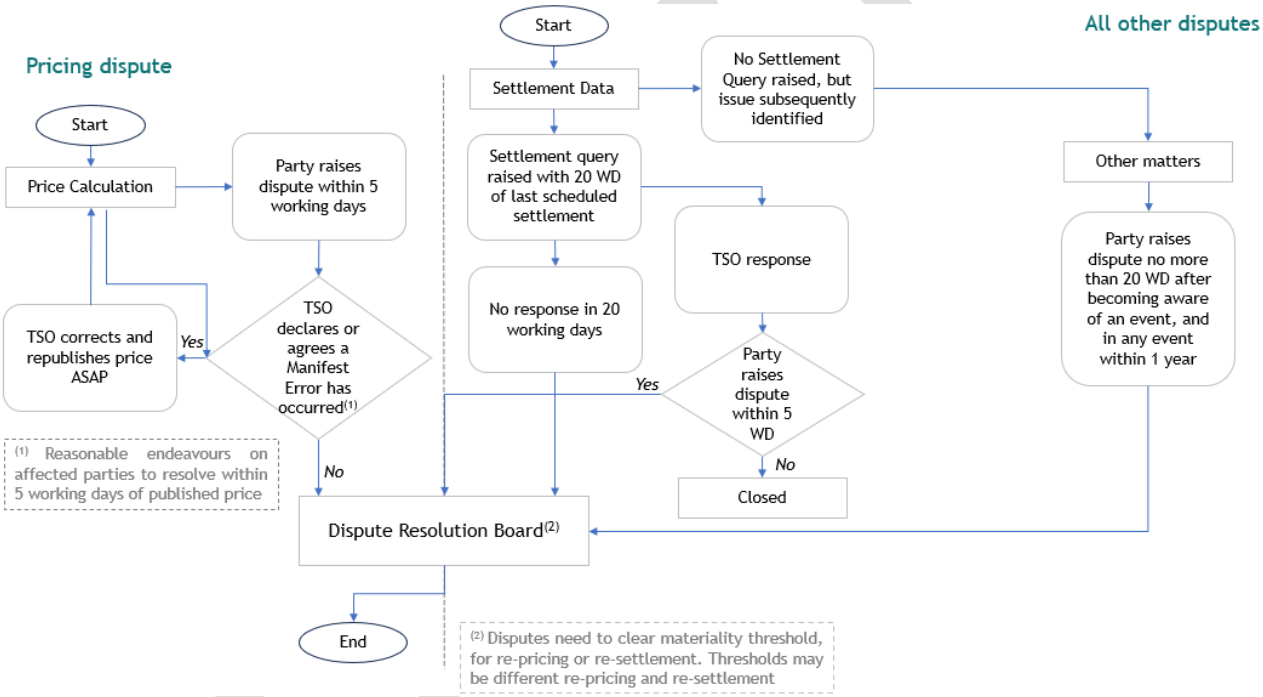

Figure 1: Overview of Dispute Process

3.4.4 Obtaining System Services Dispute Resolution Board (SSDRB) Decision

The SSDRB shall give its decision in the case of a Dispute (where the TSOs have determined that a manifest error has not occurred) within:

- 30 Working Days after the appointment of the SSDRB where there are no more than two Disputing Parties;

- 40 Working Days after the appointment of the SSDRB where there are more than two Disputing Parties; or
- such other period as may be proposed by the SSDRB and approved by the Disputing Parties.

Its decision shall be in writing providing reasons, the decision shall be binding on all Disputing Parties, who shall promptly give effect to it unless or until it shall be revised in an amicable settlement. Parties (including SSDRB) shall continue to comply with the Code in all respects.

If during its work the SSDRB identified that a Dispute or its Decision is likely to have an impact on the Trading and Settlement Code, it shall promptly notify the Regulatory Authorities and TSOs of the anticipated impact.

If any Disputing Party is dissatisfied with the SSDRB's decision, then that Party may within 15 Working Days in the case of a General or Pricing Dispute, after receiving the decision, give a Notice of Dissatisfaction in writing to the other Disputing Party or Parties and the SSDRB. If the SSDRB fails to give its decision within the relevant period set out, then any Disputing Party may, within the period specified in the relevant Disputes Process Timetable after such period has expired, give a Notice of Dissatisfaction to the other Disputing Party or Parties and the SSDRB in writing of its dissatisfaction. A Notice of Dissatisfaction may not be given until after these steps have been taken.

A Notice of Dissatisfaction shall set out the Dispute and the reason(s) for dissatisfaction. Except as stated in this section, no Disputing Party shall be entitled to commence any Court proceedings of whatever nature in relation to or in connection with a Dispute unless a Notice of Dissatisfaction has been given.

If the SSDRB has given its decision on a Dispute to the Disputing Parties and no Notice of Dissatisfaction has been given by any Disputing Party within the period specified in the relevant Disputes Process Timetable after the date of the SSDRB's decision, then the decision shall be final and binding upon all Disputing Parties.

3.4.5 Amicable Dispute Settlement

Where Notice of Dissatisfaction has been given, the Disputing Parties shall attempt to settle the dispute amicably before the commencement of any court proceedings may take place. However,

unless both Parties agree otherwise, Court proceedings may be commenced on or after the date specified in the relevant Disputes Process Timetable after the day on which Notice of Dissatisfaction was given, even if no attempt at amicable settlement has been made.

3.4.6 Court Proceedings

Unless settled amicably, any Dispute in respect of which a Notice of Dissatisfaction has been issued may only be finally settled by Court proceedings.

A Disputing Party may, in the proceedings before any Court having jurisdiction, adduce evidence or raise arguments not previously put before the SSDRB in the course of its consideration of the Dispute or included in the Notice of Dissatisfaction given by that Party. Any decision of the SSDRB shall be admissible as evidence in any Court proceedings.

3.4.7 Failure to Comply with SSDRB's Decision

In the event that:

1. no Disputing Party has given Notice of Dissatisfaction within the period allowed; and
2. the SSDRB's related decision (if any) has become final and binding; and
3. a Disputing Party fails to comply with this decision,

then any other Disputing Party may take such action as it deems necessary, including the commencement of court proceedings, to enforce the relevant SSDRB decision. There shall be no mandatory reference to the SSDRB or requirement to refer the matter to amicable settlement in respect of such a reference.

The actions and timelines associated with disputes are summarised and shown in Table 2 below.

Action	Entity	How	When
Raise a Dispute	Any Party to the SSC	Submitting a Dispute Notice to the TSO (or RAs is TSO is a disputing Party)	Within 5 WD of unsatisfactory Settlement Query response or within '20 WD of that Party having become aware of the Disputed Event and… within 2 years of the

Action	Entity	How	When
			Disputed Event' for General Disputes.
Notify all affected Parties and RAs	TSOs	Sending details of Dispute Notice to relevant Parties	Within 5 WD of receipt of Dispute Notice
Facilitate the Dispute Resolution process	TSOs (or RAs if TSO is disputing party)	Organise and chair meetings between counterparties to agree a resolution and arrange extensions	First meeting as soon as practical within 10 WD; extension to be agreed within all counterparties.
Resolve Dispute or refer it to Dispute Resolution Board	Raising party	Submit a Dispute Resolution Form or Referral Notice to Dispute Resolution Board	Within 20 WDs of conclusion of the negotiation meetings
Approve members and nominate chair of Dispute Resolution Board Panel	RAs	Provide relevant list to TSOs	From time to time
Nominate DRB members to address the referred issue	All disputing counterparties	Hold meeting	Within 10 WD of receipt of Referral Notice
Refer issue to Court proceedings	Any disputing counterparties	Issue Notice of Dissatisfaction	Within 15WDs of receipt of decision or there being no decision from the DRB within a set timeframe
Assess materiality of Dispute	TSOs	Replicate calculation independently from system	As required in the negotiating meeting
Report on quantities, topic and outcome of Disputes	TSOs	Various performance reports	According to publication of monthly, quarterly and yearly TSO reports

Table 2 Dispute Resolution process steps

3.5 Other Administrative Sections

The System Services Code will include a range of general legal and administrative sections similar to those in the Trading and Settlement Code.

In what follows, a number of standard administrative section headings are presented with potential design considerations described in sub-bullets. A number of headings are included without any sub-bullets. These are included only to facilitate discussion if stakeholders can identify any potential design issues but otherwise would follow the same wording as the Trading & Settlement Code.

1. Default, Suspension and Termination
2. Limitation of Liability
3. Force Majeure
4. Waiver
5. Severance
6. Assignment
7. Third Party Beneficiaries
8. No Association
9. Publication of the Code
10. Confidential Information
11. Freedom of Information Acts
12. Data Protection
13. Notices

    Notices which shall, for the avoidance of doubt, include:

    - Default Notices;
    - Suspension Orders;
    - Termination Orders;

- Notice of Dispute (including Settlement Disputes) and the current status of each;
- Notices of Dissatisfaction;
- Referral Notices;
- notification of Force Majeure;
- Notice of revocation of an Intermediary's authority
- Notice of proposed revocation of an Interconnector Administrator's authority
- Notice of resignation of an Interconnector Administrator
- Notice of proposed revocation of the authority of the Participant in respect of an Interconnector Error
- Notices required for the purposes of disputes determination procedure as described in detail in Agreed Procedure 7 "Disputes";

4 Participation, Accession and Registration

A person may only become a Party to the System Services Code ("the Code") in accordance with the terms of the Code and the System Services Framework Agreement. The original signatories to the System Services Framework Agreement, as determined by the Regulatory Authorities, are Parties to the Code and are not required to complete the Accession Process.

4.1 Participation under Trading and Settlement Code

For provision of certain services and technologies there will be a requirement to be registered under the Trading and Settlement Code.

The Participant under the Code with respect to:

- an Interconnector must be the same Party that is, or will be, the Party registered in respect of that Interconnector under Section B.10.1 of the Trading and Settlement Code.
- a Providing Unit that provides any of the following services

  TOR2, RR, SSRP, SIR, RM1, RM3 and RM8

  must be registered by the same Party that is, or will be, the Party registered in respect of that Providing Unit under Section B.7.1 of the Trading and Settlement Code;
- A DSU must be registered by the same Party that is, or will be, the Party registered in respect of that Providing Unit under Section B.7.1 of the Trading and Settlement Code[6]
- In the case of an Aggregator, the Providing Unit is the collection of sites which is controlled by the Aggregator, and the interface with the TSO shall be with the Aggregator.

4.2 Accession to the System Services Code

The process described here for Accession to the Code is based on that for the Trading and Settlement Code. While there will be separate requirements for each Code, it is intended to explore possible approaches to combine the accession and registration process as far as is possible.

For Units that have no involvement in providing System Services, Parties are not required to accede to the Code in respect of these units. In order to become a Party, a person (the "Applicant") who is not an Original Party shall complete and sign an application form provided for in Agreed Procedure 1 ["Registration"] and shall submit it to the TSOs. The application form specifies all conditions which the Applicant must meet to become a Party including that the Applicant shall;

1. pay the Accession Fee[7]. The Accession Fee shall be non-refundable;

[6] This requirement may change should a Grid Code Modification with regard to DSUs be approved.

[7] *From the T&SC "G.1.2.7 - In relation to the conversion between pounds sterling and euro for any Accession Fee or Participation Fee, the TSOs shall apply the Annual Exchange Rate determined one month before the start of each year." It would seem reasonable to apply the identical provisions to the Accession Fee, rather than using a potentially different System Services exchange rate determined for other purposes. Ideally, it would be possible for the Accession Fee to be settled under the T&SC rules, though this may depend on the finer workings of the Accession process.*

2. [be registered as a Party under the Trading and Settlement Code where necessary as per section 4.1]; and

3. when provided, execute the Accession Deed to adhere to the System Services Framework Agreement and this Code.

Where the TSOs receive an application from an Applicant, in accordance with Agreed Procedure 1 "Registration", if they consider that further information or clarification is required in order to complete the application, they must within 10 Working Days of receiving the application, send a notice to the Applicant informing the Applicant of any further information or clarification which is required in relation to the application or where the application is incomplete.

If the TSOs do not receive the clarification or the additional information required within 20 Working Days of the Applicant having been informed by the TSOs of the need for such clarification, the Applicant shall be deemed to have withdrawn the application. An Applicant may request additional time to provide any clarification or additional information and the TSOs shall not unreasonably withhold consent to any such request.

On receipt of a completed application form and any clarification or additional information requested by the TSOs and provided that the Applicant fulfils the conditions for accession specified in the application form, the TSOs shall within 10 Working Days of final receipt of all required information send to the Applicant by registered post an Accession Deed signed by them. The Applicant must return the executed Accession Deed to the TSOs by registered post within 20 Working Days of receipt. An Applicant may request additional time to submit an executed Accession Deed and the TSOs shall not unreasonably withhold consent to any such request, provided that the date of receipt of the executed Accession Deed shall be earlier than the effective date specified in the Accession Deed.

Following receipt by the TSOs of an executed Accession Deed the Applicant shall become a Party on the date specified in the Accession Deed unless the TSOs and the Applicant agree on a different date separately in writing.

The TSOs shall publish the fact and date of the accession of each new Party to the Code.

Obligations on a Party that accede to the code will be as for the Trading and Settlement Code. And can be paraphrased as follows:

1. Comply with the Code

2. Grant authority to the System Services TSOs to recover shortfalls /bad debt under the Code

3. Act only with the approval of the Regulatory Authorities where this is required.

4. Comply with Prudent Electric Utility Practice.
5. Maintain and comply with all other regulatory/legal instruments required of it under the Code.
6. Make payments required of it.
7. Provide accurate data when required.
8. Provide data in a timely manner when required; and
9. Provide all reasonable assistance to the TSOs.

4.3 Party Registration

Registration is a process whereby a Party gains the ability to participate in certain System Services Market processes as a Service Provider[8] [as distinct from being a Party to the System Services Code].

Party registration will be an open application process maintained by the TSOs throughout the year with party registration forms and a registration pack available on the TSO website. Party registration submissions can be made at any time via a portal managed by the TSOs.

Following submission of the relevant documentation the TSOs will contact the Party within 40 Working Days of the information being submitted and request clarification where necessary. Should clarifications be required from a Party, this must be received within 20 Working Days following the date on which the TSOs requested the clarification, otherwise the application will be deemed to have been withdrawn. The TSOs will within 50 Working Days of receiving a complete application, when applicable, confirm formally that all required information has been submitted by the applicant and send an acceptance notification to the applicant informing them that they have registered as a party and notify them of the associated Effective Date and Expiry date.

Each Party shall have a unique identifier ID, which cannot be changed once assigned.

There are several key elements to party registration for which documentation will need to be submitted, these will be outlined in detail in an Agreed Procedure and Registration Pack. This

[8] The term Service Provider is analogous to a Participant under the Trading and Settlement Code, i.e., a Party which has been registered and approved to participate in the System Services Markets and provide System Services, subject to registration and qualification of one or more Units.

includes information relating to Declarations (e.g. Director, Group Affiliate, Sub-contractor), Financial and Economic Standing, Health & Safety, Environment and Employment.

4.4 Providing Unit Registration

Providing Unit registration submissions can also be made via a portal managed by the TSOs. Only a registered party is allowed to register a Providing Unit. However, Providing Unit registration can occur simultaneously if the Party registration application is currently in progress.

Following submission of the relevant documentation the TSOs will contact the Party or Service Provider within 10 working days of the information being submitted and request clarification where necessary. The TSO when applicable will confirm formally when all required information has been submitted by the registered party and will send acceptance to the applicant so that the unit can be confirmed as registered.

Providing Unit registration will be outlined in a Agreed Procedure 1 "Registration" with required forms included in a Registration Pack. This however would require information relating to:

- Unit Identifier (unique)
- Providing Unit Name
- Site name
- Confirmation that there is a corresponding registered unit in the Balancing Market (a prerequisite to register a unit for the DASSA)
- Grid coordinates of the Connection Point
- Metering reference (MPRN)
- Jurisdiction
- Zone

Specific requirements that must be met to successfully complete unit registration which would be outlined in detail in an Agreed Procedure may include:

- For Distribution connected Providing Units, formal notification from the relevant Distribution Operator confirming appropriate operational protocols are in place is required.

- Provision of:
    - a TSO-approved System Services Test Report demonstrating the Providing Unit's capability to provide the service. If this is not provided, a testing date with the TSO should be scheduled. There is further information on the testing process outlined in section 5.1.1.
    - a site-specific Wiring Certificate demonstrating the Providing Unit's compliance with the signalling requirements for the provision of the service, as applicable to the service and the Providing Unit's technology.
- A minimum capability 1MW / 1Mvar / 100MWs^2 as applicable to each service.
- For system security reasons, designation of the Providing Unit's technology as "Proven" for the service on the System Services Proven Technologies List. The list may be amended at the TSOs discretion. For technologies not listed the participant must provide evidence to the TSO's satisfaction that the Providing Unit's technology can provide the service.
- Unless stated otherwise, the requirement to provide the relevant quantities at the Connection Point.
- For Fast Acting Reserve services monitoring equipment installed on site at the Providing Unit that meets the standards set out by the TSOs.

It is important to note that all information submitted as part of the unit registration process will be superseded by that contained within Approved TSO test reports.

A unit may only qualify to participate in DASSA and Secondary Trading following the Qualification process set out in section 5.

4.5 Intermediaries

A Party (or an Applicant, as applicable) may, as an Intermediary, register a system services Providing Unit, which is owned or controlled by a third party (the Unit Owner), as a Providing Unit under the Code.

A person applying to register a Providing Unit as an Intermediary must either already be a Party to the Code, or an Applicant, provided that in the latter case registration of any Providing Units shall not take effect until the Applicant acceded/registered as a Party. For the purposes of the appointment of an Intermediary under the Code, the person appointing the Intermediary is not required to be a Party to the Code.

An Intermediary may register any Providing Unit in accordance with the registration procedure provided that:

- the Regulatory Authorities have consented to the registration of the relevant Providing Unit by the Intermediary; and
- the Intermediary has submitted a Form of Authority to the TSOs, executed by the Intermediary and the Providing Unit Owner;

The Intermediary shall, for the purposes of the Code, be the Service Provider for any Providing Unit registered in respect of the Intermediary in accordance with the Code unless and until its authority under the Form of Authority has expired or been revoked.

4.6 Deregistration, Suspension and Termination

A Party may apply at any time to Deregister any Providing Units registered in its name. A Party shall notify the TSOs and the Regulatory Authorities of its intention to Deregister any Providing Units at least 40 Working Days in advance of its intended date of Deregistration, using the appropriate form for Deregistration set out in Agreed Procedure 11 - "Suspension and Termination".

A Party may apply at any time to Voluntarily Terminate from the System Services Code, which will have the effect of Deregistering all of the Party's Providing Units, and the Party will cease to be a Party to the System Services Code. To do so, the Party will submit the Voluntary Termination Form the System Operator at least 90 Working Days prior to the date upon which it is intended that the Voluntary Termination will take effect.

Default, Suspension and Termination arrangements will follow those of the TSC. A Party shall be in Default when it is in a material breach of the Code. The System Operator will issue a Default Notice, and if the Default is not remedied, the System Operator will issue a Suspension Order that sets out the details of the Suspension Order including the date and time that the Suspension shall take effect.

The System Operator may Terminate a Party by issuing a Termination Order with the written approval of the Regulatory Authorities. Termination may occur if a Party:

- The Party is in breach of a Suspension Order;
- Has not remedied the Default(s) giving rise to the Suspension Order or Default Notice; or
- Has not taken action(s) required by the System Operator within the timeframe specified in the Suspension Order

5 Qualification

5.1 Qualification Registration

Following completion of Party and Providing Unit Registration as outlined in Sections 4.3 and 4.4, the Qualification Process may commence. 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.

Only Qualified Units can participate in the FASS processes (DASSA, Secondary Trading, settlement).

The TSO will make available a Qualification Pack, which will contain a unique identifier/publication date and shall contain a full list of information required for a Unit to be successfully verified as qualified to provide a specific Systems Services product. The Qualification Pack is expected also to be published manually via the TSO website(s). The Qualification application will be validated by the TSOs for completeness.

Qualification submissions can be made on a rolling basis via a portal managed by the TSOs. The participant Information to be received as part of the Qualification Process will be outlined in detail in a Qualification Pack and includes:

- Party Name
- Providing Unit Name
- System Service Product
- Reserve Characteristic
- PQ Capability

- Eligible Capacity

The TSOs will review the Qualification information provided by the registered Party and request clarifications where necessary from the registered Party. The TSO shall request information from the relevant Distribution Operator should the service provider be connected to the distribution network.

All of the information included as part of the Qualification Process must be supported by an Approved TSO Test report. Unit information emanating from the Qualification Process supersedes any indicative information provided as part of Unit or Qualification Registration. Should the unit not hold an approved TSO Test report, a test must be booked as part of the Qualification Process. Qualification cannot complete in the absence of an approved TSO Test report.

Where units have previously qualified to provide system services under DS3, those testing results are considered valid (TBC on product review) for FASS unless the unit has applied to alter any details e.g. quality type/ maximum generation.

5.1.1 Qualification Testing Process

The qualification process will undergo a highly iterative process for testing between the TSO, Service Providers and DSOs (where necessary) in order to provide specific test evidence for different System Service Products.

5.1.1.1 Testing Requirements

All of the relevant Testing requirements and procedures will also be made available within the Qualification Pack. Following completion of testing, the TSO will issue an Approved Test Report to the unit outlining the approved volumes and quality levels for participation in DASSA, Secondary Trading, following completion of the Testing process.

5.1.2 Qualification Outcomes

All information arising from the Qualification Process will supersede that provided as part of unit registration or earlier in qualification registration. TSOs have a 90-day SLA to confirm acceptance or rejection of the qualification application. Once approved Service Providers, Party/Unit and Product is added to System Service Register.

5.2 Eligibility for DASSA

The TSO will confirm whether a unit is eligible or ineligible for a given System Service Product and will confirm the following information:

- Eligible Y/N
- Eligible Capacity (max potential delivery quantity, taking into account any limits included by the DSO/DNO)
- Product Quality Coefficient
- TSO justification (particularly for ineligible applications)

Where applicable, Continuous Provision (Bundle) flag (continuous provision indicator) to be assigned.

Following completion of the qualification process a unit, the corresponding Party/Unit/System Service Product shall be added to the System Service Register and be eligible to trade in the DASSA.

5.3 Eligibility for Secondary Trading

Providers may also register for Secondary Trading and be added to the Eligibility Matrix to identify which partners they may trade with.

Separate eligibility matrixes will be maintained per product in the Auction Platform based on technical data

Secondary trading eligibility will be based on quality levels (response times, response types, frequency triggers etc.)

Only providers registering for Secondary Trading will be maintained on the matrixes

5.4 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 HLD[9], 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.

6 Auction Format of DASSA

6.1 Products to be Procured

The DASSA will initially procure reserve services in both upward (an increase in generated output or a decrease in power consumption) and downward (a reduction in generated output or an increase in power consumption) directions for the following reserve products:

- Fast Frequency Response (FFR)
- Primary Operating Reserve (POR)
- Secondary Operating Reserve (SOR)
- Tertiary Operating Reserve 1(TOR1)
- Tertiary Operating Reserve 2 (TOR2)
- Replacement Reserve
- Implicit Bundle of Reserve Services

A brief description of these products as outlined in the SEM Committee Decision in relation to Product Review and Locational Methodology (SEM 24-074) is outlined below:

[9] Section 3.3 of SEM-22-012 System Services Future Arrangements High Level Design Decision Paper.

Reserve Product	Brief Description
Upward FFR	"The "The additional MW Output or MW Reduction in Demand required compared to the pre -incident MW Output or MW Reduction, which is fully available from a Providing Unit within 1 seconds after the start of an Event and sustainable up to 10 seconds after the start of the Event. The increase in energy provided in the 1 to 10 second timeframe by the increase in MW output /or decrease in demand must be greater than any subsequent decrease in energy output or increase in demand in the 10 to 20 second timeframe."
Downward FFR	"The amount of energy (MW) reduction /withdrawal (i.e. demand increase or generation decrease) compared to the pre-event unit MW Output or MW Demand, which is fully available from a Providing Unit within 1 seconds after the start of an Event and sustainable up to 10 seconds after the start of the event. The reduction in energy provided in the 1 to 10 second timeframe by the decrease in MW output /or increase in demand must be greater than any subsequent increase in energy output or decrease in demand in the 10 to 20 second timeframe."
Upward POR	"The automatic response (additional energy output and/or reduction in Demand) to System Frequency changes released increasingly from the time of Frequency change with a full activation time of 5 seconds, and sustainable until at least 15 seconds from the time of Frequency change"
Downward POR	"Downward POR is the automatic energy output reduction (generation output decrease or increase in demand) in response to System Frequency changes, released increasingly from the time of Frequency change with a full activation time of 5 seconds, and sustainable until at least 15 seconds from the time of Frequency change"
Upward SOR	"The additional MW Output (and/or Reduction in demand) required compared to the pre -incident Output (or Demand), which is fully available and sustainable over the period from 15 to 90 seconds following an Event"
Downward SOR	"Downward SOR is the additional energy output reduction (generation output decrease or increase in demand) in response to System Frequency changes, released increasingly from the time of Frequency change with a full activation time of 15 seconds and sustainable out to 90 seconds following an Event"
Upward TOR 1	"The additional MW output (and/or reduction in Demand) required compared to the pre incident output (or Demand) which is fully available and sustainable over the period from 90 seconds to 5 minutes following an Event"
Downward TOR 1	"Downward TOR1 is the additional energy output reduction (generation output decrease or increase in demand), compared to pre-incident output or demand, which is fully available within 90 seconds and sustainable for 5 minutes following an Event"
Upward TOR 2	"The additional MW output (and/or reduction in Demand) required compared to the pre incident output (or Demand) which is fully available and sustainable over the period from 5 minutes to 20 minutes following an Event"

Downward TOR2	"Downward TOR2 is the additional energy output reduction (generation output decrease or increase in demand) compared to pre -incident /dispatch output or demand, fully available within 5 minutes and sustainable for 20 minutes following an Event"
Upward Replacement Reserve	"the additional MW output (and/or reduction in Demand) required compared to the pre Event /dispatch output (or Demand) which is fully available and sustainable over the period from 20 minutes to 1 hour following an event /dispatch instruction"
Downward Replacement Reserve	"the additional energy output reduction (Generation output decrease or increase in Demand) required compared to the pre-incident (dispatch) output or demand which is fully available and sustainable over the period from 20 minutes to 1 hour following an event/dispatch instruction"
Implicit Bundle of Reserve Services	is expressed by the TSOs "as an operational requirement to procure the continuous provision of individual services from service providers."

Table 3: Brief Descriptions of Upward and Downward Reserves

In addition, there are sub-categories of System Services describing one or more Quality attributes, which may be:

- Type of Response – which can be Dynamic or Static
- Response Category, which describes the allowed Full Activation Time (FAT) of the response and the duration of the response.

These quality attributes are important in trading. The DASSA can impose minimum requirements on the total volume provided by one or more Products having specific Quality attributes. Quality attributes are also relevant in Secondary Trading as trade can in some instances be allowed between Providing Units providing Products with different quality attributes.

Table 4 below lists the Type of Response and Response Category applicable to the Day Ahead System Services. The table applies to both Upward and Downward Reserves which are distinct Day Ahead System Services.

Reserve product	Category	FAT	Response duration
FFR – Static response	**I**	150 ms	Response sustainable up to up to 10 s after the event
	II	≤ 300 ms	
	III	≤ 1s	
FFR – Dynamic response	**IV**	150 ms	
	V	≤ 300 ms	

	VI	≤ 1s	
Static POR	I	≤ 5 s	up to 15 s after the event
Dynamic POR	II		
Static SOR	I	15 s	up to 90 s after the event
Dynamic SOR	II		
Static TOR1	I	90 s	up to 5 minutes after the event
Dynamic TOR1	II		
Static TOR2	I	5 minutes	up to 20 minutes after the event
Dynamic TOR2	II		
RR		20 minutes	up to 1 hour after the event

Table 4: Response times and response duration for Upward and Downward Reserves

Table 5 specifies additional key requirements for Upward FFR, POR, SOR, TOR1 and TOR2, separately for Static and Dynamic categories, while Table 6 shows similar (but mirrored) requirements for the Downward products and categories. These requirements include the capability ranges for Reserve Trigger, Trajectory[9], Reserve Step Sizes and Reserve Step Triggers, which the contracting TSOs may request to change in real-time as appropriate and determined by system conditions. Enabling and disabling of reserve response, alterations to the Reserve Trigger, Trajectory, Reserve Step Sizes and Reserve Step Triggers shall be implemented by the Providing Unit within 60 seconds of specification.

Criteria for	*Trigger F_1*	*End of trajectory F_2*	*Reserve Steps Sizes*	*Reserve Step Triggers*
Static FFR, POR, SOR, TOR1 and TOR2	configurable for each step between: $49.3 \leq F_1 \leq 49.8$ Hz	Not applicable	1 or more steps of ≤ 75 MW for a single discrete step.	Smallest available discrete step in response at any time must be no less than 20 % of the MW value of the Providing Unit's largest available step at that time
Dynamic FFR, POR, SOR, TOR1 and TOR2	configurable in range: $49.5 \leq F_1 \leq 49.985$ Hz	configurable in range: $49.3 \leq F_2 \leq 49.8$ Hz and $F_1 - F_2 \geq 200$ mHz	Not applicable	Not applicable

Table 5: Additional key requirements for Upward FFR, POR, SOR, TOR1 and TOR2 (refer to Figure 2)

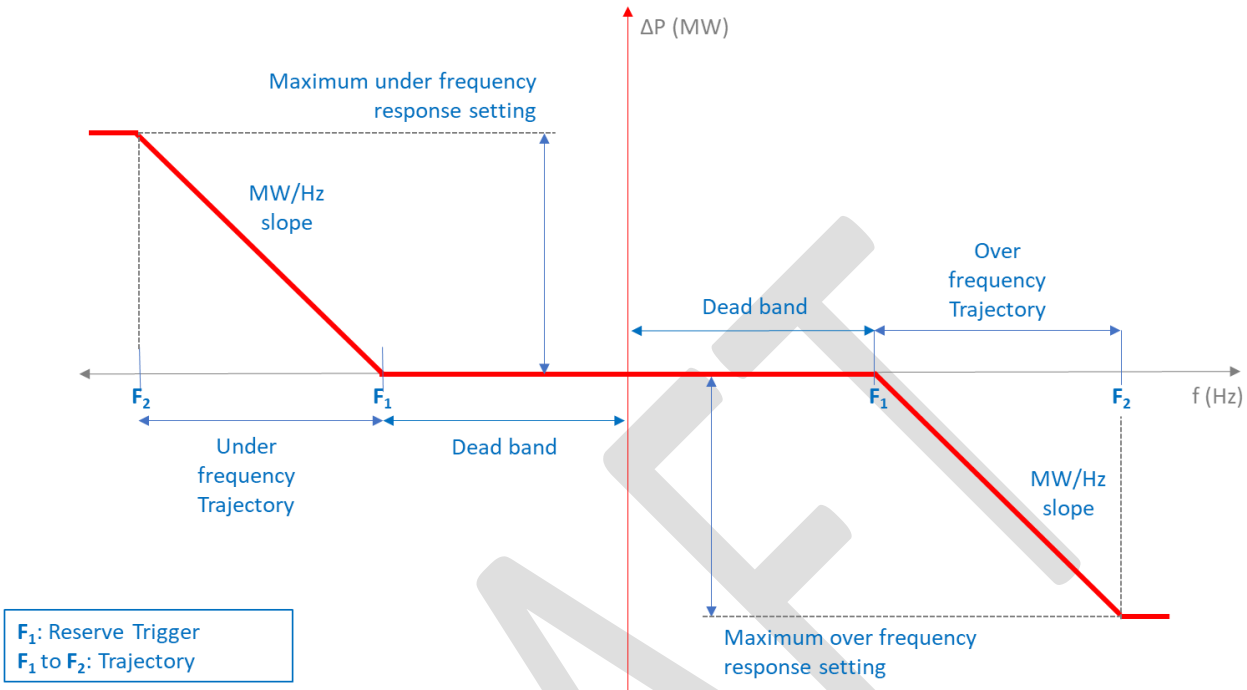

Figure 2: Illustration of Reserve Trigger F1 and Trajectory F1 - F2

Criteria for	*Trigger F_1*	*End of trajectory F_2*	*Reserve Steps Sizes*	*Reserve Step Triggers*
Static FFR, POR, SOR, TOR1 and TOR2	configurable in range for each step: $50.2 \leq F_1 \leq 50.7$ Hz	Not applicable	1 or more steps of ≤ 75 MW for a single discrete step.	Smallest available discrete step in response at any time must be no less than 20 % of the MW value of the Providing Unit's largest available step at that time
Dynamic FFR, POR, SOR, TOR1 and TOR2	configurable in range: $50.015 \leq F_1 \leq 50.5$ Hz	configurable in range: $50.2 \leq F_2 \leq 50.7$ Hz and $F_2 - F_1 \geq 200$ mHz	Not applicable	Not applicable

Table 6: Additional key requirements for Downward FFR, POR, SOR, TOR1 and TOR2 (refer to Figure 2)

In addition to individual reserve products, an implicit bundle of reserve products, would be expressed by the TSOs as an operational requirement to procure the continuous provision of

individual products from service providers e.g. a unit could provide FFR and POR as one product. The primary rationale for this is to limit the amount of energy volume to be excluded from the energy market. It is worth noting that there is no operational requirement for bundles, further detail is available in the TSO Recommendations paper in relation to Volume Forecasting Methodology. For clarity, bundling of both downward and upward reserves in any potential bundles will not be introduced, as previously indicated these will be procured separately in line with EU requirements.

Additional Notes:

- *Per the Product Review (SEM 24-074), there is no system requirement for explicit bundles, these will therefore not be included in the System Services Code at present.*
- *Auction based procurement of non-reserve services is expected to be introduced into the Code and DASSA in future, but in the meantime the current arrangements will prevail.*
- *Product Definitions will likely be housed in a subservient document under the Code. Per EBGL, these may be reviewed periodically.*

6.2 Zones and Locational Requirements

Locational zones reflect the jurisdictional constraints in Ireland and Northern Ireland. Per SEM 24-074, the SEM Committee has decided to maintain current locational reserve requirements for upward reserves and to introduce the same locational requirements for downward reserves. In effect, there are two zones, Ireland and Northern Ireland.

The TSOs' determination of zones is based on TSO Operational Security Standards and Grid Codes. The TSOs could seek to adjust zones at a later stage should technical studies identify a need to do so.

Additional Note: *Per SEM 24-074, the SEM Committee also highlighted that the TSOs are directed to include proposals for a methodology to identify and define further locational zones based on system need in the next product review. Per SEM 24 066 the SEM Committee considers it important that there is ongoing monitoring of the need for any further zones as a potential result of any observations of network constraints routinely causing distortions to the market clearing price.*

6.3 Volume Requirements

There will be an all-island volume requirement for each product for each 30-minute Trading Period in the Auction Timeframe. The volume requirement will include the volume of the product being auctioned, addressing any locational or zonal requirements, and reflecting the TSOs' operational requirements.

Additional Notes:

The details of Volume Requirements are dependent on the outcomes of Volume Forecasting Methodology Workstream, Real Time Security System Needs Analysis workstream and also the potential use of Layered Procurement Framework.

6.3.1 Volume Insufficiency

Volume Insufficiency is deemed to have occurred if the total volume offered by service providers for a service for a Trading Period in the DASSA (considering jurisdictional requirements) is less than the volume requirement set and published by the TSOs.

It is anticipated that auction preprocessing will evaluate the sufficiency of the volume per product offered by service providers in the auction. Where a volume deficit is identified, the 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 scarcity price cap[10].
- In the case of a volume scarcity due to tight system conditions, the DASSA clearing price will be set at the DASSA scarcity price cap for the product.
- In the event that the daily auction has not been run due to a technical difficulty, the solution will be determined as part of the Real Time Security System Needs Analysis Workstream.

In SEM Committee Decision paper, SEM 24-066, rules have been set out outlining the TSOs' involvement in secondary trading. Where secondary trading is to be utilised, the TSOs may procure the volume deficit through issuing Sell Orders at a Secondary Trading Price of zero and assigning the DASSA Scarcity price cap to the additional volumes procured in secondary trading.

Service providers will receive the DASSA scarcity price minus the secondary trading bid price they offer. For clarity, service providers will receive the scarcity price, which is a uniform price, minus their individual secondary trading bid price - which is not uniform across service providers in a batch. Per SEM 24-066, in the event of an oversubscription of volumes, the TSOs will select matches on the basis of technical feasibility and then by the value of the buy order starting at the highest submitted order. This ensures the lowest price to the end consumer.

The method for matching will be decided as part of the Detailed Design Phase.

6.4 DASSA Timings

The DASSA will take place after the Day Ahead Market and before publication of the results of the first day-ahead Balancing Market Long-Term Schedule (LTS). DASSA Gate Closure Time will be 15:30, with the DASSA results published at 16:00. This timing allows participants sufficient time to consider bidding strategies for both EU IDA1 and DASSA while also ensuring that DASSA is run prior to publication of LTS outcomes (published at 16:00), this approach also has the advantage of attracting DASSA bids from a wider range of units, rather than only those which are potentially able to supply System Services given the LTS outcome.

DASSA Gate Opening Time will be determined as part of the Parameters and Scalars Workstream.

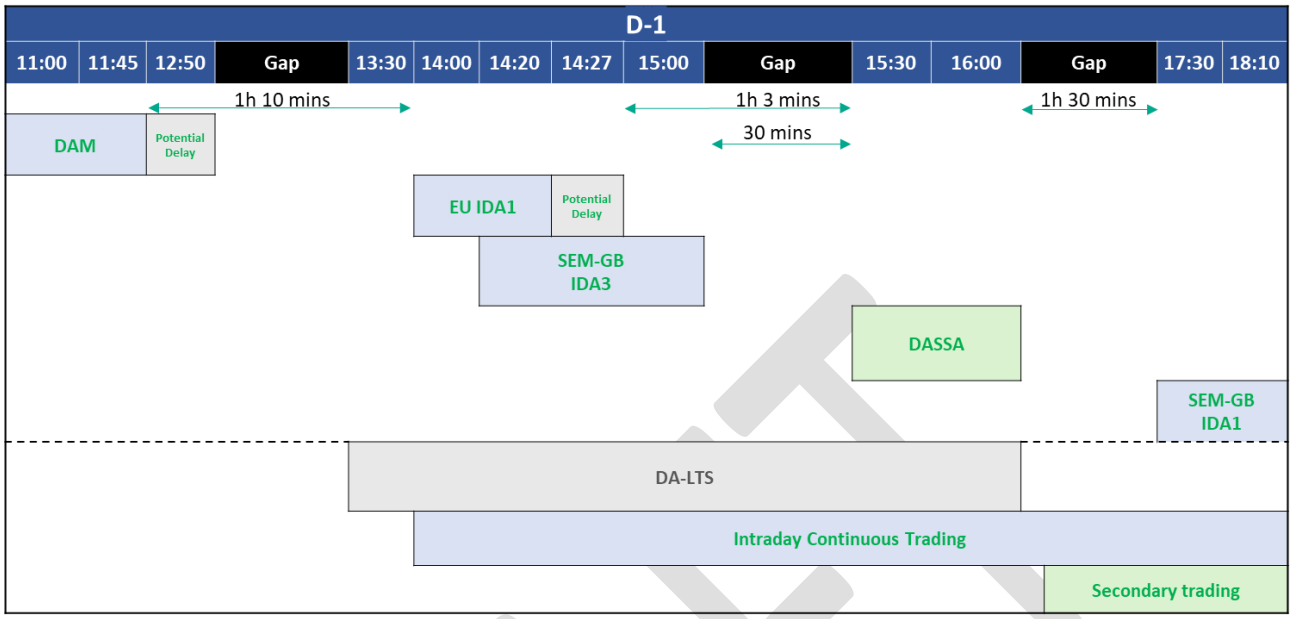

Figure 3: DASSA timing

6.4.1 DASSA Auction Time Frame

The Auction Timeframe refers to the time horizon to which each DASSA applies. 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.

6.4.2 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. Each Trading Period will be of 30 minutes duration, beginning on the hour; there will be 48 Trading Periods per Auction Timeframe. This aligns with the existing Balancing Market settlement period and with the settlement period for payments for system services under the existing Regulated Tariff Arrangements.

6.4.3 DASSA Volume Requirements

By 10:00 each day, the TSOs will publish the required reserves volumes that will be procured in the DASSA on that day D-1 for the following day D. The TSOs will specify volume requirements for all upward and downward reserves products (FFR, POR, SOR, TOR1, TOR2, RR) separately and will specify for each product minimum volumes per jurisdiction and minimum volumes of dynamic response. For FFR, minimum volume requirements for category 1 (Full Activation Time (FAT) = 150 ms) and category 2 (150 ms < FAT ≤ 300 ms) will be specified. The required reserves volumes will be published for all trading periods of the following day D.

6.5 DASSA Bidding Structure

6.5.1 Bidding Format and Process

Service providers can submit a bid (which must be associated with a single Providing Unit) for each individual product for each Trading Period within the Auction Timeframe with no interdependency between bids i.e. all bids submitted for different products across different Trading Periods will be independent.

DASSA bids will take the form of a stepwise linear supply function:

- Service providers may submit one or more price/quantity pairs, which must be increasing in price with increasing aggregate quantity that is bid.
- The maximum number of price/quantity pairs that can be submitted is 10.
- Minimum acceptable values for Quantity and Price for each step will be implemented.
- There will be an Auction Price Cap and Scarcity Price Cap associated with each product and will be determined as part of the Parameters and Scalars Workstream.
- Bids may be updated up to the time of the DASSA gate closure only.

- Bids may be divisible or non-divisible. A divisible bid can clear to any level between 0 and the maximum bid quantity of that step. A non-divisible step can only clear to 0 or its maximum bid quantity step.

If an individual price-quantity step is accepted either partially or in full for a particular service provider, the previous price-quantity step(s) should have been accepted in full. This is called sequential filling guarantee (SFG). SFG does not apply across different service providers. This avoids accepting unnecessarily large volumes of non-divisible bids; however, over-procurement may occur subject to the optimality of the market clearing outcomes.

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.

- Where the Providing Unit has submitted an offer for more than one reserve product, the characteristics of the response capability must be consistent across all products. For example, the Providing Unit cannot have Dynamic Response in the provision of POR, and Static Response in the provision of SOR.

- Only one quality type per product is permitted per unit. For example, the Providing Unit may not submit multiple bids for FFR with different quality levels applicable to each one.

- The Zone in which the unit is located must also be specified.

6.6 Validation of Bids

Auction preprocessing will include a step to validate whether bids may or may not be submitted to the DASSA. Validation will assess bids and either accept them (providing confirmation of that) or reject them (providing reasons).

For an offer to be accepted:

- Products offered must be consistent with qualified products for the providing unit.
- Quantities offered must be consistent with qualified quantity of the providing unit.
- The bid must be consistent with required formats as set out in section 6.5.1
- The bid must be submitted after gate opening and before gate closure

6.7 DASSA Clearing Overview

The SEM Committee has decided that the DASSA auction will be cleared on a pay-as-clear basis per Trading Period i.e. for each product for each Trading Period, the clearing price will be the value of the highest price/quantity pair that satisfies the auction volume requirements (including zonal requirements).

The high-level principles associated with the clearing of the auction will function as follows:

- The auction will be run on an all-island basis.
- The auction will be cleared respecting any locational and long run reserve constraints and operational requirements. Per SEM 24-074, the SEM Committee has decided to approve the TSOs' recommendation to maintain current locational reserve requirements for upward reserves and to introduce the same locational requirements for downward reserves.
- The auction will be cleared to maximise the social welfare. Because DASSA is a one-sided auction (the single buyer (TSOs) does not submit P-Q pairs for demand), the buyer's payoff function is not included in the objective function of the Market Clearing Optimisation problem. As a result, maximising social welfare is equivalent to minimising the cost of procuring system services products.
- The submitted bids for each product per Trading Period will be stacked to create a system wide supply function[11].
- There will be a single supply function per product per Trading Period for the island of Ireland.

- A DASSA Order will be allocated to auction winners for each product 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.

6.8 DASSA Clearing Optimisation

The objective function of the market clearing optimisation problem is to minimise the cost of procuring system services. This objective aligns with the requirements set forth by the European Balancing Guidelines (EBGL), which mandate that TSOs strive to minimise the costs associated with providing reserve capacity.

Cost minimization during market clearing is a standard practice that allows TSOs to fulfil stability and security requirements while maintaining economic efficiency. By introducing constraints into the market clearing optimization process, TSOs guarantee the procurement of an adequate volume through DASSA.

The objective function will have three main components:

6.8.1 Price Based Bid Selection

The first component involves the selection of bids submitted by service providers on a price basis i.e. selecting the cheapest bids first (within limitations of non-divisible bids, as outlined in section 6.5.1), up to satisfying the volume requirement for the product.

6.8.2 Valuation Functions

The second component involves 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 product or the continuous provision of selected product. These value functions represent the TSOs' willingness to allocate a better merit position, and potentially higher payments, to bidders that meet operational requirements.

TSOs operational requirements include:

- Individual reserve products.

- An implicit bundle of reserve products, which would be expressed by the TSOs as an operational requirement to procure the continuous provision of individual products from service providers.

- An operational requirement to procure different qualities or types of individual products.

Individual products will be cleared in the auction on a price basis i.e. selecting the cheapest bids first, up to satisfying the volume requirement for a service. Any operational requirements will be met as constraints in the market clearing optimisation problem i.e. the minimum specified requirement of implicit bundles of products (continuous provision) and qualities or types of product provision will be cleared.

Consequently, any feasible split between an implicit bundle of products and individual products, or between higher quality service provision and lower quality products, that is economically efficient will meet the remaining requirements.

The objective function will calculate a net offered price, which is the difference between the offered prices submitted by service providers for individual products and the value functions.

The net offered price will be evaluated during the optimisation process to determine the optimal allocation between the products that are subject to operational requirements beyond the specified minimum requirements and other products.

As a result, the value functions will establish a more favourable merit order for implicit bundles of products or higher qualities or types of products.

This enables the optimisation engine to achieve the most economically efficient split between the above-mentioned services and other services for the volumes beyond the minimum requirements.

6.8.3 Constraints

6.8.3.1 Service Requirements

There will be constraints requiring that (if feasible) the bids cleared for each zone, jurisdiction and island of Ireland satisfy the specified requirements.

6.8.3.2 Bid limits

These constraints require that bid steps clear in accordance with their bid quantities and divisible or non-divisible status as well as SFG requirements.

6.9 DASSA Clearing Prices

Given that the DASSA auction will be cleared on a pay-as-clear basis per Trading Period i.e. for each product for each Trading Period, the clearing price will be the value of the highest price/quantity pair that satisfies the auction volume requirement and operational requirements as set by the TSOs in the Objective function (as detailed in section 6.8) . The DASSA Clearing Arrangements are Single Clearing Price per Product.

6.9.1 Single Clearing Price per Product

A single price is cleared for each system product in the daily auction. Per SEM 24 066:

• The all-island uniform price for a product will be applied to all zones with non-binding locational constraints for that product.

• In zones with binding locational requirements for a product, a zonal price will only apply if it exceeds the all-island uniform price for that product; otherwise, the all-island uniform price for that product will still apply

As part of the DASSA, a DASSA Order, along with associated commitment obligations, will be allocated to the auction winners for each product during each Trading Period within the Auction Timeframe.

6.9.2 DASSA Outcomes

The outcome of the daily auction for reserve products will be:

1. A set of cleared bid steps and product volume allocated to each provider unit per product per Trading Period.
2. A clearing price per service, per Trading Period; or a clearing price per service, per Trading Period, per zone (should a zone with a binding locational requirement for a product have a zonal price that exceeds the all-island uniform price).
3. A clearing price for an implicit bundle of products.
4. A clearing price for types of quality of products.

A DASSA Order, with its associated commitment obligations, will be awarded to successful service providers. This represents volume of System Services and clearing price that a winning bidder has been assigned. It is a contractual requirement to submit a compatible FPN that allows the DASSA Order to be met as opposed to the procurement of actual supply of System Services.

The total cleared volumes per service, per Trading Period, with the associated clearing prices, will be published. An illustrative table per Trading Period is shown in Table 7 below. Further information on bundles can be incorporated following publication of the SEM Committee Decision Paper in relation to Volume Forecasting Methodology. Per Trading Period there will be in the order of 30 Volume Quantities and associated prices per zone.

Zone	*Reserve product*	*Volume Cleared (MW)*	*Price (€/£)*
Ireland/Northern Ireland	Upward FFR Category 1 Dynamic		
	Upward FFR Category 1 Static		
	Upward FFR Category 2 Dynamic		
	Upward FFR Category 2 Static		
	Upward FFR Category 3 Dynamic		

	Upward FFR Category 3 Static		
	Downward FFR Category 1 Dynamic		
	Downward FFR Category 1 Static		
	Downward FFR Category 2 Dynamic		
	Downward FFR Category 2 Static		
	Downward FFR Category 3 Dynamic		
	Downward FFR Category 3 Static		
	Upward POR Dynamic		
	Upward POR Static		
	Downward POR Dynamic		
	Downward POR Static		
	Upward SOR Dynamic		
	Upward SOR Static		
	Downward SOR Dynamic		
	Downward SOR Static		
	Upward TOR1 Dynamic		
	Upward TOR1 Static		
	Downward TOR1 Dynamic		
	Downward TOR1 Static		
	Upward TOR2 Dynamic		
	Upward TOR2 Static		
	Downward TOR2 Dynamic		
	Downward TOR2 Static		
	Upward RR		
	Downward RR		

	Implicit Bundle Product 1 e.g. Upward Dynamic FFR, POR, SOR, TOR1		
	Implicit Bundle Product 2 e.g. Upward Dynamic FFR, POR, SOR		

Table 7: Matrix of Products per Trading Period

7 Secondary Trading

Secondary trading allows service providers to buy and sell DASSA Orders after the daily auction has run.

DASSA Orders can be traded fully or partially (per MW for reserve products), subject to relevant limits as detailed in the Section 7.3. 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, and a service provider must not purchase a DASSA Order that it knows it will not be capable of fulfilling e.g. within the range of service permissible as per the System Service Register.

Secondary trades are facilitated via a central trading platform. Buy and Sell Orders are validated against 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.

Bilateral trades are also notified to the TSOs via the trading platform. Bilateral trades are to be also subject to validation processes and service providers are notified of a successful or unsuccessful trade as this occurs.

7.1 Central Secondary Trading Platform

An automated secondary trading platform, which facilitates both the matching of Buy and Sell Orders and bilateral trades, will be implemented from go-live of the DASSA arrangements. The central secondary trading platform is to be fully auditable, with all trades validated and traceable.

7.2 Secondary Trading Window

DASSA Orders can be traded after the DASSA has run and up to 60 minutes before the commencement of the relevant Trading Period.

This is illustrated in Figure 2 below: the secondary trading window opens after the results of the DASSA have been published day ahead (D-1) and closes 60 minutes (t-1) before the start of the relevant Trading Period (t) within the delivery day (D).

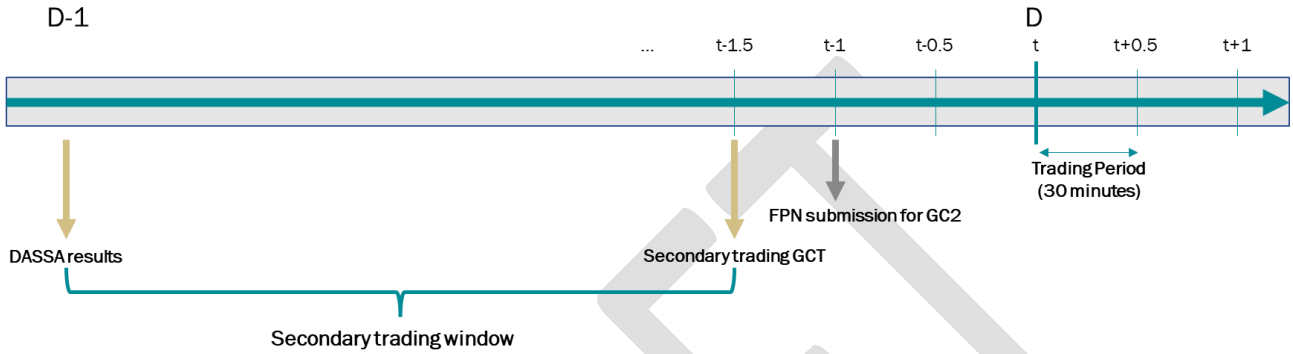

Figure 2: Secondary Trading Window

This window allows 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).

7.3 Secondary Trading Mechanics

Secondary trading may be facilitated by two means:

- The direct placing, matching and validation of Buy and Sell Orders on the secondary trading platform.
- Bilateral trading, to be validated through the secondary trading platform.

7.3.1 Placing Buy and Sell Orders

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 7.3.5 and Section 7.3.2 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.

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[10] 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.

A DASSA Order can be partially traded in terms of the volume of a product and the number of Trading Periods, except in the case where a service provider has been awarded an implicit or explicit bundle of products in the DASSA.

Service providers may win DASSA Orders for implicit bundles of products, reflecting the continuous provision of products. Such continuously provided products can 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 7.3.5: Validation of Matched Trades and Bilateral Trades below.

Block orders for combinations of products or links between Trading Periods is not to be considered for the initial implementation of the DASSA, given the additional complexity that these would add.

7.3.2 Validation of Buy and Sell Orders

Buy and Sell Orders that are placed on the central trading platform undergo a validation process before being added to the secondary trading Order Book to be matched.

The validation of secondary trades prior to being matched includes:

- Ensuring that Sell Orders are consistent with the DASSA Order and its associated obligations, as held by the service provider.
- Ensuring that the trades are feasible and within the system services capability limits contained within the Secondary Trading Eligibility Matrix (outlined in section 5.3).
- 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

10 This is separate to the DASSA Clearing price that will be paid to the Order holder, and that the settlement of secondary trading payments between buy and sell parties will not be facilitated by the platform.

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 products, and their associated benefit of continuous provision, that were procured in the DASSA are maintained.

7.3.3 Matching of Buy and Sell Orders

The SEM Committee has decided that the matching of Orders in secondary trading will be done on a batch matching basis. The high-level principles are as follows:

- Orders are be matched in a batch after the secondary trading gate closure
- Batch Matching will take place at 30 minute intervals, though the precise schedule of batch matching will be subject to the outcome of the Parameters and Scalars workstream.
- Buy and Sell Orders are added to the Order Book during the secondary trading window
- After secondary trading gate closure these Orders are to be matched based on Secondary Trade Price limits and potentially other factors such as quality levels and jurisdictional requirements.

Providers would learn of their DASSA Obligations after the batch process is complete, this would be after the secondary trading gate closure and therefore closer to real time.

7.3.4 Bilateral Trading of DASSA Orders

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 should 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 do 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.

Once submitted to the platform, bilateral trades are subject to the validation processes set out in 7.3.2: Validation of Buy and Sell Orders for the Buy and Sell elements of the trade and Section 7.3.3: Validation of Matched Trades and Bilateral Trades for the matched bilateral trade.

Per SEM 24-066, the SEM Committee reserves the right to develop and implement market power mitigation measures in the future, and to cease operation of the bilateral trading arrangements if potential market power issues are identified.

7.3.5 Validation of Matched Trades and Bilateral Trades

Both matched and bilateral secondary trades need to be validated to ensure that the DASSA constraints as set out in Section 6.8 are met. Where a DASSA constraint is broken, the trade is deemed to be invalid and will not complete.

Secondary trades are permitted between non-identical providing units service providers, provided that the relevant DASSA constraints are still met. Under this approach:

- Trading of a DASSA Order for a service between service providers with identical capabilities but residing in different jurisdictions or zones is permitted if it does not violate the DASSA zonal constraints. Otherwise, these trades will be blocked.
- Trading of a DASSA Order for a service with a particular quality type between service providers with non-identical capabilities is 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.

7.3.6 Notification

Service providers will 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 will be sent through the central trading platform.

7.3.7 Commitment Obligation and Right to Payment

Following the successful trade of a DASSA Order, which has been approved by the TSOs, the Commitment Obligation and right to payment will transfer to the buyer. This means that the buyer will 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.

7.4 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 EGBL[11] 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 6: 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 secondary trading. It is envisaged that this would occur in limited and exceptional circumstances, the conditions of which would be clearly communicated to industry.

This will also be considered as part of Volume Forecasting Methodology Workstream and also the Real Time Security System Needs Analysis Workstream.

8 Obligations

Service providers will be obligated 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 or have submitted an offer to participate in RAD. The RAD will utilise EMS data (ex-post), as used in the control centres, to determine a Providing Unit's real-time availability.

9 Residual Availability Determination

9.1 Introduction and Purpose

The Residual Availability Determination (RAD) is an ex-post process to bridge any gap between the availability of System Services via DASSA Orders from the DASSA and Secondary Trading and the real-time system requirements. Where such a gap exists, the RAD provides a means to incentivise capacity to fill this gap.

The RAD is an ex-post auction and procures the same System Service Products as in the DASSA, reflecting locational and quality requirements. It also uses the same clearing algorithm, though with separate RAD Offers and RAD volume requirements.

RAD Offers are separate to DASSA Offers but are submitted in the same window. The RAD Clearing Process occurs ex-post in a batch for all Trading Periods in a Billing Period.

[11] EU (2017/2195), recital 15, page 2.

The RAD will operate for a period of two years from the commencement of the DASSA arrangements. Operation of the RAD may be extended as part of the RAD review process, subject to recommendation by the TSOs and approval thereof by the SEM Committee.

9.2 RAD Timing, Format and Participation

The RAD will procure the same set of System Services Products (in both the Upward and Downward directions) as the DASSA and will include the same Quality Categories and Locational Zones, in addition to All-Island requirements.

Service Providers are not obligated to submit RAD Offers for their Providing Units. However, as above, there is an obligation to declare the availability of their Providing Units to provide services, and where a Providing Unit has availability but no RAD Offer, the TSOs will assign an offer using a Default Price, as set out in Section 9.4.

The RAD will operate on an operating day basis, using the DASSA Auction Timeframe, and the same set of 48 Trading Periods per Auction Timeframe as the DASSA. The RAD Offer submission window will align with DASSA Gate Opening[12] and DASSA Gate Closure at 15.30 D-1. However, the RAD Auction will be run ex-post after the Auction Timeframe, not at the same time as the DASSA.

9.3 Submission of RAD Offers

RAD Offers will have the same form as, but will be separate to, DASSA Offers. Service Providers may submit different RAD Offers and DASSA Offers for their Providing Units. RAD Offers must be submitted within the RAD Offer submission window, which will be defined by the RAD Gate Opening and RAD Gate Closure. No RAD Offer submissions, or updates to submissions, will be accepted after the RAD Gate Closure.

RAD Offers can be submitted by Service Providers in respect of a single Providing Unit and will have a similar format to DASSA Offers. Unlike the DASSA auction, the RAD Volume requirement will be established ex-post (rather than ex-ante). Service Providers will be permitted to bid their total Qualified Capacity per service. Key features of RAD bids are as follows:

- A RAD Offer may contain between one and ten (inclusive) price-quantity pairs, with price increasing with the aggregate quantity in each pair.
- Minimum acceptable values for the quantity in each step will be implemented.
- A Price Cap and Price Floor will apply to the prices in a RAD Offer.[13]

[12] To be determined as part of Parameters and Scalars workstream
[13] Applicable price caps and price floors may be determined in the Parameters and Scalars workstream.

- RAD Offers will always be Divisible and there will be no concept of Non-Divisible RAD Offers, as in the DASSA.[14]
- Where a RAD Offer has been submitted for more than one System Service Product in respect of a Providing Unit, the characteristics of the response capability must be consistent across all products. For example, the Providing Unit cannot have Dynamic Response in the provision of POR, and Static Response in the provision of SOR.
- Only one quality type per product is permitted per Providing Unit. For example, the Providing Unit may not submit multiple RAD Offers for POR with different quality levels applying to each one.

Where a RAD Offer is submitted in Sterling, the System Operators will covert that value to Euros using the published daily Exchange Rate.

For Providing Units that had capacity that was available for provision of a System Service Product in real-time, but had no RAD Offer submitted in respect of that capacity, the TSOs will assign a Final RAD Offer with the RAD Default Price to that capacity as described in Section 9.4.3.

9.4 RAD Auction Process

The RAD Auction will be run in a batch process, for all Trading Periods within a Billing Period.

9.4.1 RAD Volume Requirements

The RAD Volume Requirement for a System Service Product (in a location or for a Quality Category as applicable) will be determined ex-post by the TSOs as:

- The real-time requirement for that System Service Product; less
- The DASSA Volume Requirement for that System Service Product, plus
- The sum of:
    - Self-lapsed DASSA Order Volumes for that System Service Product;
    - TSO-lapsed DASSA Order Volumes for that System Service Product;
    - Volumes from Service Providers that were otherwise unavailable in real-time for that System Service Product;

[14] As all RAD Offers will be Divisible, it is implicit that no price-quantity pair from a Providing Unit can be accepted unless all preceding price-quantity pairs have been accepted, and there is no requirement for an explicit sequential filing guarantee.

- Any Volume Insufficiency for that System Service Product for which the System Operators did not receive sufficient offers to clear through the Secondary Trading market.

9.4.2 Inputs into The RAD Auction

The following will be used as inputs into the RAD, for each Trading Period and System Service Product:

- DASSA Clearing Prices;
- Final DASSA Orders for each Service Provider/Providing Unit
- For calculation of RAD Volume Requirements
  - Awarded DASSA Orders;
  - Self-Lapsed DASSA Orders Volumes
  - TSO-Lapsed DASSA Orders Volumes
  - Volumes of DASSA Orders that otherwise could not be provided in real-time and volumes associated with unfulfilled Volume Insufficiency;
  - Real-time System Service Product requirements.
- RAD Offers
- Real-Time Capability to deliver System Services of each Providing Unit (for calculation of each Providing Unit's RAD Availability)

There may be a defined RAD Auction Threshold (which may be set at zero). Where the RAD Volume Requirement for a System Service Product is less than the RAD Auction Threshold for a Trading Period, that Trading Period will be excluded from the RAD Auction in respect of that System Service Product, to prevent the RAD needing to be re-run for very small amounts.

9.4.3 Final RAD Orders

The TSOs will determine the set of Final RAD Orders for each Providing Unit and System Service Product as follows:

- For Providing Units for which a RAD Offer was successfully submitted:
  - If the cumulative volume in the RAD Offer price-quantity pairs exceeds the Real-Time Availability of the Providing unit, the volume in those price-quantity pairs will be truncated by the Real-Time Availability;
  - If the cumulative volume in the RAD Offer price-quantity pairs is exceeded by the Real-Time Availability of the Providing Unit, the additional available capacity will be added to the RAD Offer at the Default Price (or the lowest price in the RAD

Offer, if the RAD Offer contains ten price-quantity pairs with no existing pair at the Default Price).

- For Providing Units for which a RAD Offer was not successfully submitted (but which are otherwise eligible to participate in the RAD):
    - The Final RAD Offer will be a single price-quantity pair, with the quantity equal to the Real-Time Availability of the Providing Unit, and the price equal to the RAD Default Price.

The RAD Default Price will be €0/MW (or £0/MW for Providing Units in Northern Ireland).

9.4.4 RAD Auction Clearing

The RAD Auction process will use the same optimisation as the DASSA Auction (with the objective to determine the RAD Assignments based on RAD volume requirements while respecting quality and locational constraints at least cost), but with different inputs, particularly the RAD System Service Requirements and Final RAD Offers as described above.

The RAD Auction Clearing will be 'pay as clear' as per DASSA and will also determine the RAD Clearing Prices. The RAD Clearing Price for a System Service Product and Quality Category in a Zone will be the maximum Offer Price of any Providing Unit in that Zone that received a RAD Assignment.

However, the RAD Clearing Prices will be capped at the DASSA Clearing Price for the corresponding System Service Product, Trading Period, Locational Zone and Quality Category.

The RAD Auction Clearing outputs will be:

- The cleared volume in each RAD Order, in respect of a Trading Period, Providing Unit, and System Service Product (by Quality Category and Zone as applicable).

- The RAD Clearing Prices in respect of a Trading Period and System Service Product (by Quality Category and Zone as applicable).

9.5 RAD Outputs and Publication

The System Operators will publish the following information following successful completion of each RAD Batch Auction:

- The total RAD quantity cleared of each System Services Product (by Zone and Quality Category).
- The quantity cleared of each System Services Product by Providing Unit (by Zone and Quality Category).
- The RAD Clearing Prices for each System Services Product (by Zone and Quality Category), both in (€/MW) and(£/MW).

9.6 RAD Reporting and Review Framework

9.6.1 Monthly RAD Reports

The System Operators will submit monthly RAD Reports to the Regulatory Authorities on RAD performance and outcomes. RAD Reports will contain the following information[15]:

- The number of trading periods in which the RAD was used; and for each of those:
    - the total volume of all available capacity at BM gate closure (including Providing Units without a DASSA Order) for each Trading Period for each System Services Product;
    - the total volume of all available reserves at the end of the trading period for each System Services Product;
    - the total volume of Providing Units which have maintained consistent reserve availability from BM gate closure through to the end of the Trading Period for each System Services Product for which the RAD was required;
    - the System Services Product volumes traded through the Secondary Trading;
    - the System Services Product volumes procured through the Secondary Trading market by the TSOs in respect of Volume Insufficiency; and
    - the System Services Product volumes the TSOs sought to procure in the Secondary market in respect of Volume Insufficiency but did not receive offers.
- the total amount paid out in respect of Providing Units through the RAD;
- the total ex-ante volumes procured through the DASSA for each Trading Period;
- the real-time requirement for each Trading Period;
- the volume of all DASSA contract holders who become unavailable as a result of their own actions for each trading period; and
- the volume of all DASSA contract holders who become unavailable as a result of TSO actions for each trading period.

[15] The TSOs are currently undertaking a feasibility assessment in relation to these requirements

- The volume of all LPF contract holders who became unavailable as a result of their own actions for each trading period.
- the volume of all LPF contract holders who become unavailable as a result of TSO actions for each trading period.
- Trends in the RAD and DASSA Clearing Prices as they develop over time.
- Where the TSOs are recommending extending the use of the RAD for a further two years they shall include their plan and timeline to phase out the RAD.

9.6.2 Review of the RAD

The TSOs will undertake a review of the usage, performance and outcomes of the RAD after a period of two years from commencement of the DASSA arrangements, with reference to the information contained in the monthly RAD Reports over that year. The TSOs will submit to the SEM Committee a report containing the findings of that review, with a recommendation to either discontinue the RAD, or to extend the RAD for a period of two years, with evidence to support that recommendation. Where the TSOs are recommending extending the use of the RAD for a further two years they will include their plan and timeline to phase out the RAD.

While the RAD operates under extension as approved by the SEM Committee, the TSOs will continue to review and report to the SEM Committee on the performance of, and recommendations to discontinue/extend, the RAD at least once every two years.

10 System Services Supplier Charge

10.1 Overview

The SEMC has decided that the costs incurred in the All-Island System Service arrangements are to be recovered through a MWh-based charge levied on Suppliers at a set rate called the All-island System Services Charge Rate that will be reviewed at least annually. The charge will cover all system services that are procured for use on an all-island basis irrespective of the route used by the TSOs to procure them. This tariff will therefore cover the payments that the TSOs will make via the DASSA processes, the Layered Procurement Framework and Fixed Contracts Framework (e.g.: Low Carbon Inertia Services (LCIS)), and other All-Island System Services procurement methods. It will not cover costs associated with the final settlement and resettlement of DS3 or any system services procured for use by one TSO only. Further details of the design of the tariff can be found in SEM 25 007.

This All-Island System Service Charge Rate will be calculated using forecasts of future costs and SEM demand, as well as a 'k-factor' mechanism[16] to true up discrepancies between actual costs incurred and actual revenues collected in previous years.

Suppliers will be charged the All-Island System Services Charge Rate on their Loss-Factored Metered Quantity bought in the SEM (QMLF). The TSOs will hold a working capital fund which will help to manage cashflow risk. There will also be provision for a) Within Year Adjustment to the All-Island System Services Charge Rate based on a TSO review, and RA approval, process, b) minor adjustments on a quarterly basis and c) as a final backstop, a pro rata reduction in payments to System Service Providers in circumstances in which a shortfall remains despite any quarterly or Within Year adjustments, and exhaustion of the working capital fund (this shortfall would be reimbursed when funds allow).

The All-Island System Services Code will set out the processes, timelines and algebra for the determination of the All-Island System Services Charge, as well as the obligation on Suppliers to pay the charge. The All-Island System Services Code will then refer to the TSOs' existing TUoS settlement and credit cover processes that facilitate invoicing, billing and credit cover requirements.

10.2 Calculation of the All-Island System Services Charge Rate

10.2.1 All-Island System Services Charge Rate

The All-Island System Services Charge Rate for the Tariff Year Y is the rate at which Suppliers are charged on their MWh demand, to recover System Services costs. It will be calculated with the following formula (with terms defined in subsections 910.2.2, 910.2.3 and 10.2.4 below):

$$\text{All-Island System Services Charge Rate}_Y\ (€/MWh) = (\text{Forecast Cost}_Y + \text{k-factor}) \,/\, \text{Forecast Demand}_Y$$

The inputs into the All-Island System Services Charge Rate will be determined and set before the start of each Tariff Year. The TSOs will determine the inputs into the All-Island System Services Charge Rate, and the All-Island System Services Charge Rate itself, and seek approval from the Regulatory Authorities in an All-Island System Services Charge Submission document. The All-Island System Services Charge Submission is to be provided to the Regulatory Authorities in advance of the commencement of each Tariff Year, to allow sufficient time for review and implementation of the final approved rate.[17] If the Regulatory Authorities deem appropriate, they may undertake

[16] Where the k-factor will comprise the actual k-factor for the Y-2 year, and an estimated Y-1 k-factor.

[17] The first forecast cost submission will be made by 31st May 2026, with a presentation of assumptions made to the Regulatory Authorities by 30th April 2026.

a public consultation before deciding to approve the All-Island System Services Charge Rate. Once the All-Island System Services Charge Rate and its inputs are approved, the final approved values must be published by the TSOs within 5 days.

The All-Island System Services Charge rate is expressed in €/MWh, and SONI will convert the All-Island System Services Charge Rate to GBP using the average forward exchange rate over the last five business days in July.

Methods for determination of individual inputs are discussed further in the subsections below.

10.2.2 Forecast Costs

The TSOs will be responsible for forecasting the revenue to be recovered in each year via the All-Island System Services Charge, with the aim of recovering the costs of the following elements:

- the costs from procuring System Services in the DASSA, net of Compensation Payments, and including any real-time security payments[18];
- any contracts awarded under the Layered Procurement Framework and the Fixed Contracts Framework; and
- any other All-Island System Services, which may not be procured or remunerated through the DASSA, the Layered Procurement Framework or the Fixed Contract Framework.

The All-Island System Services Charge will not be used to recover any costs related to DS3 (including the DS3 transition). For example, the costs of settling the final months of provision under the DS3 contracts and resettlement or reconciliation of DS3 costs that occur post go-live of the FASS arrangements will not be recovered through the All-Island System Services Charge, but through existing TUoS or System Support Services mechanisms. It will also not recover the costs of any system services procured solely for the use of one TSO.

The Forecast Costs will be included in the annual All-Island System Services Charge Submission for review by the Regulatory Authorities.

10.2.3 K-Factor

As the All-Island System Services Charge Rate is based on forecasts of future costs and demand, it will be necessary to include a true-up between the actual incurred costs and the actual revenue received to avoid under or over recovering costs. This is achieved through the use of the k-factor in setting the All-Island System Services Charge Rate, which is calculated from the difference in actual costs and actual revenue.

[18] Terminology to be confirmed following Residual Availability Determination

As set out in the SEMC decision, the k-factor term will be included in the total amount to be recovered in a particular year Y, to account for any variations between actual costs and revenues that occurred in previous years.

As an example, consider setting the All-Island System Service Charge Rate for the Tariff Year Y, as in Figure 3. The Year Y All-Island System Service Charge Rate will be set in Tariff Year Y-1, using cost and demand forecasts for the Tariff Year Y.

At this time (Year Y-1), the full actual costs and revenues in Tariff Year Y-1 are not known, as year Y-1 is not entirely complete, but a k-factor for this year can be estimated. The estimated k-factor would be the difference between a) the sum of the actual costs to date in year Y-1 and the updated forecast costs for the remainder of the year Y-1 and b) the sum of the actual revenues to date in year Y-1 and the forecast revenues for the remainder of the year Y-1 (based on the updated demand forecast).

Additionally, when setting the Tariff Year Y forecast cost, the actual (full) year Y-2 costs are known for the first time and will have been audited. Therefore, the actual Y-2 k-factor is the difference between the year Y-2 actual costs and revenues (accounting for any estimated k-factor for that Tariff Year that had been already applied)

The total costs to be recovered in the All-Island System Services Charge for Tariff Year Y are:

- The forecast of the Tariff Year Y costs;
- The Tariff Year Y-1 estimated k-factor
- The Tariff Year Y-2 actual k-factor

Note that the k-factor can be positive (where the TSOs have under-recovered) or negative (where the TSOs have over-recovered).

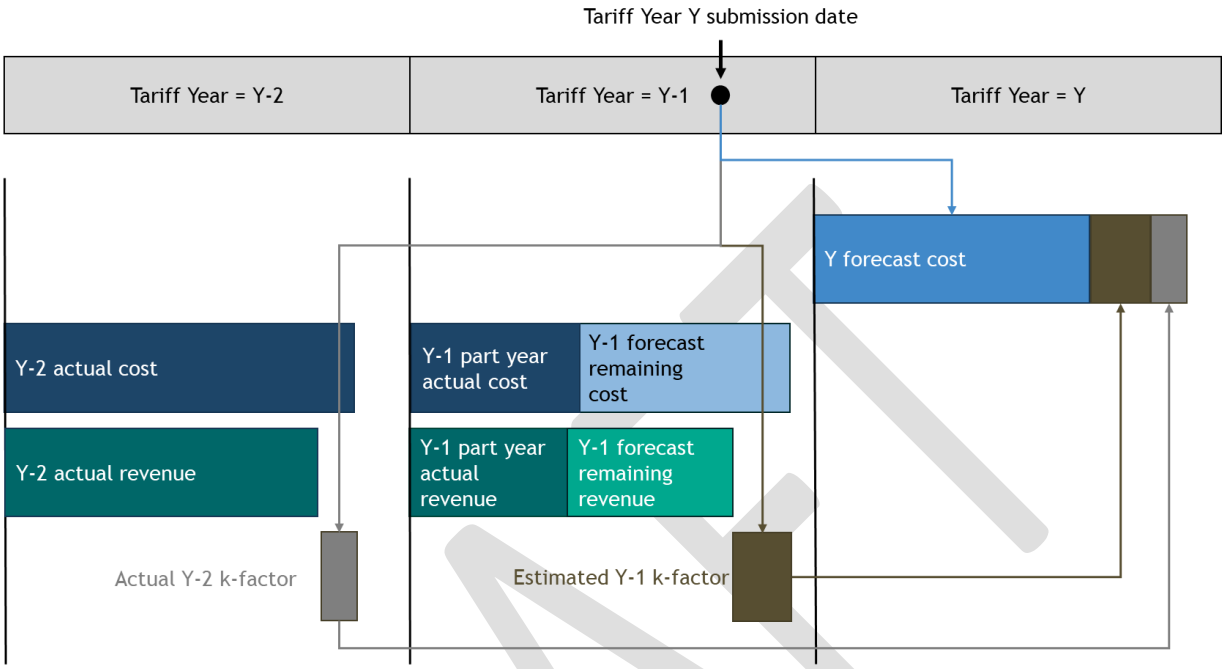

Figure 3 Conceptual application of the k-factor from years Y-1 and Y-2 to costs to be recovered in year Y

Compensation Payments, payable to the TSOs, will be charged for non-delivery by DASSA providers that have not met their commitment obligation. Any such amounts received by the TSOs in year Y will be netted off the actual costs used in calculating the k-factor for that year.

The k-factor will be included in the All-Island System Services Charge Submission for review by the Regulatory Authorities.

10.2.4 Forecast Demand

The All-Island Demand Forecast prepared by the TSOs for the Market Operator tariffs will be used in setting the All-Island System Services Charge. This aligns with other market charges, for example the Imperfections Charge, which also use the All-Island Demand Forecast.

10.3 Calculation and Settlement of the All-Island System Services Charge

10.3.1 All-Island System Services Charge for Supplier Units

The All-Island System Services Charge Rate is levied on the loss-adjusted metered quantity of Supplier Units (QMLF) as defined within the SEM Trading and Settlement code. The All-Island System Services Charge owed by Suppliers in respect of their Supplier Units will be calculated on an Imbalance Settlement Period basis, i.e., the All-Island System Services Charge for Supplier Unit v in Imbalance Settlement Period γ will be

All-Island System Services Charge$v\gamma$ (€) = QMLF$v\gamma$ (MWh) × All-Island System Services Charge Rate (€/MWh) × FCSSγ

Here, QMLF$v\gamma$ is the Loss-Adjusted Metered Quantity for Supplier Unit v in Settlement Period γ. This has units of MWh. Where QMLF$v\gamma$ is negative, the QMLF$v\gamma$ shall be set to zero in the calculation of the All-Island System Services Charge to prevent a payment to the Supplier.

FCSSγ represents the System Services Charge Factor. By default FCSSγ will be set to 1 at the start of each tariff year, but may be altered for a Within Year Adjustment, as described in Section 910.4.

EirGrid and SONI will each calculate the All-Island System Services Charge for each Supplier Unit in their jurisdiction.

10.3.2 Calculation of the All-Island System Services Charge in a Charging Period

The All-Island System Services Charge will be recovered over a Charging Period CP, and for a Supplier Unit v will be:

$$\text{All} - \text{Island System Services Charge}_{v\text{CP}} = \sum_{\gamma \in \text{CP}} \text{All} - \text{Island System Services Charge}_{v\gamma}$$

10.3.3 Settlement Timing

The settlement timeframes for payment of the All-Island System Services Charge are to be the same as the existing TUoS timeframes that are employed by each TSO, being a calendar month.

The TUoS settlement timeframes are contained in SONI's Supplier TUoS agreement[19] and in EirGrid's General Conditions of Connection and Transmission Use of System[20,21].

10.4 Cashflow Risk and Deficits

Cashflow imbalances may arise because the All-Island System Services Charge Rate is set in advance based on forecasts of cost and demand and because the All-Island System Services Charge Rate is set on an annual basis while DASSA settlement occurs monthly and will vary based on auction outcomes in that month.

To help manage cashflow imbalances, the TSOs will maintain a working capital facility. The size of this facility will be determined through the relevant regulatory processes in each country.

In addition, a Within Year adjustment to the All-Island System Services Charge Rate may occur, if anticipated costs are being under or over recovered. In this instance, the TSOs will submit a Within Year Adjustment proposal to the Regulatory Authorities for consideration and approval, which will set out the Adjusted All-Island System Services Charge Rate.

A notice period would apply for implementation of a Within Year Adjustment, which would allow for the notice that Suppliers are required to give their customers prior to the introduction of price changes.

A Within Year adjustment can occur at any time within the Tariff Year but as a minimum, a review should be carried out at the mid-year point.

In addition, the SEM Committee has indicated that they will implement a quarterly adjustment mechanism. This mechanism is expected to trigger minor adjustments in cases where deviations are within an upper and lower bound.[22] This will also be given effect through the All-Island System Services Charge Factor. This mechanism was not proposed by the TSOs in their consultation paper and the TSOs are currently exploring the practical implementation of it with the RAs.

While the mechanisms set out in SEM 25 007 are intended and expected to manage any cashflow imbalance, it is still necessary that there be a backstop mechanism in the event of an unmanageable shortfall. In such circumstances the TSOs will temporarily reduce payments to System Service Providers on a pro rata basis (applicable processes are set out in Section 14 Settlement of the Code).[23]

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[19] https://cms.soni.ltd.uk/sites/default/files/media/Supplier-TUOS-Agreement-Template.pdf
[20] General Conditions of Connection and Transmission Use of System
[21] Payment to System Service Providers will occur after the All-Island System Service Charge has been collected from Suppliers for their Supplier Units, to reduce cash flow risks. Therefore, DASSA settlement and All-Island System Service Charge settlement dates will be offset, so that DASSA settlement occurs after the two dates for which Suppliers pay the All-Island System Service Charge.
[22] These bounds are to be specified in the legal drafting process.
[23] Equivalent provisions exist for Market Operator payments in TSC Section F.22.3 Payment Deferral.

Suppliers will be required to provide credit cover for the All-Island System Services Charge, as described in Section [TBD].

11 Long Term Contracts

12 Delivery - Performance Monitoring

13 Migration to FASS for Existing DS3 Contracts

14 Settlement

15 Approvals

Programme Board Approval Date	Programme Board Attendees:
	•

16 Glossary

16.1 Acronyms

Acronym	Meaning
BM	Balancing Market
DAM	Day Ahead Market
DASSA	Day Ahead System Services Auction
DS3	Delivering a Secure Sustainable Electricity System
DSU	Demand Side Unit

Acronym	Meaning
EBGL	Electricity Balancing Guideline
FASS	Future Arrangements for System Services
FFR	Fast Frequency Response
FPN	Final Physical Notification
HLD	High-Level Design
IDA (1,2,3)	Intraday Day Ahead
LSAT	Look Ahead Stability Tool
LTS	Long-Term Scheduling
MW	Megawatt
NI	Northern Ireland
POR	Primary Operating Reserve
QMLF	Loss-Factored Metered Quantity
RAD	Residual Availability Determination
RAs	Regulatory Authorities
ROI	Republic of Ireland
SEM-C	Single Electricity Market Committee
SIR	Synchronous Inertial Response
SLA	Service Level Agreement
SNSP	System Non-Synchronous Penetration
SOR	Secondary Operating Reserve
SSRP	Steady State Reactive Power
TOR (1,2)	Tertiary Operating Reserve
TSO	Transmission System Operator

16.2 Definitions

Term	Definition
Aggregated Supply Function	The combination of all units' individual supply functions.

Term	Definition
Applicant	A person whose application to accede to the Code has been submitted and is being processed by the TSOs
Availability Performance Scalar	A Performance Scalar to incentivise a unit to maintain availability for the volume in its Confirmed DASSA Order. This Performance Scalar is applicable to Confirmed DASSA Order payments (i.e. not applicable to RAD Assignments) over some period. This Performance Scalar will not be applied where a unit cannot maintain availability to fulfil its Confirmed DASSA Order as a result of the TSOs' BM or dispatch actions.
Balancing Capacity	Defined by Article 2 of the EBGL as a balancing service in which a provider has agreed to hold capacity in reserve to potentially provide balancing energy.
Central Trading Platform	A centralised trading platform to facilitate the secondary trading of DASSA Orders and the monitoring of these trades.
Clearing	Sorting and stacking of offers to determine the price to be paid to units awarded DASSA Orders. Results in a single clearing price to be paid uniformly (per unit of volume) for each winning bid .
Compensation Payment	A payment from a DASSA Order Holder to the TSOs for failing to be in a position to provide the volume in its DASSA Order i.e., their FPN is incompatible with meeting the DASSA Order.
Confirmed DASSA Order	An FPN-compatible DASSA Order that is remunerated. It is also an operational commitment to provide that volume of System Services.
Continuous Provision	The provision of reserve services across consecutive time scales (FFR, POR, SOR and TOR1) by a common provider.
Daily Auctions	In this paper, refers to the Day Ahead System Services Auction (DASSA), which will be run after the Day Ahead Market (DAM) and before the first LTS.
DASSA Clearing Price	The marginal price for each System Service that will be paid for volumes in Confirmed DASSA Orders. It will also be the reference used for calculating compensation payments.
DASSA Orders	The volume of System Services and clearing price that a winning bidder has been assigned. It is a contractual requirement to submit a compatible FPN that allows the DASSA Order to be met as opposed to the procurement of actual supply of System Services.
DASSA Order Holder	Providers that have been awarded volume in the DASSA or subsequently bought a DASSA Order through secondary trading.
Default Price	The price assigned to a Final RAD Offer for a Providing Unit that has real-time availability (above its DASSA Obligation) to provide System Services, but has not submitted a RAD Offer.
Delivery	Adjusting the units' energy production or consumption in response to being triggered or called upon by the TSOs in relation to a given System Service.
DSO Operator	The role of verifying data provided by System Services Provider as part of their qualification application.

Term	Definition
Event Performance Scalar	A Performance Scalar to evaluate a unit's response to frequency deviations, utilising existing performance monitoring methods. This scalar is applicable to payments associated with Confirmed DASSA Orders and RAD Assignments.
Eventual Supply	The total volume of System Services available in real-time.
Final RAD Offer	A set of price-quantity pairs determined by the TSOs for use in the RAD clearing algorithm in respect of a Providing Unit.
Frequency Event	A Frequency Event is an event where the Transmission System Frequency falls below, or rises above, pre-defined frequency thresholds.
Full Activation Time (FAT)	The time in which FFR response must be fully activated.
Layered Procurement	The competitive procurement of System Services in the medium timeframe (anytime, up to one year).
Long-Term Contracts	Multi-year agreements that offer delivery payments for System Services at the DASSA-determined prices, along with an availability commitment offered in return for a fixed available fee.
Long-Term Scheduling (LTS)	The TSOs' software used to provide indicative commitment decisions (i.e., which units should be on-line or off-line) up to the end of the Trading Day or the next Trading Day depending on the timing of the LTS run.
Merit Order	In this paper, the ranking of bids ordered by price, then at random.
Order Book	A centralised list of buy and sell orders organised by price levels.
Performance Scalar	Scalars are multiplying factors applied to unit's payments. Performance Scalars are applied to reward and incentivise high levels of performance and to ensure lower payments for a lower level of performance.
Phased Implementation Road Map (PIR)	
Procurement Period	Means the period commencing at 23:00 each day and ending at 23:00.
Providing Unit	Includes Generator Units (as defined in the TSC), Generation Units (as defined in the Grid Codes), demand side units and System Service providers that form part of the scheduling and dispatch process.
RAD Offer	A set of price-quantity pairs in respect of a Providing Unit that indicates its willingness to be cleared in the RAD.
RAD Order	The volume of System Services and clearing price that a winning Providing Unit has been assigned from the RAD.
Residual Availability Determination	An ex-post process to bridge any gap between the availability of System Services via DASSA Orders from the DASSA and Secondary Trade, and the real-time system requirements.
Service Level Agreement	Conditions on how fast a process should be.
Service Provider Approver	The role of approving Party, Unit and qualification submissions party.

Term	Definition
Service Provider Operator	The role of entering data and uploading documentation on behalf of System Service Provider.
Supply	Being available to deliver additional energy when if triggered or called upon by the TSOs.
Supply Function	A schedule specifying the volume that a unit would be willing to supply at a given unit price, defined by price/quantity pairs specified by the unit in its bid.
Trading Period	Means the period commencing each day for a 30-minute period.
TSO Administrator	The role of entering configuration parameters and make data corrections.
TSO Approver	The role of approving qualification applications, DASSA results, RAD results, settlement closure and to change application status.
TSOs Mix Preferences	A rule or objective function to express the TSOs' preferences when determining the volume mix of qualities/ bundled services.
TSO Operator	The role of managing qualification/registration data and run RAD, DASSA and Settlement processes.
TSO User	Applies to TSO Administrator, TSO Approver and TSO Operator
Zone	Includes location and jurisdiction of Units.

17 Appendices