

Single Electricity Market Committee

**Trading & Settlement Code
Annual Operational Parameters
for 2013**

Decision Paper

SEM-12-106

15th November 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 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 Cover¹ (SEMO);
2. MSP Software Penalty Cost Parameters² (SEMO);
3. Annual Capacity Exchange Rate³ (SEMO);
4. Parameters used in the calculation of Uninstructed Imbalances⁴ (TSOs); and
5. Flattening Power Factor⁵ (TSOs).

In accordance with the Code, these reports were provided to the RAs by the TSOs and SEMO on 31st August 2012. Subsequently, on 24th September 2012, the RAs published the reports, in addition to a Consultation Paper⁶ summarising the reports on these parameters and seeking views on the TSOs' and SEMO's proposals.

Comments were received from AES, Airtricity, Bord Na Mona (BNM), Energia, ESB Coolkeeragh, the Irish Wind Energy Association (IWEA) and Power NI PPB (PPB).

The remainder of this paper contains the details of the proposals set out in the consultation paper, comments received, SEMO's response to these comments and the SEM Committee decision and revised proposal on the parameters to apply for 2013.

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 SEM-12-082 http://www.allislandproject.org/en/TS_Current_Consultations.aspx?article=356d0517-01b2-4ac0-b677-7749962cfe99&mode=author

1. Parameters for the determination of Required Credit Cover

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

- the Fixed Credit Requirement for Generator Units and for Supplier Units –
- the Historical Assessment Period for the Billing Period –
- the Historical Assessment Period for the Capacity Period -
- the Analysis Percentile Parameter -
- the Credit Cover Adjustment Trigger -
- the level of the Warning Limit –

The values of these parameters in 2012 and those proposed by SEMO for 2013 are shown in the table below:

Credit Cover Parameter	2012 value	2013 proposed
Fixed Credit Requirement for Generator Units	€5,000	€5,000
Fixed Credit Requirement for Netting Generator Units	€5,000	€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)	€10,000	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%

Comment Received

No respondent made any specific comments on the required credit cover parameters. Airtricity, BNM and PPB supported the proposals made in the Consultation Paper.

SEM Committee Decision

The SEM Committee has decided that the values for the Credit Cover Parameters for 2013 shall be as set out below (as proposed by SEMO):

Credit Cover Parameter	2013 value
Fixed Credit Requirement for Generator Units	€5,000
Fixed Credit Requirement for Netting Generator Units	€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
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%

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 -
- the Under-Generation MSP Constraint Cost -
- the Aggregate Interconnector Ramp rate MSP Constraint Cost -
- the Energy Limit MSP Constraint Cost -
- the Tie-Breaking Adder -

SEMO proposed that the values of these parameters in 2013 should be the same as in 2012.

In addition to the above parameters SEMO 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 now form part of the Code through the approval by the SEM Committee of Mod_15_12 *Inclusion of ATC limit slack variables and associated penalty cost parameters*. In the consultation SEMO proposed the following values for these new variables.

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

Comments Received

No respondent made any specific comments on the required credit cover parameters. Airtricity, BNM and PPB supported the proposals made in the Consultation Paper.

SEM Committee Decision

The SEM Committee has decided that the values for the MSP Software Penalty Cost Parameters for 2013 shall be unchanged from those in 2012 as set out below. In addition the SEM Committee has decided that the value new parameters created through the deployment of Intraday Trading should be set at the values proposed by SEMO.

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>

MSP Software Penalty Cost Parameters	2013 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
Maximum Export Available Transfer Capacity MSP Constraint Cost	100
Maximum Import Available Transfer Capacity MSP Constraint Cost	100

3. Annual Capacity Exchange Rate

In the Consultation Paper the SEM Committee sought particular comment from respondents on whether to fix the Annual Capacity Exchange Rate for three years in line with the decision to fix parts of the capacity pot for three years.

The SEM Committee asked whether the Annual Capacity Exchange Rate should be fixed for three years and 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?

Comments Received

AES suggested that generators could be subject to exchange rate risk if the Annual Capacity Exchange Rate continues to be set on an annual basis. However, such risk can be addressed via the use of financial instruments. AES currently utilises a financial instrument for exchange rate and therefore believes that this mechanism is better placed to alleviate concern over any exchange risk, rather than setting the exchange rate for three years. AES does not believe that the exchange rate should be set for three years.

Airtricity do not support making any changes to the methodology currently employed for setting the annual capacity exchange rate and believe that it is open for concerned parties to hedge the exchange rate if they deem that required. Airtricity also suggest that fixing the exchange rate risks being too expensive for customers if actual exchange rates vary greatly from the rate set and they are not convinced that any manner of setting the capacity exchange rate would provide sufficient certainty.

ESB Coolkeeragh stated that their preferred option was to set this rate using an average of the forward points over the next three years.

PPB believes that the intent of the policy to fix the BNE price was to bring some stability and certainty to the CPM and that having a “floating” Annual Capacity Exchange Rate would be in conflict with the wider policy. PPB believes that that any variation in the Annual Capacity Exchange Rate over the three year period would result in increased volatility in CPM revenues for generators located in Northern Ireland. Therefore, PPB considers that the Annual Capacity Exchange Rate should be treated exactly the same

as the BNE price, and therefore it should be set for 2013 and then this rate should simply apply for 2014 and 2015 (i.e. rolled forward). PPB suggests that there is no merit in averaging the forward points over the next three years since this would deviate further from the approach used in the calculation of the BNE price.

No other respondents commented on this issue.

SEM Committee Decision

It is evident from the responses that there is no overwhelming consensus on the preferred solution. However, both AES and Airtricity have provided robust rationale as to why the current methodology should remain in place; in particular they point out that there are hedging instruments available for participants should they deem that necessary. In addition, Airtricity suggests that fixing the exchange rate could be expensive for consumers if actual exchange rates vary greatly from the rate set.

Having considered the responses and in particular noting the available of hedging instruments the SEM Committee has decided that the currently employed methodology for calculating the Annual Capacity Exchange Rate will remain in place.

Therefore, as per the SEM Committee Decision in 2010 ([SEM-10-077](#)), the Annual Capacity Exchange Rate will be proposed to the RAs by SEMO in early December and will be published soon after that.

4. Parameters used in the calculation of Uninstructed Imbalances

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

- the Tolerance band around the Dispatch Quantity:
- the System per Unit Regulation, UREG -
- the Discount for Over Generation -
- the Premium for Under Generation -

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

Comments Received

Energia raised an issue they perceive with the uninstructed imbalance calculation in the instance where generators operate below their dispatch quantity but above the PUG tolerance due to high system frequency. Energia state that when a generator is operating within the PUG tolerance due to high system frequency they are charged at SMP rates for Uninstructed Imbalances, which they believe is overly punitive for something which is out of their control. Energia suggests that a better methodology would be to charge at Offer Price rates when operating below dispatch quantity but above the PUG tolerance, similar to when operating above dispatch quantity but below DOG tolerance. Energia also states that the charge for below PUG should remain the same to reflect the cost of re-dispatching plant to make up the shortfall in generation.

The TSOs reviewed the Energia response and have provided the following comment;

A change in the rates charged within the PUG tolerance and above the PUG tolerance is outside the scope of the parameters set in this paper and would require a change to the rules in the T&SC 4.151. Such a change to the T&SC would require raising a modification with the SEM Modifications Committee.

SEM Committee Decision

The SEM Committee notes the comment from Energia regarding the issue they perceive to exist with Uninstructed Imbalances. However, this issue should be dealt with through the Trading and Settlement Code Modifications Committee. Given that the SEM Committee makes the ultimate decision on Modification Proposals it would not be appropriate to give any view on the matter before the Modifications Committee considers it.

Based upon the above, the SEM Committee has decided that the values for the Uninstructed Imbalance Parameters for 2013 shall be the same as for 2012, as set out below;

Uninstructed Imbalance Parameters	2013 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

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

Discount for Over Generation for Interconnectors Under Test	0
Premium for Under Generation for Interconnectors Under Test	0

5. Flattening Power Factor

The TSOs' report addressed the value that should apply for the Flattening Power Factor in 2013. The Flattening Power Factor (FPF) 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 2013 as in 2012.

The SEM Committee sought specific comments on whether or not to change the FPF from 0.35 to 0.5. In particular, the Capacity Payments Medium Term Review was mentioned where the SEM Committee had signalled their intent at Draft Decision stage to move to a 0.5 FPF.

Comments Received

Airtricity considers that the FPF should remain unchanged and do not believe that a higher FPF would be an effective way of ensuring availability. Airtricity also refer to the TSO report which suggests that generators aim to be available for as much time as possible. Airtricity also suggests that the proposed change would serve to increase investment risk.

Energia suggests that there is no compelling evidence or convincing reason to increase the FPF and that this is reflected in the vast majority of respondent comments to the CPM Medium Term Review papers SEM-11-019 and SEM-11-088. In particular they stated that changing the FPF would not result in a behavioural change, would significantly increase generator risk, would be clearly inconsistent with ex-ante market coupling at EU level and would discourage efficient interconnector trade. Energia also suggested that changing the FPF could increase the potential for gaming and could be contentious in the context of scheduling generator outages. Energia also reiterated their views expressed in the Medium Term Review that increasing the FPF was poorly justified, contrary to the direction of change required for enhanced market integration, and primarily of benefit to large portfolio players.

BNM see no objective justification to modify the FPF from the current value of 0.35 and are of the view that there is no principled reason to make this change. They say that since the Medium Term Review there has been no sea-change in the accuracy of forecasting periods of tight system margins which would allow generators change their maintenance schedules. BNM also quote the TSO report which recommends the retention of the current FPF level. Finally they state that the comments on retaining the FPF at its current level which were raised during the Medium Term Review remain valid.

IWEA is opposed to making any changes to the FPF, as they suggest that this is particularly discriminatory against wind capacity. They state that an increase in FPF increases the volatility of Ex Post capacity payments. They state that it also increases the exposure of not being available and has the effect of putting more capacity payments into periods when the wind does not blow. IWEA believes that such an increase would affect the revenue risk of all generators but particularly wind farm generators. IWEA also state that increasing risks for

investors at this stage is particularly unsatisfactory considering the uncertainty that is currently faced by investors as a result of regional integration.

PPB reiterated its view held since SEM start that generator units generally have little scope to respond to ex-post signals and that this is evident from the TSOs' analysis. PPB also suggest that the path for changes to the SEM to facilitate EU Market Integration and compliance with the EU Target Model remains uncertain but it is likely that increasing ex-post volatility would be in conflict with the requirement for Day-Ahead market coupling and Intra-Day trading. In light of this PPB stated that the current FPF value of 0.35 should be retained for 2013.

The other respondents did not comment on this issue.

SEM Committee Decision

Having reviewed the report from the TSOs and the responses received it is clear that there is no support for making any changes to the Flattening Power Factor.

In particular the TSOs have put forward a the following reasons for not making any changes;

- It is very difficult to quantify how generators would respond to significant change in FPF by examining past behaviour
- Analysis carried out does tend to indicate that generators reaction to the capacity payment signal is minimal
- In general generator units tend to aim for high availability at all times as opposed to reacting to capacity payment signals associated with specific trading periods
- Increasing the volatility of Variable payments may undermine this outage planning and coordination process which currently works well for all parties.

In addition participants have put forward other reasons not to change the FPF such as EU market developments and investor uncertainty.

As stated previously, 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. In the final decision on the CPM Medium Term Review (SEM-12-016) it was stated that the SEM Committee would reserve its final decision on any FPF change until the outcome of the annual Operational Parameters consultation was known and in particular the TSO report. The SEM Committee has not carried out any further detailed modelling of the capacity payments mechanism and the FPF since the Medium Term Review. Also the TSO Report has recommended retain the existing FPF value and all respondents agreed with the TSOs.

Based upon the above, the SEM Committee has decided that the value for the Flattening Power Factor for 2013 shall remain at the same value as in 2012; that is, 0.35.