Single Electricity Market (SEM)

Trading and Settlement Code

SEM Operational Parameters 2025 Decision Paper

SEM-24-072

29 October 2024

Table of Contents

1. Introduction

Under the terms of the SEM Trading and Settlement Code (TSC) Part B, the Regulatory Authorities (RAs) shall determine certain parameters proposed by the Market Operator (MO) and the Transmission System Operators (TSOs; EirGrid and SONI), as applicable, in relation to the calculation and treatment of participants' Required Credit Cover and in relation to the calculation of Uninstructed Imbalances.

In May 2024 therefore, the RAs requested SEMO and the TSOs to review the parameters utilised in the calculation of Required Credit Cover and Uninstructed Imbalances.

On 5 July 2024, the RAs received reports from SEMO and the TSOs (SEM-24-053a and SEM-24-053b)[1] outlining their recommendations for the proposed values for the above parameters. The RAs subsequently published a consultation paper (SEM-24-053), requesting the view of market participants on SEMO's and the TSOs' recommendations.

This paper presents the RAs' decision in relation to the operational parameters consulted on, and is structured as follows:

Section 2: identifies the Credit Cover parameters that were reviewed by SEMO, summarises the stakeholder response to the consultation and details the SEM Committee decision on the 2025 values for these parameters.

Section 3: identifies the SEM Uninstructed Imbalances parameters that were reviewed by the TSOs, summarises the stakeholder response to the consultation and details the SEM Committee decision on the 2025 value for this.

Section 4: outlines next steps.

[1] SEM-24-053a was SEMO's recommendation report on Credit Cover parameters; SEM-24-053b was the TSOs' recommendation report for parameters used in the calculation of Uninstructed Imbalances

2. Parameters for the Determination of Required Credit Cover

2.1 Overview

The TSC sets out the rules for the calculation of Required Credit Cover for Participants. The calculation recognises that the Required Credit Cover for each Participant is made up of known and unknown exposures. The known exposure is based on invoiced amounts and published Settlement values. The unknown exposure, called the Undefined Exposure, is based on statistical analysis of known historical values of Settlement or Pricing. New or Adjusted participants, those whose historical values of Settlement are unknown or not reflective of current levels of trade, have their Required Credit Cover calculated using forecast volumes against prices calculated from known prices, while Standard Participants have their Required Credit Cover calculated using known Settlement values.

In each of these calculations, and in the day-to-day Credit Assessment process, a number of parameters are used. Under paragraph G.10.1.1 of the TSC, the Market Operator is required to "report to the RAs at least four Months before the start of the Year", proposing values for the parameters for the determination of Required Credit Cover. These parameters are listed below:

- the Fixed Credit Requirement;
- the Historical Assessment Period;
- the Analysis Percentile Parameter;
- the Credit Cover Adjustment Trigger;
- the Warning Limit; and
- the Breach Limit.

The RAs also requested SEMO to report on, and propose a value for, the Undefined Exposure Period parameter. All of these parameters are explained below:

I. **Fixed Credit Requirement Parameter (FCR_{py}):** This sets out the value of the Required Credit Cover that must be in place for each registered Supplier Unit or Generator Unit. A value will be required for all trading unit types, including Assetless Traders.

II. **Number of Days in the Undefined Exposure Period g ($UEPBD_g$):** The number of days in the Undefined Exposure Period, g, the period for which settlement amounts are not known, but where participants are incurring, or could incur, further liability until they are removed from the market.

III. **Number of days in the Historical Assessment Period (DINHAP):** The number of days in the Historical Assessment Period is the number of days prior to the day of the issue of the latest relevant Settlement Document over which a statistical analysis of a Participant's incurred liabilities shall be undertaken in order to support the forecasting of undefined liabilities for that Participant. This will be the number of historical days over which the analysis quantities, prices, or settlement values will be carried out for the purposes of forecasting values for the calculation of exposure over the Undefined Exposure Period, eventually used to determine the level of Required Credit Cover for each participant.

IV. **Analysis Percentile Parameter (AnPP):** This is the z-score value taken from the standard normal distribution that determines the percentile confidence value that the Actual Exposure for each Participant, once determined, will fall below the estimate of the Undefined Potential Exposure.

V. **Credit Cover Adjustment Trigger:** The expected percentage change in future generation or demand that leads a participant to report to SEMO that it should become an Adjusted Participant rather than a Standard Participant and have its Credit Cover requirements calculated from its forecasts of future demand or generation.

VI. **Level of Warning Limit:** If the ratio of a Participant's Required Credit Cover to its Posted Credit Cover exceeds the value of this parameter a Warning Notice will be sent to the Participant.

VII. **Level of Breach Limit:** If the ratio of a Participant's Required Credit Cover to its Posted Credit Cover exceeds this value a Credit Cover Increase Notice is issued, which will require remedy by the Participant, including by posting additional Credit Cover.

2.2 SEMO's Proposals

SEMO's report (SEM-24-053a) reviews the values that these parameters have been set to since Go-Live of the revised SEM arrangements in 2018. SEMO proposed no changes to the Required Credit Cover parameters for the 2025 calendar year. In 2023 the Number of Days in the Historical Assessment Period (DINHAP) was changed to 60 for SEM year 2024. This parameter had previously been set to a value of 100 days since 2018.

SEMO proposed to maintain the value of DINHAP at 60 days due to the volatility that the market has seen in the last few years. From the analysis presented by SEMO in their report, the Undefined Exposure values and the Credit Assessment Price are similar for DINHAP values of 60 days and 100 days when prices are stable. However, when prices become volatile, a larger DINHAP reacts more slowly to sudden changes.

Table 1 summarises SEMO's proposed values for the Credit Cover parameters for 2025.

Parameter	2024 SEM Current Values	2025 SEM Proposed Values
Fixed Credit Requirement (FCR_{py}) for Generator Units	€5,000	€5,000
Fixed Credit Requirement ($FCR_{py)}$ for Supplier Units	Based on a rate of €8.77/MWh of average daily demand subject to a minimum value of €1,000 and a maximum of €15,000	Based on a rate of €8.77/MWh of average daily demand subject to a minimum value of €1,000 and a maximum of €15,000
Number of Days in the Undefined Exposure Period for each Undefined Exposure Period, g, $UEPBD_g$	7	7
Number of days in the Historical Assessment Period, DINHAP	60 Days for Trading and Capacity	60 Days for Trading and Capacity
Analysis Percentile Parameter, AnPP	1.645	1.645
Credit Cover Adjustment Trigger	30%	30%
Level of the Warning Limit	80%	80%
Level of the Breach Limit	100%	100%

Table 1: Credit Cover Parameters – approved values for 2024 and proposed values for 2025

2.3 Respondent's Comments

General Overview

The SEM Committee received one response to the consultation, from ESB Generation and Trading (ESB GT, SEM-24-072a). ESB GT agreed with the proposed values for the Credit Cover parameters contained within the consultation paper.

Summary of Response

No objections were raised by the respondent regarding the proposed values for the Credit Cover parameters.

2.4 SEM Committee Response

Having evaluated SEMO's submission, and with no objections being raised by participants, the SEM Committee's decision is that the values for Credit Cover parameters shall remain unchanged for 2025.

2.5 SEM Committee Decision

A summary of the decisions made by the SEM Committee in relation to the Credit Cover parameters for 2025 are displayed in Table 2.

Parameter	2025 SEM Proposed Values	SEM Committee Decision for 2025
Fixed Credit Requirement (FCR_{py}) for Generator Units	€5,000	€5,000
Fixed Credit Requirement (FCR_{py}) for Supplier Units	Based on a rate of €8.77/MWh of average daily demand subject to a minimum value of €1,000 and a maximum of €15,000	Based on a rate of €8.77/MWh of average daily demand subject to a minimum value of €1,000 and a maximum of €15,000
Number of Days in the Undefined Exposure Period for each Undefined Exposure Period, g, $UEPBD_g$	7	7
Number of days in the Historical Assessment Period, DINHAP	60 Days for Trading and Capacity	60 Days for Trading and Capacity
Analysis Percentile Parameter, AnPP	1.645	1.645
Credit Cover Adjustment Trigger	30%	30%
Level of the Warning Limit	80%	80%

Parameter	2025 SEM Proposed Values	SEM Committee Decision for 2025
Level of the Breach Limit	100%	100%

Table 2: Credit Cover Parameters – proposed and approved values for 2025

3. Parameters for the calculation of Uninstructed Imbalances

3.1 Overview

Under section F.9.1 of Part B of the SEM TSC, the TSOs are required to report to the Regulatory Authorities proposing parameters to be used in the calculations of Uninstructed Imbalance Quantities and Charges at least four months before the start of the Trading Year if so requested by the Regulatory Authorities. These parameters are listed and explained below:

- **MW Tolerance (TOLMW)** and **Engineering Tolerance, (TOLENG)**. These parameters set a tolerance between a unit's Dispatch Quantity and Metered Quantity within which a unit is deemed to be complying with Dispatch Instructions. Output within this tolerance band does not give rise to Uninstructed Imbalance Charges. At nominal system frequency, the tolerance band which is used in the calculation of Uninstructed Imbalances is the maximum of:

  - the Engineering Tolerance (where $0 \leq TOLENG \leq 1$) multiplied by the Dispatch Quantity; and
  - the MW Tolerance for each Trading Day, t, (where $0 \leq TOLMW_t$).

- The **Discount for Over Generation Factor** ($FDOG_{uy}$) and the **Premium for Under Generation** ($FPUG_{uy}$) are the parameters which form the basis for the Uninstructed Imbalance Charges. The basis for the charges is a fraction of the price at which the unit would be settled for the volume which was outside of the tolerance band around their instructed dispatch level. The Discount for Over

Generation and the Premium for Under Generator Factors are the fractions which are applied to the price to determine the additional charge for this volume.

- **System per Unit Regulation Factor (FUREG)** is the parameter that reflects the response rate of a generator resulting from its governor droop settings as it varies with system frequency, which is used to calculate the Tolerance for Under Generation and the Tolerance for Over Generation in the calculation of Uninstructed imbalances.

3.2 TSOs' Proposals

The TSOs proposed two parameter values for 2025 which are different to 2024. These are:

- A new separate Engineering Tolerance (TOLENG) for wind and solar units only; and
- Discount for Over Generation Factor, $FDOG_{uy}$, (except for Interconnector Error Units).

There is currently only one TOLENG value under the TSC, applicable to all units to which TOLENG applies. The TSOs proposed a separate value of TOLENG for wind and solar units to be used if a separate TOLENG value applicable only to wind and solar units is introduced under the TSC in future.

The TSOs' analysis of NI and ROI wind and solar data from 2022, 2023 and 2024 (to date) showed that increasing TOLENG from 0.01 to 0.084 for these units would decrease the total Uninstructed Imbalance charge by approx. 15%, decreasing from €11.6m to €9.9m in total. The impact decreases with each year, likely due to the decreasing Imbalance Price over this timeframe.

For Discount for Over Generation Factor, $FDOG_{uy}$, the TSOs recommended increasing the value from 0.2 to 0.25. The TSOs provided the rationale that there have been significantly higher volumes of over generation than under generation in recent years and all uninstructed imbalances create a cost to the system, and so increasing the Discount for Over Generation Factor will incentivise improved behaviour.

Table 3 summarises the TSOs' proposed values for the Uninstructed Imbalance parameters for 2025.

Parameter	2024 SEM Current Values	2025 SEM Proposed Values
TOLMW MW Tolerance	1	1
TOLENG Engineering Tolerance, except for Wind and Solar Units	0.01	0.01
TOLENG Engineering Tolerance for Wind and Solar Units	0.01	0.084
$FPUG_{uy}$ Premium for Under Generation Factor, except for Interconnector Error Units	0.2	0.2
$FPUG_{uy}$ Premium for Under Generation Factor for Interconnector Error Unit	0	0
$FDOG_{uy}$ Discount for Over Generation Factor except for Interconnector Error Units	0.2	0.25
$FDOG_{uy}$ Discount for Over Generation Factor for each Interconnector Error Unit	0	0
FUREG System per Unit Regulation Factor	0.4	0.4

Table 3: Uninstructed Imbalance parameters – approved values for 2024 and proposed values for 2025

3.3 Respondent's Comments

General Overview

The SEM Committee received one response to the consultation, from ESB Generation and Trading (ESB GT, SEM-24-072a). ESB GT agreed with the proposed values for the Uninstructed Imbalance parameters contained within the consultation paper.

Summary of Response

In their response ESB GT noted that setting TOLENG at 8.4% of Dispatch Quantity for wind and solar units acknowledges the unique challenges that operators of these units face when following Dispatch Instructions issued by the TSOs, while providing sufficient incentive (via exposure to uninstructed imbalance charges) to operate efficiently. The respondent highlighted that more information on the results of the TSOs' modelling of ramping and Uninstructed Imbalances for assets of different sizes and technology would bring greater clarity as to the appropriateness of the proposed 8.4% TOLENG value.

ESB GT also agreed that the proposed increase in FDOG to 0.25 would provide sufficient incentive for generators to reduce instances of over generation.

3.4 SEM Committee Response

Having considered the response to this consultation and evaluated the TSOs' submission, the SEM Committee's decision is that the values for Uninstructed Imbalance parameters will be as outlined in the TSOs' report.

The SEM Committee notes that any changes to a participant's uninstructed imbalance parameters will not replace any Grid Code requirements subject to TSO performance monitoring. A Users' Plant will remain subject to monitoring requirements as per Grid Code section OC.10 "Monitoring, Testing and Investigation". The participant must remain compliant with instruction from the TSO as per the requirements outlined in SDC2 "Scheduling and Dispatch Code2". Additional clarity will be included in the Grid Code as part of the Grid Code Modification MPID 320 on Non-Priority Dispatch Renewables (NPDR), subject to regulatory approval. All technology level changes to uninstructed imbalance parameters will be implemented with system changes being implemented as part of the NPDR, Scheduling and Dispatch Programme workstream.

3.5 SEM Committee Decision

A summary of the decisions made by the SEM Committee in relation to the parameter values to be used in 2025 in the calculations of Uninstructed Imbalance Quantities and Charges are summarised in Table 4 below.

Parameter	2025 SEM Proposed Values	SEM Committee Decision for 2025
TOLMW MW Tolerance	1	1
TOLENG Engineering Tolerance, except for wind and Solar Units	0.01	0.01
TOLENG Engineering Tolerance for wind and Solar Units	0.084	0.084
$FPUG_{uy}$ Premium for Under Generation Factor, except for Interconnector Error Units	0.2	0.2
$FPUG_{uy}$ Premium for Under Generation Factor for Interconnector Error Unit	0	0
$FDOG_{uy}$ Discount for Over Generation Factor except for Interconnector Error Units	0.25	0.25
$FDOG_{uy}$ Discount for Over Generation Factor for each Interconnector Error Unit	0	0
FUREG System per Unit Regulation Factor	0.4	0.4

Table 4: Uninstructed Imbalance parameters – proposed and approved values for 2025

4. Next Steps

These parameters will apply from 1 January 2025 until at least 31 December 2025. A consultation will be carried out in 2025 to determine the values to apply from January 2026, as required. The Trading and Settlement Code provides for the RAs amending the values of parameters where necessary outside the normal parameter-setting process. While this would only arise in exceptional circumstances, the RAs have an obligation to balance regulatory certainty with ensuring that no unnecessary consumer harm arises. On this basis, the RAs will keep all parameters under observation and may propose changes in the interim, if necessary, via consultation.