Single Electricity Market
(SEM)

Trading and Settlement Code

SEM Operational Parameters Consultation 2022

SEM-21-067

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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 TSOs, as applicable, in relation to the calculation and treatment of participants' Required Credit Cover and matters related to Imbalance Settlement.

In June 2021 therefore, the RAs requested SEMO to review the parameters utilised in the calculation of Required Credit Cover and of the Price Materiality Threshold. The RAs also requested the TSOs to review the parameters utilised in the calculations related to Uninstructed Imbalances.

On 19 August 2021, the RAs received reports from SEMO and the TSOs outlining their recommendations for the proposed values for the above parameters. The purpose of this consultation paper is to invite comments on the SEMO and TSOs proposals as summarised in this paper and detailed within the reports from SEMO and the TSOs which are published alongside it.

Comments should be sent by close of business on 17 September 2021 in electronic form to: TSC@cru.ie and karen.shiels@uregni.gov.uk.

All responses received will be provided to SEMO or the TSOs as appropriate and may be published unless the respondent clearly indicates that their response is confidential.

2. Parameters for the Determination of Required Credit Cover

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 and explained below:

I. **Fixed Credit Requirement Parameter (FCRyp):** 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. **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, or have the ability of, incurring 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.

SEMO's report (SEM-21-067a), which is published alongside this consultation paper, reviews the values that these parameters have been set to since Go-Live of the revised SEM arrangements. SEMO propose to make no changes to the Required Credit Cover parameters for the 2022 calendar year, with the exception of the Analysis Percentile Parameter. This parameter has previously been set to a value of 1.96, while SEMO propose to change this to a value of 1.645 for the 2022 calendar year.

This proposed change to the Analysis Percentile Parameter value is to reflect credit cover calculations more accurately. A value of 1.645 implies a confidence level of 95% based on a one-tailed statistical test, which is considered more appropriate in the context of credit cover calculations. Further details of the rationale for the proposed change to the Analysis Percentile Parameter are set out in SEMO's report (SEM-21-067a).

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

Parameter	Approved Value for 2021	SEMO's Proposed Value for 2022
Fixed Credit Cover Requirement for Generator Units	€5,000	€5,000
Fixed Credit Cover Requirement 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 €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

Historical Assessment Period	100 Days	100 Days
Number of days in the Undefined Exposure Period, g, (UEPBDg)	9 Days	9 Days
Analysis Percentile Parameter	1.960	1.645
Credit Cover Adjustment Trigger	30%	30%
Warning Limit	80%	80%
Breach Limit	100%	100%

Table 1: Credit Cover Parameters – approved values for 2021 and proposed values for 2022

3. Uninstructed Imbalance Parameters

Uninstructed Imbalances apply in the SEM when the Actual Output of a Generator Unit deviates from its Dispatch Quantity in a Trading Period. Under paragraph F.9.1.2 of the TSC, if requested by the Regulatory Authorities, the System Operators shall report to the Regulatory Authorities at least four months before the start of the Year, proposing values for the parameters to be used in the calculation of Uninstructed Imbalances for that Year. The TSO's report (SEM-21-067b), which is published alongside this consultation paper, reviews the parameters used in the calculation of Uninstructed Imbalance Quantities and Charges.

These parameters are as listed and explained below:

I. **Engineering Tolerance (TOLENG) and MW Tolerance (TOLMWt):** 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:
   a. the Engineering Tolerance (where 0 ≤ TOLENG ≤ 1) multiplied by the Dispatch Quantity; and
   b. the MW Tolerance for each Trading Day, t, (where 0 ≤ TOLMWt).

II. **The Discount for Over Generation Factor (FDOGuy)** and the **Premium for Under Generation (FPUGuy)** 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.

III. **System per Unit Regulation Factor (FUREG)** is the parameter reflecting the automatic response of a generating unit to variations in the system frequency which is used in the calculation of the Tolerance for Over Generation and the Tolerance for Under Generation used in the determination of Uninstructed Imbalance Charges.

The TSOs propose to make no changes to these values for 2022, as summarised in Table 2 below.

Parameter	Approved Value for 2021	TSOs' Proposed Value for 2022
Engineering Tolerance	0.01 (1%)	0.01 (1%)
MW Tolerance for each Trading Day	1 MW	1 MW
System per Unit Regulation Factor	0.04 (4%)	0.04 (4%)
Discount for Over Generation Factor for each Generator Unit	0.2	0.2
Discount for Over Generation Factor for each Interconnector Error Unit	0	0
Premium for Under Generation Factor for each Generation Unit	0.2	0.2
Premium for Under Generation Factor for each Interconnector Error Unit	0	0

Table 2: Uninstructed Imbalance Parameters – approved values for 2021 and proposed values for 2022

4. Price Materiality Threshold

The Price Materiality Threshold refers to the threshold, approved from time to time by the Regulatory Authorities under paragraph B.19.3.1(b) of the TSC, which is applied in the event of a Pricing Dispute or where a manifest error is identified by the Market Operator for the purpose of Repricing.

The Price Materiality Threshold tests when a change to input data as a result of an upheld dispute causes a change in the price greater than the threshold. If the Price Materiality

Threshold is exceeded, the price is recalculated and included in a Settlement re-run. SEMO propose to make no changes to the value of this parameter for 2022 in their report (SEM-21-067c). This is summarised in Table 3 below.

Parameter	Approved Value for 2021	SEMO's Proposed Value for 2022
Price Materiality Threshold	5%	5%

Table 3: Price Materiality Threshold – approved value for 2021 and proposed value for 2022.

5. Next Steps

Responses to this consultation paper should be sent to TSC@cru.ie and karen.shiels@uregni.gov.uk by the close of business on 17 September 2021.

All responses received will be provided to SEMO or the TSOs as appropriate and may be published unless the respondent clearly indicates that the response is confidential.

A final decision on the parameters consulted on in this paper will be published in Q4 2021.