

## LEGAL TEXT TO GIVE EFFECT TO THE PROPOSED MODIFICATION P10

*In order to give effect to Modification Proposal P10, changes are required to Section T, Annex X-1 and Annex X-2 of the BSC.*

*New section T1.7 added as follows:*

### **1.7 De Minimis Acceptance Threshold**

**1.7.1** For the purposes of the Code the “**De Minimis Acceptance Threshold**” (DMAT<sub>d</sub>) shall be 1 MWh or such other amount (in MWh) as the Panel may from time to time determine, after consultation with, the Transmission Company and Trading Parties and subject to the approval of the Authority, as the de-minimis level below which it would be appropriate to disregard accepted Bids and accepted Offers from the calculation of the energy imbalance prices.

**1.7.2** Where a revised value for the De Minimis Acceptance Threshold is approved by the Authority:

(a) such revised value shall be effective from such date as the Panel shall determine with the approval of the Authority, not being less than 20 Business Days after the date of the Panel’s determination;

(b) the Panel Secretary shall promptly give notice of the revised value and its effective date to each Party, the SAA and the BMRA and shall copy such notice to the Authority;

*Amendments to section T4.4 as follows:*

### **4.4. Determination of Energy Imbalance Prices (SBP<sub>j</sub> and SSP<sub>j</sub>)**

4.4.1 In respect of each Settlement Period, the System Total Accepted Offer Volume will be determined as follows:

$$TQAO_j = \sum_i \sum^n QAO^{ij}$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^n$  represents the sum over all Bid-Offer Pair Numbers for the BM Unit.

4.4.2 In respect of each Settlement Period, the System Total Accepted Bid Volume will be determined as follows:

$$TQAB_j = \sum_i \sum^n QAB^{ij}$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^n$  represents the sum over all Bid-Offer Pair Numbers for the BM Unit.

**4.4.2A** In respect of each Settlement Period, some of the accepted Bids and accepted Offers may be defined as De Minimis Accepted Bids and De Minimis Accepted Offers respectively in accordance with the provisions in Annex T-1, and all such De Minimis Accepted Bids and De Minimis Accepted Offers shall be disregarded for the purposes of the calculation of energy imbalance prices.

4.4.3 In respect of each Settlement Period, some of the accepted Bids and accepted Offers may be defined as Arbitrage Accepted Bids and Arbitrage Accepted Offers respectively in accordance with the provisions in Annex T-1, and all such Arbitrage Accepted Bids and Arbitrage Accepted Offers shall be disregarded for the purposes of the calculation of energy imbalance prices.

4.4.4 In respect of each Settlement Period, some of the accepted Bids and accepted Offers may be defined as Trade Tagged Bids and Trade Tagged Offers respectively in accordance with the provisions in Annex T-1, and all such Trade Tagged Bids and Trade Tagged Offers shall be disregarded for the purposes of the calculation of energy imbalance prices.

4.4.5 In respect of each Settlement Period, if  $\{\sum_i \sum^n \{QAO_{ij}^n * TLM_{ij}\} + BVA_j\}$  is not equal to zero then the System Buy Price will be determined as follows:

$$SBP_j = \{\sum_i \sum^n \{QAO_{ij}^n * PO_{ij}^n * TLM_{ij}\} + BCA_j\} / \{\sum_i \sum^n \{QAO_{ij}^n * TLM_{ij}\} + BVA_j\}$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^n$  represents the sum over those accepted Offers that are not De Minimis Accepted Offers and not Arbitrage Accepted Offers and not Trade Tagged Offers.

If for any Settlement Period  $\{\sum_i \sum^n \{QAO_{ij}^n * TLM_{ij}\} + BVA_j\}$  is equal to zero, then:

- (a) if for that Settlement Period  $\{\sum_i \sum^n \{QAB_{ij}^n * TLM_{ij}\} + SVA_j\}$  is equal to zero, the System Buy Price for that Settlement Period will be equal to zero;
- (b) otherwise, the System Buy Price will be determined as the maximum of System Sell Price and:
  - (i) the Offer Price of the cheapest Offer available in that Settlement Period:
    - (1) which has a positive Bid-Offer Pair Number; and
    - (2) which has an Offer Price greater than the Offer Price of any Offer which is an Arbitrage Accepted Offer in respect of that Settlement Period; and
    - (3) for which the value of Bid-Offer Volume ( $qBO_{ij}^n(t)$ ) is greater than zero for all spot times  $t$  in that Settlement Period;
  - (ii) or, if no such Offer exists, zero.

4.4.6 In respect of each Settlement Period, if  $\{\sum_i \sum^n \{QAB_{ij}^n * TLM_{ij}\} + SVA_j\}$  is not equal to zero then the System Sell Price will be determined as follows:

$$SSP_j = \{\sum_i \sum^n \{QAB_{ij}^n * PB_{ij}^n * TLM_{ij}\} + SCA_j\} / \{\sum_i \sum^n \{QAB_{ij}^n * TLM_{ij}\} + SVA_j\}$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^n$  represents the sum over those accepted Bids that are not De Minimis Accepted Bids and not Arbitrage Accepted Bids and not Trade Tagged Bids.

If for any Settlement Period  $\{\sum_i \sum^n \{QAB_{ij}^n * TLM_{ij}\} + SVA_j\}$  is equal to zero, then:

- (a) if for that Settlement Period  $\{\sum_i \sum^n \{QAO_{ij}^n * TLM_{ij}\} + BVA_j\}$  is equal to zero, the System Sell Price for that Settlement Period will be equal to zero;

- (b) otherwise, the System Sell Price will be determined as the minimum of System Buy Price and:
- (i) the Bid Price of the most expensive Bid available in that Settlement Period:
- (1) which has a negative Bid-Offer Pair Number; and
  - (2) which has a Bid Price less than the Bid Price of any Bid which is an Arbitrage Accepted Bid in respect of that Settlement Period; and
  - (3) for which the value of Bid-Offer Volume ( $qBO_{ij}^n(t)$ ) is less than zero for all spot times  $t$  in that Settlement Period;
- (ii) or, if no such Bid exists, zero.

4.4.7 In respect of each Settlement Period, the Total Accepted Priced Offer Volume will be determined as follows:

$$TQPAO_j = \sum_i \sum^n QAO_{ij}^n$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^n$  represents the sum over those accepted Offers that are not De Minimis Accepted Offers and not Arbitrage Accepted Offers and not Trade Tagged Offers.

4.4.8 In respect of each Settlement Period, the Total Accepted Priced Bid Volume will be determined as follows:

$$TQPAB_j = \sum_i \sum^n QAB_{ij}^n$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^n$  represents the sum over those accepted Bids that are not De Minimis Accepted Bids and not Arbitrage Accepted Bids and not Trade Tagged Bids.

4.4.9 In respect of each Settlement Period, the Total Arbitrage Volume will be determined as follows:

$$TAQ_j = \sum_i (\sum^{n'} QAB_{ij}^{n'} - \sum^{n*} QAO_{ij}^{n*})/2$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^{n'}$  represents the sum over those accepted Bids that are Arbitrage Accepted Bids and  $\sum^{n*}$  represents the sum over those accepted Offers that are Arbitrage Accepted Offers.

4.4.10 In respect of each Settlement Period, the Total Trade Tagged Volume will be determined as follows:

$$TCQ_j = \sum_i (\sum^{n'} QAB_{ij}^{n'} - \sum^{n*} QAO_{ij}^{n*})/2$$

where  $\sum_i$  represents the sum over all BM Units and  $\sum^{n'}$  represents the sum over those accepted Bids that are Trade Tagged Bids and  $\sum^{n*}$  represents the sum over those accepted Offers that are Trade Tagged Offers.

Amendments to Annex T-1 as follows:

## ANNEX T-1: CALCULATIONS

### 1. Interpretation

1.1 For the purposes of the Code, in relation to a BM Unit and Settlement Period, an **'accepted Offer'** means the Period BM Unit Accepted Offer Volume ( $QAO_{ij}^n$ ), and an **'accepted Bid'** means the Period BM Unit Accepted Bid Volume ( $QAB_{ij}^n$ ) but excluding Offers and Bids where the value of Period BM Unit Accepted Offer Volume or Period BM Unit Accepted Bid Volume (as the case may be) is zero.

#### 1A De Minimis Volumes

1A.1 In respect of each Settlement Period, De Minimis Accepted Offers and De Minimis Accepted Bids will be defined in the following way.

(a) All accepted Bids for which  $|QAB_{ij}^n| < DMAT_d$  shall be tagged as De Minimis Accepted Bids.

(b) All accepted Offers for which  $QAO_{ij}^n < DMAT_d$  shall be tagged as De Minimis Accepted Offers.

1A.2 All accepted Bids and accepted Offers which are not De Minimis Accepted Bids and De Minimis Accepted Offers will be defined as Non-De Minimis Bids and Non-De Minimis Offers respectively.

### 2. Arbitrage

2.1 In respect of each Settlement Period, Arbitrage Accepted Offers and Arbitrage Accepted Bids will be defined in the following way.

2.2 If, for the highest priced accepted non-De Minimis Bid,  $QAB_{ij}^g$  (if any) which is not an Arbitrage Accepted Bid, there exists any accepted non-De Minimis Offer which is not an Arbitrage Accepted Offer  $QAO_{ij}^n$  for which it is true that  $PO_{ij}^n \leq PB_{ij}^g$ , then the following procedure will be carried out:

(a) All accepted Non-De Minimis Offers for which  $PO_{ij}^n \leq PB_{ij}^g$  will be ranked in price order, cheapest first.

(b) The set of accepted Non-De Minimis Offers  $\{QAO_{ij}^{n_1}, QAO_{ij}^{n_2}, \dots, QAO_{ij}^{n_v}\}$  is then a ranked set of accepted Offers for all of which it is true that  $PO_{ij}^{n_v} \leq PB_{ij}^g$ .

(c) Then for all  $v$  such that

$$\sum^v QAO_{ij}^{n_v} \leq -QAB_{ij}^g$$

where  $\sum^v$  is the sum over all ranked accepted Non-De Minimis Offers up to  $v$ ,

the  $QAO^{n_v}_{ij}$  will be defined as Arbitrage Accepted Offers and the portion of  $QAB^g_{ij}$  which is equal to  $\sum^v(-QAO^{n_v}_{ij})$  will be defined as an Arbitrage Accepted Bid (this portion may be the whole of  $QAB^g_{ij}$ ).

(d) If:

$$\sum^v QAO^{n_v}_{ij} < -QAB^g_{ij}$$

where  $\sum^v$  is the sum over all ranked accepted Non-De Minimis Offers up to v,

then, if a ranked accepted Non-De Minimis Offer, v+1 exists, the fraction  $\gamma$  of  $QAO^{n_{v+1}}_{ij}$  which satisfies

$$\sum^p QAO^{n_v}_{ij} + \gamma QAO^{n_{v+1}}_{ij} = -QAB^g_{ij}$$

will also be defined as an Arbitrage Accepted Offer and  $QAB^g_{ij}$  will be defined as an Arbitrage Accepted Bid. All accepted Bids and accepted Offers which are not Arbitrage Accepted Bids and Arbitrage Accepted Offers will be defined as Non-arbitrage Bids and Non-arbitrage Offers respectively.

2.3 The process in paragraphs 2.1 and 2.2 will then be repeated for the highest priced accepted Non-De Minimis Bid (if any) that remains a Non-arbitrage Bid.

2.4 If, for the purposes of carrying out the procedure in paragraphs 2.1 and 2.2, there are two or more accepted Non-De Minimis Bids that are Non-arbitrage Bids, that have the same highest Bid Price, then one of the accepted Bids will be selected at random.

### 3. Trade Tagging

3.1 In respect of each Settlement Period, Trade Tagged Offers and Trade Tagged Bids will be defined in the following way.

(a) If:

$$\sum^{n'} (-QAB^{n'}_{ij}) \leq BRL_j$$

where  $\sum^{n'}$  is the sum over those accepted Bids that are both Non-De Minimis Bids and Non-arbitrage Bids; or

$$\sum^{n*} QAO^{n*}_{ij} \leq BRL_j$$

where  $\sum^{n*}$  is the sum over those accepted Offers that are both Non-De Minimis Offers and Non-arbitrage Offers

then no ~~Non-arbitrage~~ Bids or ~~Non-arbitrage~~ Offers will be Trade Tagged.

(b) Otherwise, the following procedure will be carried out. The set of all accepted ~~Non-arbitrage~~ Bids, which are neither De Minimis Bids nor Arbitrage Bids, will be ranked in price order, cheapest first. In any case where such Bids have the same price as each other, the ordering of such Bids will be random. The set of Non-De Minimis and Non-arbitrage Bids  $\{QAB^{n'_1}_{ij}, QAB^{n'_2}_{ij}, \dots, QAB^{n'_w}_{ij}\}$  is

then a set of Ranked Non-arbitrage Bids. The set of all accepted Non-arbitrage Offers, which are neither De Minimis Offers nor Arbitrage Offers will be ranked in price order, most expensive first. In any case where Non-arbitrage Offers have the same price as each other, the ordering of these such Non-arbitrage Offers will be random. The set of Non-De Minimis and Non-arbitrage Offers  $\{QAO^{n^*}_{ij}, QAO^{n^*}_{ij}, \dots, QAO^{n^*}_{ij}\}$  is then a set of Ranked Non-arbitrage Offers.

(c) If:

$$\sum^{n'} (-QAB^{n'}_{ij}) \leq \sum^{n^*} QAO^{n^*}_{ij}$$

where  $\sum^{n'}$  is the sum over those accepted Bids that are both Non-De Minimis and Non-arbitrage Bids and  $\sum^{n^*}$  is the sum over those accepted Offers that are both Non-De Minimis and Non-arbitrage Offers

then for the smallest value of q such that

$$\sum^{n'_{v>q}} (-QAB^{n'}_{ij}) \leq BRL_j$$

where  $\sum^{n'_{v>q}}$  is the sum over those Non-De Minimis and Non-arbitrage Bids for which v is greater than q

then for all  $q \geq 1$  the Ranked Non-De Minimis and Non-arbitrage Bids numbered  $n'_1$  to  $n'_{q-1}$  will be defined as Trade Tagged Bids and if

$$\sum^{n'_{v>q}} (-QAB^{n'}_{ij}) = BRL_j$$

then the Ranked Non-De Minimis and Non-arbitrage Bid numbered  $n'_q$  will be defined as a Trade Tagged Bid; or if

$$\sum^{n'_{v>q}} (-QAB^{n'}_{ij}) < BRL_j$$

then the fraction  $\gamma$  of  $QAB^{n'_q}_{ij}$  which satisfies

$$-\left(\sum^{n'_{v>q}} QAB^{n'}_{ij} + (1-\gamma) * QAB^{n'_q}_{ij}\right) = BRL_j$$

will also be defined as a Trade Tagged Bid.

(d) Since  $\sum^{n'} (-QAB^{n'}_{ij}) \leq \sum^{n^*} QAO^{n^*}_{ij}$  there must exist a number e and a number  $\phi$  (which may be a fraction or zero) for which

$$-\left(\sum^{n'_{v<e}} QAB^{n'}_{ij} + \phi * QAB^{n'_e}_{ij}\right) = \sum^{n^*_{v<e}} QAO^{n^*}_{ij} + \mathbf{j} * QAO^{n^*}_{ij}$$

where  $\sum^{n' < q}$  is the sum over those Non-De Minimis and Non-arbitrage Bids for which v is less than q and  $\sum^{n^* < e}$  is the sum over those Non-De Minimis and Non-arbitrage Offers for which v is less than e.

The Ranked ~~Non-arbitrage~~ Offers numbered 1 to e-1 for which this is true will be defined as Trade Tagged Offers. If  $\phi$  is a fraction rather than 0, then the fraction  $\phi$  of the Ranked ~~Non-arbitrage~~ Offer numbered 1 will be defined as a Trade Tagged Offer.

(e) If

$$\sum^{n'} (-QAB^{n'}_{ij}) > \sum^{n^*} QAO^{n^*}_{ij}$$

where  $\sum^{n'}$  is the sum over those accepted Bids that have not been defined as either De Minimis Accepted Bids nor Arbitrage Accepted Bids and  $\sum^{n^*}$  is the sum over those accepted Offers that have not been defined as either De Minimis Accepted Offers nor Arbitrage Accepted Offers,

then for the smallest value of q such that

$$\sum^{n^* > q} QAO^{n^*}_{ij} \leq BRL_j$$

where  $\sum^{n^* > q}$  is the sum over those Non-De Minimis and Non-arbitrage Offers for which v is greater than q

the Ranked ~~Non-arbitrage~~ Offers numbered  $n'_1$  to  $n'_{q-1}$  will be defined as Trade Tagged Offers and if

$$\sum^{n^* > q} QAO^{n^*}_{ij} = BRL_j$$

then the Ranked ~~Non-arbitrage~~ Bids numbered  $n'_q$  will be defined as a Trade Tagged Bid or if

$$\sum^{n^* > q} QAO^{n^*}_{ij} < BRL_j$$

the fraction  $\gamma$  of  $QAO^{n'_q}_{ij}$  which satisfies

$$\sum^{n^* > q} QAO^{n^*}_{ij} + (1 - \gamma) * QAO^{n'_q}_{ij} = BRL_j$$

will also be defined as a Trade Tagged Offer.

(f) Since  $\sum^{n'} (-QAB^{n'}_{ij}) > \sum^{n^*} QAO^{n^*}_{ij}$  there must exist a number e and a number  $\phi$  (which may be a fraction or zero) for which

$$-\left(\sum^{n^*_{v<e}} QAB^{n^*_{ij}} + j * QAB^{n^*_{ij}}\right) = \sum^{n'_{v<q}} QAO^{n'_{ij}} + g * QAO^{n'_{ij}}$$

where  $\sum^{n^*_{v<e}}$  is the sum over those Non-De Minimis and Non-arbitrage Bids for which v is less than e and  $\sum^{n'_{v<q}}$  is the sum over those Non-De Minimis and Non-arbitrage Offers for which v is less than q

The Ranked Non-arbitrage Bids numbered 1 to e-1 will be defined as Trade Tagged Bids. If  $\phi$  is not equal to zero then the fraction  $\phi$  of the Ranked Non-arbitrage Bid numbered  $n'_1$  will be defined as Trade Tagged Bid.

The following addition is required to the General Glossary in Annex X-1:

"De Minimis Acceptance Threshold": [has the meaning given to that term in Section T1.7.1;](#)

The following addition is required to Table X-2 of Annex X-2:

<a href="#">De Minimis Acceptance Threshold</a>	<a href="#">DMAT<sub>d</sub></a>	<a href="#">MWh</a>	<a href="#">The value established and from time to time revised and approved in accordance with Section T1.7</a>
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