



Single Electricity Market Committee

**Trading & Settlement Code
Annual Operational Parameters for 2018**

Consultation Paper

SEM-17-072

19 September 2017

Introduction

The SEM Trading and Settlement Code (the Code) specifies that the Market Operator (SEMO) and the System Operators (TSOs) shall make reports to the Regulatory Authorities (RAs) proposing values for four groups of parameters used in the settlement systems for each Year at least four months before the start of that Year. The groups of parameters concerned are:

1. Parameters for the determination of Required Credit Cover¹ (SEMO);
2. MSP Software Penalty Cost Parameters² (SEMO);
3. Parameters used in the calculation of Uninstructed Imbalances³ (TSOs); and
4. Flattening Power Factor⁴ (TSOs).

The RAs have received the reports from SEMO and the TSOs in respect of the values they propose should apply for the Year 2018. Because of the go-live of the I-SEM arrangements on 23 May 2018, these values will only apply from 1 January 2018 until I-SEM go-live.

These reports are attached to this paper. The purpose of this consultation is to seek views from interested parties on the proposals from SEMO and the TSOs.

The SEM Committee welcomes all comments on the proposals set out in the attachments to this paper. The remainder of this paper contains a summary of the proposals. Respondents should review the attached reports which contain the analysis carried out (where relevant) by SEMO and the TSOs, rather than relying on this summary.

Comments should be sent, preferably in electronic form, to:

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

All comments should be received by close of business on Monday, 16 October 2017.

¹ See paragraph 6.174 of the Code

² See paragraph N.25 of the Code

³ See paragraph 4.142 of the Code

⁴ See paragraph M.30 of the Code

1. Parameters for the determination of Required Credit Cover

These are parameters which must be proposed by SEMO. SEMO's report addressed the values that should apply for the following parameters in 2018:

- the Fixed Credit Requirement – this sets the value of Required Credit Cover that must be in place for each registered Supplier Unit or Generator Unit in the SEM in order to meet resettlement charges that may arise up to 13 months after the initial settlement.
- the Historical Assessment Period for the Billing Period – this sets the number of historical days over which the analysis of Trading Payments and Trading Charges will be carried out for credit purposes.
- the Historical Assessment Period for the Capacity Period – this sets the number of historical days over which the analysis of Capacity Payments and Capacity Charges will be carried out for credit purposes.
- the Analysis Percentile Parameter – this sets the percentile confidence value in the statistical analysis used for New, Adjusted and Standard Participants.
- the Credit Cover Adjustment Trigger – a Participant will be classed as an Adjusted Participant under the Code if the Participant's trade volumes increase or decrease by a percentage greater than this value.

The values of these parameters in 2017 and those proposed by SEMO for 2018 are shown in the table below:

Credit Cover Parameter	2017 Approved Value	2018 Proposed Values
Historical Assessment Period for Billing Period	100 days	100 days
Historical Assessment Period for Capacity Period	90 days	90 days
Analysis Percentile Parameter	1.96	1.96
Credit Cover Adjustment Trigger	30%	30%

Fixed Credit Requirement for Supplier Units based on rate of 8.77€/MWh of average daily demand subject to a minimum value of €1,000 and a maximum of €15,000	Min. of €1,000 with max. of €15,000	Min. of €1,000 with max. of €15,000
Fixed Credit Requirement for all Generator Units including Interconnector Units	€5,000	€5,000
Fixed Credit Requirement for Netting Generator Units	€1,000	€1,000

As detailed within SEMO's report, I-SEM Operational Parameters have already been determined based on modelling and analysis provided to the Regulatory Authorities using current SEM data. For this reason, SEMO have proposed that the current 2017 SEM Parameter values be persisted for 2018 without the requirement of providing further detailed analysis for the determination of 2018 SEM Parameters.

It should be noted that in previous years, SEMO reported that an Analysis Percentile Parameter of 1.96 corresponded to a percentile confidence value of 95%.

The Analysis Percentile Parameter is the percentage degree of statistical confidence that Actual Exposures, once determined for each Participant, will fall below the estimate of Undefined Potential Exposure. It is used a number of places throughout the Code, for example within 6.195 in order to calculate the Estimated Energy Price for the Undefined Exposure Period:

6.195 The Estimated Energy Price (EEP_g) for Undefined Exposure Period g shall be calculated as follows:

$$EEP_g = UMSMP_g + AnPP(SDSMP_g)$$

Where

1. UMSMP_g is the mean value of System Marginal Prices in the Historical Assessment Period for Billing Periods γ applied for the Undefined Exposure Period g;
2. AnPP is the Analysis Percentile Parameter function in effect to determine the amount that must be added to the mean value in order that the required

percentage of values shall fall below that value. The details of this function are defined in Agreed Procedure 9 “Management of Credit Cover and Credit Default”;

3. SDSMP_g is the standard deviation of the values of System Marginal Prices in the Historical Assessment Period for Billing Periods γ to be applied for the Undefined Exposure Period g .

During the development of the Operational Parameters to apply from I-SEM go-live, it became apparent that because the Estimated Energy Price is calculated as an upper limit, an Analysis Percentile Parameter of 1.96 actually corresponds to a confidence value of 97.5%, not 95% as previously understood.

2. MSP Software Penalty Cost Parameters

These are parameters which must be proposed by SEMO.

The core algorithm of the MSP Software attempts to optimise for a non-linear mixed integer constrained objective with non-linear constraints. On occasions the mathematical problem posed may be infeasible (i.e. there will be no solution which will satisfy every constraint). In these cases, rather than return no answer, it is customary in numerical solutions to produce an answer where one or more of the constraints has been breached slightly. To enable this “slack variables” are introduced with suitably chosen coefficients to ensure that these constraints are only breached in the case of infeasibility. The MSP Penalty Cost Parameters relate to:

- the Over-Generation MSP Constraint Cost – this is the parameter that sets the cost used by the MSP Software for reducing the generation to the level of demand;
- the Under-Generation MSP Constraint Cost – this is the parameter that sets the cost used by the MSP Software for increasing the generation to meet the demand;
- the Aggregate Interconnector Ramp rate MSP Constraint Cost – this is the parameter that sets the cost used by the MSP Software for breaching the Interconnector Ramp Rate;
- the Energy Limit MSP Constraint Cost – this is the parameter that sets the cost used by the MSP Software for breaching the Energy Limit constraints; and
- the Tie-Breaking Adder – this is the value used by the MSP Software for determining which of two tied Price/Volume pairs to use in the case of a tie.

The values of these parameters in 2017 and those proposed by SEMO for 2018 are shown in the table below:

MSP Software Penalty Cost Parameters	2017 value	2018 proposed
Over Generation MSP Constraint Cost	73	73
Under Generation MSP Constraint Cost	73	73
Aggregate Interconnector Ramp Rate Constraint Cost	292	292
Energy Limit MSP Constraint Cost	38	38
Tie-Breaking Adder	0.001	0.001
Maximum Export Available Transfer Capacity MSP Constraint Cost	100	100
Maximum Import Available Transfer Capacity MSP Constraint Cost	100	100

3. Parameters used in the calculation of Uninstructed Imbalances

These are parameters which must be proposed by the TSOs.

The TSOs' report addressed the values that should apply for the following parameters in 2018:

- Tolerance band around the Dispatch Quantity – These tolerances are designed to provide a band around the Dispatch Quantity to which a Generator Unit is dispatched. The tolerance band is the maximum of the MW tolerance and the Engineering Tolerance multiplied by the Dispatch Quantity
 - the Engineering Tolerance, ENGTOL (where $0 \leq \text{ENGTOL} \leq 1$)
 - the MW Tolerance for each Trading Day t , MWTOL t (where $0 \leq \text{MWTOL}t$);
- the System per Unit Regulation, UREG – this is the factor that reflects the automatic response of a generating unit to variations in the system frequency (the governor “droop” setting, which is normally 4%);
- the Discount for Over Generation – this is the element of the costs incurred by the generator when generating outside the tolerance band which it is not permitted to recover; and
- the Premium for Under Generation – this is the element of the saving incurred by the generator when generating below the tolerance band which it is required to repay.

The values of these parameters proposed by the TSOs for 2018 are shown in the table below and are identical to those for 2017.

Uninstructed Imbalance Parameters	2017 value	2018 proposed
Engineering Tolerance	0.01	0.01
MW Tolerance	1	1
System per Unit Regulation	0.04	0.04
Discount for Over Generation	0.20	0.20
Premium for Under Generation	0.20	0.20
Discount for Over Generation for Interconnectors Under Test	0	0
Premium for Under Generation for Interconnectors Under Test	0	0

Further information for these proposals is included in the attached recommendation report.

4. Flattening Power Factor

This is a parameter which must be proposed by the TSOs.

The TSOs see no reason to change the FPF from the current value of 0.35. Information on this proposal is included in the attached recommendation paper.