All Island Project

SEM TRADING AND SETTLEMENT CODE

MSP Software Parameters

DECISION ON 2007 VALUES
AND
PROPOSED DECISION ON 2008 VALUES

28 September 2007

AIP/SEM/07/490

1. Introduction

Under the terms of the SEM Trading and Settlement Code (TSC) the Regulatory Authorities (RAs) shall determine certain parameters proposed by the Market Operator (MO) relating to the operation of the MSP Software.[1] The parameters concerned are:

1. The Over-Generation MSP Constraint Cost;
2. The Under-Generation MSP Constraint Cost;
3. The Aggregate Interconnector Ramp Rate MSP Constraint Cost;
4. The Energy Limit MSP Constraint Cost;
5. The Tie-Breaking Adder.

The RAs have received the MO's report which proposes values for the parameters for the First Trading Year and have undergone a consultation process (AIP/SEM/07/439) with participants on these. The RAs have received comments on the consultation paper for these parameters and have provided all comments received to the MO who has, in turn, responded to these. On the basis of the comments on the consultation paper, the MO's responses and the RAs' own considerations, the RAs have reached their decision on the values to be used for the parameters concerned for the First Trading Year. The RAs are issuing their determination on these values for 2007 for information purposes and shall convey these values to the MO for publication in accordance with paragraph N.27 of the TSC.

As explained in Section 4, the RAs have also received a submission from the Market Operator for these parameters for 2008. In all cases the same values are proposed as those for the First Trading Year. The RAs request participants to provide any additional comments on these proposals pertaining to 2008, bearing in mind that the RAs will consider comments received on 2007 values to apply to 2008 unless informed to the contrary. Comments are requested in relation to the 2008 values by 19 October 2007, after which time, subject to any comments received, the RAs expect to determine that the same values as approved in this Decision Paper apply to 2008 and convey this to the Market Operator for publication.

[1] See TSC paragraph N.25.

2. Comments on the Consultation Paper and the Regulatory Authorities' Response

The RAs received comments from two parties on the Consultation Paper. These were:

- Northern Ireland Electricity (NIE)
- Viridian Power and Energy (VPE)

2.1 MSP Software Parameters

The MSP Software Parameters are:

- Over Generation MSP Constraint Cost
- Under Generation MSP Constraint Cost
- Interconnector Ramp Rate MSP Constraint Cost
- Energy Limit MSP Constraint Cost
- Tie Breaking Adder

2.1.1 Market Operators' Proposal and Justification

The Market Operator has proposed the values below for the MSP Software parameters under the TSC. For the justification and methodology for these proposals please refer to the consultation paper on MSP Parameter values for 2007 (AIP/SEM/07/439)

The following are the values for the RA's to publish (in which factor in an additional factor of 5 applied by the UUC))

Over generation penalty =	**365**	**× *maximum daily bid price***
Under generation penalty =	**365**	**× *maximum daily bid price***
Interconnector ramp penalty =	**1460**	**× *maximum daily bid price***
Energy limit penalty =	**190**	**× *maximum daily bid price***

The Market Operator also proposes that the value for the Tie-Breaking Adder shall be 0.001.

2.1.2 Respondents' Comments

NIE agreed with the proposal to adopt the value 0.001 as the Tie-Breaking Adder**.** In relation to the rest of the MSP Software Parameters, NIE expressed concern that it is not possible to determine what impact the proposed values will have on the operation of the MSP Software.

VPE called for an analysis of the impact on unit commitment and contigent dispatch volumes and SMP prices for a range of slack variables.

2.1.3 RAs' Considerations

Following the submission of Market Operator's proposals the RAs requested several clarifications from the MO (With MO responses[2] in italics), as follows:

In the stated set of "published" factors, the term "XXX * maximum daily bid price" needs to be carefully explained, as it combines start, no load and incremental prices.

The XXX factor is a function of per MW no load and start-up costs and the maximum bid price. The maximum bid price was set to the price cap. The utilized maximum expected per MW startup and no load costs originated from data submitted during scripted market trial which was scaled up in order that the values utilized would reasonably be expected to exceed per MW start-up and no-load costs used in the market.

In the stated set of "published values", clarification is required on the relation with the Price Cap and Floor - in practice if the maximum submitted price is €100, then the under generation penalty is the Price Cap, not 365 x maximum daily bid price that is recommend for publishing

In this example if under generation occurs the market price will be the Price Cap but the under generation penalty cost utilised internally in the MSP Software will exceed the Price Cap. It is important that this is the case in order that a unit with a bid close to the Price Cap would be used before the under generation penalty.

The link to PFLOOR for the over-generation penalty also means that the published value is slightly misleading.

Where the penalty function is used internally in the MSP software it is applied prior to the prices being bounded by PFLOOR or PCAP.

It would be preferable to say that OGP = UGP = Max{MCAUG, PCAP, |PFLOOR|}

The value of the over generation penalty is set to ensure that it is always cheaper to use available generation than to use this function. The maximum cost of the available generation is a function of MCAUG and PCAP, the maximum is not a function of PFLOOR.

The over-generation penalty is used when there is more generation than demand. A situation where an over-generation may occur is when a unit remains on when not needed in a period to avoid the cost incurred if it were to switch off and switch on in a later period. The maximum avoided cost is MCAUG so this is the lower bound on the over-generation penalty cost.

In the above scenario for a unit with negative bids, the unit is effectively paying to stay on and over-generate saving the market a maximum of ABS(PFLOOR). In this scenario the over-generation penalty would be incurred and thus the penalty must exceed the saving. The minimum value for the over-generation penalty should thus also exceed ABS(PFLOOR) to ensure over-generation does not occur in this scenario.

[2] Please refer to AIP/SEM/07/439 for more on this and for definitions of terms used is the justification – MCAUG and MCAOG

· *The minimum over-generation penalty should thus be Max(MCAOG, abs(PFLOOR))*

The hierarchy of the parameters is acceptable; however a larger margin on the ELSF value might be more appropriate

The minimum is value for ELSF is 0.5 which is defined by the strict relationship between average power per trading period and energy in MWh. The margin above 0.5 is strictly unnecessary but is included as a safety margin.

2.1.4 Regulatory Authorities' Determination

The Regulatory Authorities, having received the requested clarifications from the Market Operator, and in light of the limited response to the consultation, approve the parameters for the MSP Software values as submitted by the Market Operator.

3. Conclusions

The Regulatory Authorities approve the following MSP Software parameters for 2007 and propose that the same values be used for 2008. The table summarises the RAs' determinationsfor 2007 MSP Software Parameters:

MSP Software Parameter	**Value**	
Over Generation MSP Constraint Cost	**365**	**× maximum daily bid price**
Under Generation MSP Constraint Cost	**365**	**× maximum daily bid price**
Interconnector Ramp Rate MSP Constraint Cost	**1460**	**× maximum daily bid price**
Energy Limit MSP MSP Constraint Cost	**190**	**× maximum daily bid price**
Tie Breaking Adder	**0.001**	

4. RAs' Determination of 2008 MSP Software Parameters

The RAs invite interested parties to respond with comments, if any, on the values for the parameters in this paper as proposed values for 2008. The RAs presume that the comments received on the 2007 values apply for 2008. If no comments are received by 19 October 2007, and should the RAs not have any cause in the interim to revise these values, the RAs will notify the Market Operator that the values in this paper, where relevant, apply to 2008.

Comments on the proposed 2008 values should be sent, preferably in electronic form, by 19th October 2007 to:

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