Single Electricity Market Committee

Trading & Settlement Code

Annual Parameters for 2013

Consultation Paper

SEM-12-082

24th September 2012

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 the following five 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 Cover[1] (SEMO);
2. MSP Software Penalty Cost Parameters[2] (SEMO);
3. Annual Capacity Exchange Rate[3] (SEMO);
4. Parameters used in the calculation of Uninstructed Imbalances[4] (TSOs); and
5. Flattening Power Factor[5] (TSOs).

The Regulatory Authorities have now received the reports from SEMO and from the TSOs in respect of the values that they propose should apply for the Year 2013. The 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 Settlement Recalculation Threshold (SRT) was consulted upon annually until 2009. 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 percentage. Under paragraph 6.77 of the Code, "the Settlement Recalculation Threshold shall be proposed by the Market Operator from time to time and approved by the Regulatory Authorities". SEMO believed it was appropriate to review the SRT on an annual basis in the initial years of the market, however SEMO does not propose altering the SRT for 2013 from its current value of 3%. SEMO refer to the detailed and comprehensive analysis[6] performed on the SRT in 2009.

[1] See paragraph 6.174 of the Code

[2] See paragraph N.25 of the Code

[3] See paragraph 4.96 of the Code

[4] See paragraph 4.142 of the Code

[5] See paragraph M.30 of the Code

[6] See link to the consultation on the SRT for 2010
http://www.allislandproject.org/en/TS_Decision_Documents.aspx?article=1654400f-2bda-42d9-a18a-a6eef8caeaf3

The Regulatory Authorities welcome 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 by SEMO and the TSOs, rather than relying on this summary.

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

Clive Bowers	and	Kenny Dane
Commission for Energy Regulation		Northern Ireland Authority for Utility Regulation
The Exchange		Queen's House
Belgard Square North		14, Queen Street
Tallaght		Belfast
Dublin 24		Northern Ireland
Ireland		BT1 6ER
cbowers@cer.ie		Kenny.Dane@uregni.gov.uk

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 22nd October 2012. A final decision is then due to be published in November on the operational parameters to apply for the year 2013.

1. Parameters for the determination of Required Credit Cover

SEMO's report addresses the values that should apply for the following parameters in 2013:

- 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

Note that, in the papers up to 2009, the value for the default Warning Limit was consulted upon. However the approval of Mod_54_08 set the default Warning Limit as 75% in the Code itself and therefore there is no requirement to consult on this value.

SEMO proposes that the values of these parameters in 2013 should be the same as in 2012 as follows:

Credit Cover Parameters	2012 value	2013 proposed
Fixed Credit Requirement for Generator Units	€5,000	€5,000
Fixed Credit Requirement for Netting Generator Units	€1,000	€1,000
Fixed Credit 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 of €15,000)	Min of €1,000 with max. of €15,000	Min of €1,000 with max. of €15,000
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%

2. 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 proposes that the values of these parameters in 2013 should be the same as in 2012 as follows:

MSP Software Penalty Cost Parameters	2012 value	2013 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

In addition to the above parameters SEMO has proposed values for two new parameters namely the Maximum Export Available Transfer Capacity MSP Constraint Cost and the Maximum Import Available Transfer Capacity MSP Constraint Cost. These parameters do not form part of the Code at present but a Modification Proposal (Mod_15_12 Inclusion of ATC limit slack variables and associated penalty cost parameters) has been approved by the Modifications Committee recommending their creation. Although a Decision has not been taken by the SEM Committee on Mod_15_12 the approach put

forward by SEMO of consulting on the values now appears prudent. The SEMO proposed values are as follows.

MSP Software Penalty Cost Parameters	2012[7] value	2013 proposed
Maximum Export Available Transfer Capacity MSP Constraint Cost	N/A	100
Maximum Import Available Transfer Capacity MSP Constraint Cost	N/A	100

3. Annual Capacity Exchange Rate

As per the SEM Committee Decision Paper on Trading & Settlement Code Annual Operational Parameters for 2012 (SEM-11-099), the Annual Capacity Exchange Rate will be proposed to the RAs by SEMO in early December and will be published soon after that.

The SEM Committee's Decision Paper on the CPM Medium Term Review (SEM-12-016) stated that in order to bring stability and certainty to Annual Capacity Payment Sum, the Best New Entrant ("BNE") component of the calculation will be fixed for three years. In their responses to the 2013 Annual Capacity Payment Sum Consultation (SEM-12-029), some of the respondents stated that such a decision could actually increase volatility of CPM revenues for generators based in Northern Ireland. It was suggested that the Annual Capacity Exchange Rate is fixed for a corresponding three year period.

Therefore, comments are sought on the appropriateness of fixing the Annual Capacity Exchange Rate for three years to coincide with the fixing of the BNE price.

The Annual Capacity Exchange Rate is currently set by using an average of the spot rate with the forward point adjustment for the last five business days of November.

The SEM Committee is therefore asking that if the Annual Capacity Exchange Rate is fixed for three years, on what basis it should be set. Should it be set for a year, and rolled forward for the following two years? Or, should the average of the forward points over the next three years be taken?

4. Parameters used in the calculation of Uninstructed Imbalances

The TSOs' report addresses the values that should apply for the following parameters in 2013:

- Tolerance band around the Dispatch Quantity:

[7] SEMO has set the value of the Maximum Export Available Transfer Capacity MSP Constraint Cost and the Maximum Import Available Transfer Capacity MSP Constraint Cost in SEM systems since Intraday Trading Go-Live on 20th July 2012.
See http://www.sem-o.com/Publications/General/IC%20Capacity%20Slack%20Variables.pdf

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 ≤ ENGTOL ≤ 1)
    - the MW Tolerance for each Trading Day t, MWTOLt (where 0 ≤ MWTOLt);

- 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 2013 are shown in the table below and are identical to those for 2012.

Uninstructed Imbalance Parameters	2012 value	2013 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[8]	0
Premium for Under Generation for Interconnectors Under Test	0[8]	0

5. Flattening Power Factor

The TSOs' report addresses the value that should apply for the Flattening Power Factor ("**FPF**") in 2013. The Flattening Power Factor in the Loss of Load Probability Table calculation has the objective of reducing the volatility in the Capacity Payments mechanism.

As part of the CPM Medium Term Review, Poyry provided a report[9] containing options for amending the Capacity Payments Mechanism. These options included adjusting the FPF. Based upon this report, in the CPM Medium Term Review Draft Decision Paper, the SEM Committee stated that they were minded to increase the value of the FPF to 0.5.

[8] Discount for Over Generation and Premium for Under Generation were set to zero for Interconnectors Under test for 2012 as per SEM-12-011

[9] SEM-11-019a

However, in the CPM Medium Term Review Final Decision Paper[10], it was stated that the SEM Committee would reserve its decision on changing the FPF until the outcome of the TSOs' report in September 2012 is known.

Choosing an appropriate value for the FPF is a matter of striking an appropriate balance between retaining sufficient volatility to signal the need for availability in times of low margin and avoiding excessive volatility that would render the mechanism highly unpredictable. The attached report from the TSOs conveys their preference that the FPF is not changed at this time. Their reasons behind this are outlined in the paper. They propose the same value (0.35) for the FPF in 2013 as in 2012.

As mentioned above, in the draft decision paper on the CPM Medium Term Review, the SEM Committee were minded to increase the FPF to 0.5, and in the CPM Medium Term Review Final Decision Paper reserved its decision until the outcome of the TSOs' report was known.

The SEM Committee therefore welcomes comments on the report from the TSOs, as well as comments on whether the FPF should remain at 0.35 or be increased to 0.5. Justification should be provided along with any comments on keeping/changing the existing FPF.

[10] http://www.allislandproject.org/en/cp_decision_documents.aspx?article=5ce2db5f-6c79-4454-9779-53dd7fae8dba