

Single Electricity Market Committee

**Trading & Settlement Code
Annual Parameters
for 2010**

Decision Paper

SEM-09-103

4th November 2009

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 proposing values for six 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. Settlement Recalculation Threshold² (SEMO);
3. MSP Software Penalty Cost Parameters³ (SEMO);
4. Annual Capacity Exchange Rate⁴ (SEMO);
5. Parameters used in the calculation of Uninstructed Imbalances⁵ (TSOs); and
6. Flattening Power Factor⁶ (TSOs).

On 16th September the Single Electricity Market (SEM) Committee published a Consultation Paper⁷ summarising the reports on these parameters that had been received from SEMO and the TSOs⁸ and sought view on their proposals. The Consultation Paper requested comments by 13th October 2009.

The Regulatory Authorities received one response (from NIE Energy Limited- Power Procurement Business), which has been circulated to SEMO and the TSOs, as appropriate.

The remainder of this paper sets out the proposals consulted upon and the comments received for each of the six groups of parameters and specifies the SEM Committee decision on the values that shall apply for 2010.

¹ See paragraph 6.174 of the Code

² See paragraph 6.77 of the Code. Note that the Code specifies that the Settlement Recalculation Threshold shall be proposed by the Market Operator “from time to time”, but it has become normal to review it annually.

³ See paragraph N.25 of the Code

⁴ See paragraph 4.96 of the Code

⁵ See paragraph 4.142 of the Code

⁶ See paragraph M.30 of the Code

⁷ SEM-09-097

⁸ The SEMO and TSOs reports were published at the same time.

1. Parameters for the determination of Required Credit Cover

SEMO's report addressed the values that should apply for the following parameters in 2010:

- the Fixed Credit Requirement for Generator Units and for Supplier Units – this is the amount of credit cover required to allow for payments that become due as a result of Settlement Reruns;
- the Historical Assessment Period for the Billing Period – this is the number of Settlement Days prior to the issue of the latest Settlement Statement for Energy Payments over which a statistical analysis of a Participant's incurred liabilities (in relation to Energy Payments) shall be undertaken to support the forecasting of the future Undefined Potential Exposure for that Participant;
- the Historical Assessment Period for the Capacity Period – this is the number of Settlement Days prior to the issue of the latest Settlement Statement for Capacity Payments over which a statistical analysis of a Participant's incurred liabilities (in relation to Capacity Payments) shall be undertaken to support the forecasting of the future Undefined Potential Exposure for that Participant;
- the Analysis Percentile Parameter – this is the factor that determines the expected probability that the Actual Exposure for each Participant, once determined, will fall below the estimate of Undefined Potential Exposure (a value of 1.96 is equivalent to 95% confidence);
- the Credit Cover Adjustment Trigger – this is the expected percentage change in future generation or demand which 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 on the basis of its forecasts of future demand or generation; and
- the level of the Warning Limit – this is the default level of the Warning Limit which will apply if a Participant Fails to set its own. The Warning Limit is a parameter used to trigger the issuing of a Warning Notice by SEMO to a Participants whose Credit Cover Requirement is approaching its Posted Credit Cover.

The values of these parameters in 2009 and those proposed by SEMO for 2010 are shown in the table below:

Credit Cover Parameter	2009 value	2010 proposed
Fixed Credit Requirement for Generator Units	€5,000	€5,000
Fixed Credit Requirement for Supplier Units	€30,000	€20,000
Historical Assessment Period for Billing Period	100 days	100 days
Historical Assessment Period for Capacity Period	100 days	90 days
Analysis Percentile Parameter	1.96	1.96
Credit Cover Adjustment Trigger	30%	30%
Warning Limit	75%	75%

Comments Received

PPB expressed the following views:

- PPB agrees with the rationale in setting the Historical Assessment Period for Capacity Period to 90 days for 2010.
- PPB agrees that the Fixed Credit Requirement for Supplier Units should be reduced to €20,000 for 2010.
- PPB agrees that the current Fixed Credit Requirement for Generator Units of €5,000 should be retained for 2010
- PPB agrees that the current Historical Assessment Period for Billing Period of 100 days should be retained for 2010.
- PPB agrees that the current Analysis Percentile Parameter of 1.96 should be retained for 2010.
- PPB agrees that the current Credit Cover Adjustment of 30% should be retained for 2010.
- PPB agrees that current Warning Limit of 75% should be retained for 2010.

SEM Committee Decision

Based upon the above, the SEM Committee has decided that the values for the Credit Cover Parameters for 2010 shall be as set out below (as proposed by SEMO):

Credit Cover Parameter	2010 value
Fixed Credit Requirement for Generator Units	€5,000
Fixed Credit Requirement for Supplier Units	€20,000
Historical Assessment Period for Billing Period	100 days
Historical Assessment Period for Capacity Period	90 days
Analysis Percentile Parameter	1.96
Credit Cover Adjustment Trigger	30%
Warning Limit	75%

2. Settlement Recalculation Threshold

SEMO's report addressed the value that should apply for the Settlement Recalculation Threshold in 2010. The Settlement Recalculation Threshold is a figure which mandates the Market Operator to do a re-run if the Schedule Quantities or prices for a Unit on its own, or for the SEM as a whole, are shown to be in error by more than this. The value determined for 2009 was 3%. SEMO recommended maintaining the same value for 2010.

Comments Received

PPB expressed the view that a balance between early resettlement of a material data error and the operational overhead has to be achieved. PPB agreed that the Settlement Recalculation Threshold of 3% should be retained for 2010.

SEM Committee Decision

Based upon the above, the SEM Committee has decided that the value for the Settlement Recalculation Threshold for 2010 shall remain at 3%.

3. MSP Software Penalty Cost Parameters

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.

SEMO proposed that the values of these parameters in 2010 should be the same as in 2009.

Comments Received

PPB stated that it had no reason to dispute SEMO’s analysis and therefore agreed that the existing values should be retained for 2010.

SEM Committee Decision

Based upon the above, the SEM Committee has decided that the values for the MSP Software Penalty Cost Parameters for 2010 shall be unchanged from those in 2009 as set out below:

MSP Software Penalty Cost Parameters	2010 value
Over-Generation MSP Constraint Cost	73
Under-Generation MSP Constraint Cost	73
Aggregate Interconnector Ramp rate MSP Constraint Cost	292
Energy Limit MSP Constraint Cost	38
Tie-Breaking Adder	0.001

4. Annual Capacity Exchange Rate

SEMO's report addressed the values that should apply for the Annual Capacity Exchange Rate in 2010. The proposed exchange rate was based upon the average SEM Bank forecast for 2010 of 0.8586 €/£. The value for 2009 was 0.7944 €/£.

Comments Received

PPB expressed the view that it agreed with the methodology proposed by SEMO to determine the appropriate Annual Capacity Exchange Rate. However, it did not agree with the calculated Exchange Rate value of 0.8586. This is determined based on a spot value of 0.8580 (which appears to coincide with the rate published by SEMO for the 12 – 14 July 2009 trading days). This is considerably lower than the current exchange rate (e.g. 0.9333 published by SEMO for 14 October 2009). If the 14 October 2009 value were used as the spot rate in the methodology an average value of 0.9339 would be calculated for 2010.

PPB added that it agreed with SEMO's methodology but believes the spot exchange rate used should be that applicable at the point the decision is made i.e. based on the rate prevailing closer to the period to which it applies.

Response to Comments

In preparing the T&SC Parameter reports this year, SEMO discussed the merits of raising a modification around the Annual Capacity Exchange Rate (ACER), as it was recognised that the obligations to provide a value four months before the start of the year (T&SC 4.29) obliges SEMO to propose a value which may be out of date by the time it is applied.

SEMO discussed this with the RAs who confirmed that they intend to look at the ACER as part of the CPM Medium Term Review, including whether it is appropriate to move to a monthly rate and the implications of so doing.

In addition, there was an open question concerning the relationship between the ACER submission deadline and the retail tariff timelines and the impact of setting the value closer to the beginning of the year e.g. one month before hand.

Given the above, SEMO did not suggest a change in the method of determination of the ACER for 2010. However, SEMO acknowledge the validity of PPB's point and would be happy to use a more recent exchange rate for the ACER for 2010, if the RAs determine that it is judicious. In addition, SEMO await the views to be expressed in the forthcoming CPM Medium Term Review consultation regarding the ACER, to determine if they should raise any modifications for the 2011 calculation.

SEM Committee Decision

As part of the CPM Medium Term Review, the RAs are planning to look at the exchange rate and it is therefore appropriate that the option of moving to a monthly rate and the implications of this are looked at. In addition, last year the value proposed in the consultation paper was confirmed in the decision paper and there were no objections raised to this. Finally, in their recent consultation, the RAs consulted on a particular value to apply for the year 2010 (using a set methodology) and they did not consult on a methodology that signalled that the value would be updated with a more recent figure in the decision paper.

Based upon the above, the SEM Committee has decided that the values for the Annual Capacity Exchange Rate for 2010 shall be 0.8586 €/£.

5. Parameters used in the calculation of Uninstructed Imbalances

The TSOs' report addressed the values that should apply for the following parameters in 2010:

- 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 2010 are shown in the table below and are identical to those for 2009.

Uninstructed Imbalance Parameters	2009 value	2010 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

Comments Received

PPB stated that it agreed that the current parameters should remain for 2010.

SEM Committee Decision

Based upon the above, the SEM Committee has decided that the values for the Annual Capacity Exchange Rate for 2010 shall be the same as for 2009, as set out below:

Uninstructed Imbalance Parameters	2010 value
Engineering Tolerance	0.01
MW Tolerance	1
System per Unit Regulation	0.04
Discount for Over Generation	0.20
Premium for Under Generation	0.20

6. Flattening Power Factor

The TSOs' report addressed the value that should apply for the Flattening Power Factor in 2010. The Flattening Power Factor in the Loss of Load Probability Table calculation has the objective of reducing the volatility in the Capacity Payments mechanism. The TSOs proposed the same value (0.35) for the Flattening Power Factor in 2010 as in 2009.

Comments Received

PPB expressed the view that until the planned Capacity Payments Mechanism review has been completed, it agrees with the TSOs that it would be inappropriate to change the FPF at this time.

SEM Committee Decision

Based upon the above, the SEM Committee has decided that the value for the Flattening Power Factor for 2010 shall remain at the same value as in 2009; that is, 0.35.