



Single Electricity Market Committee

Trading & Settlement Code

I-SEM Operational Parameters

Credit Cover and Imbalance Settlement

Consultation Paper

SEM-17-009

3 February 2017

The European Union (EU) is building an internal market for electricity and gas to help deliver energy supplies that are affordable, secure and sustainable. This internal market for electricity is underpinned by the implementation of the European Electricity Target Model (EU Target Model) arising from the EU's Third Energy Package. Specifically, the EU Target Model is a set of harmonised arrangements for the cross-border trading of wholesale energy and balancing services across EU Member States. The various European network codes and guidelines are the basis on which these harmonised arrangements in electricity are being built. In line with the requirements of the Third Energy Package, electricity network codes and guidelines are being developed by ENTSO-E, based on ACER's framework guidelines, and eventually pass through the comitology process to become legally binding EU law.

It is within this context that the SEM Committee (SEMC) committed to implementing the Integrated Single Electricity Market (I-SEM) in order to meet the requirements of the EU Target Model. In particular, at its July 2011 meeting the SEMC asked that the Regulatory Authorities (RAs) lead a team for the market integration project involving the Transmission System Operators (TSOs) and the Single Electricity Market Operator (SEMO). The I-SEM is scheduled to Go Live in Q2 2018.

This consultation is the first of two consultations on the setting of I-SEM Trading and Settlement Code (TSC) market parameters. This consultation covers parameters utilised in:

- 1) The calculation of required credit cover; and,
- 2) Imbalance Settlement.

The second consultation will cover parameters utilised in the calculation of the imbalance price, and a number of operational parameters. This tranche will also include the new parameters associated with the scheduling and dispatch process – the Long Notice Adjustment Factor and the System Imbalance Flattening Factor.

The approach to the parameter setting consultation process was provided to the Energy Trading Arrangements Rules Liaison Groups, both in a paper to the Working Group in July 2016 and in presentations made to the Working Group in October and December that year. These set out the parameters to be consulted on, the assessment methodologies that would be employed, and updates on the timescales and process as it evolved. As set out to the Rules Liaison Group the assessment of parameter values and proposals for their initial setting in I-SEM have been led by the SEMO as:

- (a) the parameters setting process is a direct continuation of the TSC development process, and
- (b) the technical information and market information resides in the SEMO.

The SEM Committee recognises the importance of the initial setting of the market parameters, and recognises the significant work that has been undertaken by the SEMO in producing the attached reports.

The remainder of this paper contains a short summary of the parameters consulted on. The SEM Committee invites comment on the proposals set out in the attachments to this paper.

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

Sheena Byrne
Commission for Energy Regulation
The Exchange
Belgard Square North
Tallaght
Dublin 24
shbyrne@cer.ie

Kenny Dane
Utility Regulator
Queens House
14 Queen Street
Belfast
BT1 6ED
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 close of business on **Monday, 20 March 2017**. A final decision on the operational parameters consulted on in this paper is due to be published in May 2017.

1. 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 Required Credit Cover calculated using forecast volumes against prices calculated from known prices, while Standard Participants have Required Credit Cover calculated using known Settlement values.

In each of these calculations, and in the day-to-day Credit Risk assessment process, a number of parameters are used. SEMO's report considers the values that should apply for the following parameters in the I-SEM:

- **Fixed Credit Requirement Parameter (FCR_{yp}):** this sets the value of 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. While Assetless Traders may be primarily focussed on the ex-ante markets, they will still be required to register in the balancing arrangements in the event that their net ex-ante position does not balance. This is the amount of credit cover required to allow for payments that become due as a result of Settlement Reruns.
- **Undefined Exposure Period:** The number of days in the Undefined Exposure Period, g (known as the parameter $UEPBD_g$ in the Trading and Settlement Code) is 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.
- **Historical Assessment Period:** The number of days in the Historical Assessment Period (known as the parameter $DINHAP$ in the Trading and Settlement Code) 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 of 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.

- **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. The Undefined Exposure Variance will be used to assess the value to be proposed for the number of days in the Historical Assessment Period.
- **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.
- **Level of Warning Limit:** The Warning Limit is a new parameter to be applied for I-SEM. While the current design of the SEM contains a Warning Limit, this is set to a limit of 75% within the Code itself, with individual participants permitted to set this at different levels. To take account of changes to the Credit Cover policies for the new market arrangements, particularly with respect to the interaction between different markets, the Warning Limit has become a parameter. While its application in the calculations is the same as per the current market design, it is considered that parameterising this value allows additional meaning to be applied to this value.
- **Level of Breach Limit:** means a predefined level which if the ratio of a Participant's Required Credit Cover to its Posted Credit Cover exceeds will result in a Credit Cover Increase Notice which will require remedy by the Participants including by posting additional Credit Cover.

2. IMBALANCE SETTLEMENT PARAMETERS

The SEMO paper considers a number of parameters that are used in the calculation of Uninstructed Imbalance Quantities and Charges. These parameters are:

- **Engineering Tolerance, (TOLENG)** and **MW Tolerance (TOLMEG)**. 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:
 - the Engineering Tolerance (where $0 \leq \text{TOLENG} \leq 1$) multiplied by the Dispatch Quantity; and
 - the MW Tolerance for each Trading Day, t , (where $0 \leq \text{TOLMW}_t$).
- The **Discount for Over Generation Factor** (FDOG_{uy}) and the **Premium for Under Generation** (FPUG_{uy}) 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.
- **System per Unit Regulation Factor (FUREG)** is the parameter that reflects the response rate of a generator resulting from its governor droop settings as it varies with system frequency, which is used to calculate the Tolerance for Under Generation and the Tolerance for Over Generation in the calculation of Uninstructed imbalances.

In the I-SEM at go-live settlement will be on the basis of Imbalance Settlement Price in each Settlement Period. An alternative approach is outlined in the TSC which would settle on the basis of a weighted average of the settlement price over a given period. The **Imbalance Weighting Factor** would, if this approach was adopted in the future, be the parameter used to result in a weighted average price which is most representative of prices in the period over which averaging was calculated. The SEMO paper considers what methodology could be used to determine the Imbalance Weighting parameter, should the alternative approach for the Ex-Ante Quantity Price be changed in the future, for example if traded products no longer corresponded to Imbalance Settlement Periods.

For I-SEM go-live the **Imbalance Weighting Factor** is set at 1 for all Imbalance Settlement Periods. It should be noted that the **Aggregated Settlement Period (α)** has also been set under the TSC at 0.5 hours, and its duration does not form part of this consultation.

The **Settlement Recalculation Threshold** is a parameter which determines whether the Market Operator will include a corrected data input value (following a query or dispute) into a Settlement Rerun. The threshold is used to test when a change in input data resulting from an upheld dispute “changes to the relevant Settlement Statement or Settlement Document are greater than the Settlement Recalculation Threshold”. When the threshold is exceeded, the changes will be made to the next relevant Settlement Rerun (i.e. if the value of the change is below the High Materiality threshold, then at the next timetabled Settlement Rerun, and if the value is above the High Materiality threshold, then at the next ad hoc Settlement Rerun).

In the TSC an **Information Imbalance Price** is used to calculate charges for a generating unit when its Physical Notifications provided for a given period at one time differ (outside of a tolerance band) from those for the same period provided at another time. This charge is the Information Imbalance Charge for a Generator Unit. For go-live this Information Imbalance Price has been set to zero. The SEMO paper considers the methodologies that would be used to set the Information Imbalance Price should the decision be taken at some future point to set the Information Imbalance Charge to a level other than zero.

Similarly the paper considers methodologies to set the **Information Imbalance Quantity Weighting Factor** and the **Information Imbalance Tolerance** should values be set to a level other than zero at some future stage.

3. NEXT STEPS

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

Sheena Byrne
Commission for Energy Regulation
The Exchange
Belgard Square North
Tallaght
Dublin 24
shbyrne@cer.ie

Kenny Dane
Utility Regulator
Queens House
14 Queen Street
Belfast
BT1 6ED
kenny.dane@uregni.gov.uk

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