
Wholesale Electricity Market Rule Change Proposal Form

Change Proposal No: RC_2009_42

Received date:

Change requested by

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Address:	L15, 28 The Esplanade, Perth, WA 6000
Date submitted:	17/12/09
Urgency:	High
Change Proposal title:	Calculation of Net STEM Shortfall
Market Rule(s) affected:	4.26.2, 4.26.2B, 4.26.5

Introduction

Clause 2.5.1 of the Wholesale Electricity Market Rules (Market Rules) provides that any person (including the Independent Market Operator (IMO)) may make a Rule Change Proposal by completing a Rule Change Proposal Form that must be submitted to the IMO.

This Change Proposal can be posted, faxed or emailed to:

Independent Market Operator

For example, suppose that a Participant has two Facilities as follows:

	Facility 1	Facility 2	Total
RCOQ	100	20	120
RTFO	40	0	40
DSQ	100	0	100
MSQ	60	0	60
Real-time Shortfall	0	0	20

Facility 1 has suffered a partial Forced Outage; although it was expected to deliver 100MW, it is able to deliver only 60MW. Facility 2 has not been dispatched. The pre-STEM component of the Net STEM Shortfall is zero, as the Participant's Resource Plan did offer the required capacity to the market. The real-time component is calculated as the amount by which MSQ falls short of the lesser of DSQ and (RCOQ – RTFO). We find that the Shortfall calculated using the total quantities is non-zero, even though the Shortfall would be zero if calculated for each Facility separately.

In effect, the formula implicitly requires a Participant to use any available capacity in its other Facilities to compensate for a loss of capacity caused by a Forced Outage. This is the correct method to apply prior to the STEM, as a Participant can choose which of its Facilities it will use to meet its Reserve Capacity Obligations. However, once it has submitted its Resource Plan, a Participant cannot unilaterally decide to depart from it in response to a real-time Forced Outage – System Management decides how to respond. Thus a Participant can be penalised for failing to do something that it is not permitted to do.

2.5.9. The IMO may subject a Rule Change Proposal to the Fast Track Rule Change Process if, in its opinion, the Rule Change Proposal:

- (a) is of a minor or procedural nature; or
- (b) is required to correct a manifest error; or
- (c) is urgently required and is essential for the safe, effective and reliable operation of the market or the SWIS.

3. Provide any proposed specific changes to particular Rules: (for clarity, please use the current wording of the Rules and place a ~~strikethrough~~ where words are deleted and underline words added)

4.26.2. The IMO must determine the net STEM shortfall (“**Net STEM Shortfall**”) in Reserve Capacity supplied by each Market Participant p holding Capacity Credits associated with a generation system in each Trading Interval t of Trading Day d and Trading Month m as:

$$SF(p,m,d,t) = \text{Max}(\text{Sum}(f \in F(p), \text{RTFO}(f,p,d,t)), \text{Sum}(f \in F(p), \text{RCOQ}(f,p,d,t)) - A(p,d,t) + \text{Sum}(f \in F(p), \text{Max}(0, B(f,p,d,t) - C(f,p,d,t)))) - \text{Sum}(f \in F(p), \text{RTFO}(f,p,d,t))$$

Where

$$A(p,d,t) = \text{Min}(\text{Sum}(f \in F(p), \text{RCOQ}(f,p,d,t)), \text{CAPA}(p,d,t));$$

$$B(f,p,d,t) = \text{Min}(\text{RCOQ}(f,p,d,t) - \text{RTFO}(f,p,d,t), \text{DSQ}(f,p,d,t));$$

$$C(f,p,d,t) = \text{Min}(\text{DSQ}(f,p,d,t), \text{MSQ}(f,p,d,t));$$

$F(p)$ is the set of Market Participant p 's Facilities that have Reserve Capacity Obligations, and f denotes a member of that set;

$\text{RCOQ}(f,p,d,t)$ is for Facility f belonging to Market Participant p :

(a) the total Reserve Capacity Obligation Quantity of Market Participant p 's the Facility if it is unregistered; or facilities that have Reserve Capacity Obligations,

(b) plus the sum over all of the Registered Facilities registered to Market Participant p , of the product of the factor described in clause 4.26.2B as it applies to the Registered Facility and the Facility's Reserve Capacity Obligation Quantity in Trading Interval t of Trading Day d ;

$\text{CAPA}(p,d,t)$ is for Market Participant p and Trading Interval t of Trading Day d :

- (a) equal to $\sum_{f \in F(p)} RCOQ(f, p, d, t)$ for a Trading Interval where the STEM auction has been suspended by the IMO in accordance with clause 6.10;
- (b) subject to paragraph (a), for the case where Market Participant p is not the Electricity Generation Corporation, the sum of:
 - i. the sum of the Reserve Capacity Obligation Quantities in Trading Interval t of that Market Participant's Interruptible Loads and Curtailable Loads; plus
 - ii. the MW quantity calculated by doubling the net MWh quantity of energy sent out by Facilities registered by that Market Participant during that Trading Interval calculated as the Net Contract Position less the shortfall as indicated by the applicable Resource Plan; plus
 - iiA if a STEM submission does not exist for that Trading Interval, the MW quantity calculated by doubling the total MWh quantity of energy to be consumed by that Market Participant including demand associated with any Curtailable Load or Interruptible Load, but excluding demand associated with any Dispatchable Load during that Trading Interval as indicated by the applicable Resource Plan; plus
 - iii. the MW quantity calculated by doubling the total MWh quantity covered by the STEM Offers which were not scheduled and the STEM Bids which were scheduled in the relevant STEM Auction, determined by the IMO for that Market Participant under clause 6.9 for Trading Interval t, corrected for Loss Factor Loss Factor just mcs EM Bids

- ii. the MWh quantity calculated by doubling the total MWh quantity of the Net Contract Position quantity of that Market Participant for Trading Interval t , corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
- iii. the MWh quantity calculated by doubling the total MWh quantity of the STEM Offers which were not scheduled and the STEM Bids which were scheduled in the relevant STEM Auction, determined by the IMO for that Market Participant under clause 6.9 for Trading Interval t , corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
- iv. double the total MWh quantity to be provided as Ancillary Services as specified by the IMO in accordance with clause 6.3A.2(e)(i) for the Electricity Generation Corporation corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus
- v. the greater of zero and $(BSFO(p,d,t) - \text{Sum}(f \in F(p), RTFO(f,$

for Loss Factor adjustments applicable to that Facility so as to be a sent out quantity.