

## SECTION T: SETTLEMENT AND TRADING CHARGES

### 1. GENERAL

#### 1.1 Introduction

1.1.1 This Section T sets out:

- (a) the basis on which Trading Charges for each Trading Party and the Transmission Company will be determined;
- (b) the data required in order to determine such Trading Charges, and the intermediate quantities which are involved in such calculation;
- (c) the processes to be undertaken by the SAA for and in connection with the determination of Trading Charges.

#### 1.2 Obligation and entitlement of Parties

1.2.1 Subject to the provisions of the Code, each Trading Party and the Transmission Company shall be liable to pay to, or shall be entitled to be paid by, the BSC Clearer an amount in respect of Trading Charges for each Settlement Day as determined in accordance with this Section T.

1.2.2 For the purposes of paragraph 1.2.1, the Trading Charges for a Party are as follows:

- (a) for each Trading Party and each Settlement Day:
  - (i) the Daily Party BM Unit Cashflow for that Trading Party, which shall be an amount representing either a credit or a debit to that Trading Party (as determined in accordance with paragraph 1.2.3);
  - (ii) the Daily Party Non-Delivery Charge for that Trading Party, which shall be an amount representing a debit to that Trading Party;
  - (iii) the Daily Party Energy Imbalance Cashflow for that Trading Party, which shall be an amount representing either a credit or a debit to that Trading Party (as determined in accordance with paragraph 1.2.3);
  - (iv) the Daily Party Information Imbalance Charge for that Trading Party, which shall be an amount representing a debit to that Trading Party; and
  - (v) the Daily Party Residual Settlement Cashflow for that Trading Party, which shall be an amount representing either a credit or a debit to that Trading Party (as determined in accordance with paragraph 1.2.3),

and, for each Trading Party and each Settlement Day, the amounts referred to in paragraphs (i) to (v) shall be netted, in accordance with paragraph 5.3.3, to produce a single credit or debit amount for each Trading Party;

- (b) in respect of the Transmission Company and for each Settlement Day, the Daily System Operator BM Cashflow, which shall be a single credit or debit amount (as determined in accordance with paragraph 1.2.3).

1.2.3 For the purposes of paragraph 1.2.2:

(a) in relation to each of:

- (i) the Daily Party BM Unit Cashflow; and
- (ii) the Daily Party Residual Settlement Cashflow;

a positive value of any such Cashflow represents a credit to the relevant Party and a negative value of any such Cashflow represents a debit to the relevant Party; and

(b) in relation to each of:

- (i) the Daily Party Energy Imbalance Cashflow;
- (ii) the Daily System Operator BM Cashflow,

a positive value of any such Cashflow represents a debit to the relevant Party and a negative value of any such Cashflow represents a credit to the relevant Party.

1.2.4 For the avoidance of doubt, the Daily Party Non-Delivery Charge and the Daily Party Information Imbalance Charge shall have positive values and shall represent a debit to the relevant Trading Party.

### **1.3 Data requirements**

1.3.1 This paragraph 1.3 sets out data required from different persons in order to make the determinations and calculations set out in this Section T.

1.3.2 Data required from the Transmission Company are:

- (a) Final Physical Notification Data;
- (b) Bid-Offer Data;
- (c) Acceptance Data;
- (d) Balancing Services Adjustment Data; and
- (e) Applicable Balancing Services Volume Data.

1.3.3 Data required from the CDCA are:

- (a) BM Unit Metered Volumes for BM Units other than Supplier BM Units and Interconnector BM Units;
- (b) Interconnector Metered Volumes;
- (c) the GSP Group Take for each GSP Group.

1.3.4 Data required from the ECVAA are:

- (a) Metered Volume Fixed Reallocations by BM Unit and Subsidiary Energy Account;

- (b) Metered Volume Percentage Reallocations by BM Unit and Subsidiary Energy Account;
  - (c) the Account Bilateral Contract Volume for each Energy Account.
- 1.3.5 Data required from Interconnector Administrators are BM Unit Metered Volumes for the Interconnector BM Units of each Interconnector User for each Interconnector.
- 1.3.6 Data required from the SVAA for each Supplier are BM Unit Allocated Demand Volume.
- 1.3.7 Data required from the CRA are data registered in CRS and relevant to Settlement.
- 1.3.8 Data required from the Market Index Data Provider(s) are Market Index Data.

#### **1.4 Data receipt and validation**

- 1.4.1 Whenever the SAA is required to carry out a Settlement Run, the SAA shall receive and validate (in accordance with BSCP01) the data for the relevant Settlement Day described in paragraph 1.3.
- 1.4.2 Subject to paragraphs 1.4.6, if by the time the SAA is to carry out the Interim Information Settlement Run complete and valid data have not been received by the SAA in accordance with paragraph 1.3 in respect of the relevant Settlement Day, then:
- (a) where the invalid or missing data are not, in the SAA's opinion, a significant proportion of the data required to carry out the Interim Information Settlement Run in respect of that Settlement Day, the SAA shall inform BSCCo and shall input default data (in accordance with BSCP01) for the purposes of producing the Interim Information Settlement Run;
  - (b) where the invalid or missing data are, in the SAA's opinion, a significant proportion of the data required to carry out the Interim Information Settlement Run in respect of that Settlement Day:
    - (i) if the SAA considers that the invalid data will be corrected and re-submitted or the missing data will be submitted by the end of the next following Business Day, the SAA shall inform BSCCo and shall delay the Interim Information Settlement Run until such data is corrected and re-submitted or submitted (as the case may be);
    - (ii) if:
      - (1) the SAA does not consider that the invalid data will be corrected and re-submitted or the missing data will be submitted by the end of the next following Business Day; or
      - (2) in the case of paragraph (i) above, the SAA does not receive such data by the end of the next following Business Day,

the SAA shall inform BSCCo and BSCCo shall determine whether default data should be substituted for the invalid or missing data (in accordance with BSCP01) for the purposes of producing the Interim Information Settlement Run or whether production of the Interim Information Settlement Run should be delayed for a specified period in order that complete and valid data may be obtained by the SAA;

- (c) the SAA shall continue to request the person responsible for submitting such data to resubmit and/or correct the data.
- 1.4.3 For the purposes of paragraph 1.4.2, "significant" shall be interpreted having regard to the purpose for which the Interim Information Settlement Run is produced, namely to provide a reasonably accurate reflection of what is expected to be contained in the Initial Settlement Run in respect of the relevant Settlement Day (taking into account the fact that the Interim Information Settlement Run does not include any data in respect of Supplier Volume Allocation).
- 1.4.4 Paragraph 1.4.2 shall not apply to data in respect of Supplier Volume Allocation.
- 1.4.5 Subject to paragraphs 1.4.6 and 1.4.7, if at any time from the Business Day prior to the day on which the SAA is to carry out the Initial Settlement Run the SAA forms the view that it does not expect to receive substantially complete and valid data in accordance with paragraph 1.3 in respect of the relevant Settlement Day in time to carry out such Settlement Run in accordance with the Settlement Calendar, then:
- (a) the SAA shall inform BSCCo; and
- (b) BSCCo shall determine whether default data should be substituted for the invalid or missing data (in accordance with BSCP01) for the purposes of producing the Initial Settlement Run or whether production of the Initial Settlement Run should be delayed for a specified period in order that complete and valid data may be obtained by the SAA.
- 1.4.6 Where and for so long as any of paragraphs (a), (b), (c) or (d) of Section K5.4.6 applies in respect of an Interconnector, all BM Unit Metered Volumes for the Interconnector BM Units of each Interconnector User for that Interconnector (whether or not any such volumes are submitted under paragraph 1.3.5) shall be set to zero.
- 1.4.7 For those Supplier BM Units with no associated SVA Metering Systems (and in respect of which no data is submitted by the SVAA as a result), the BM Unit Metered Volume shall be zero.

## 1.5 Market Index Definition Statement

- 1.5.1 The Panel shall establish by no later than the commencement date, and have in force at all times thereafter, a statement having regard to the principles set out in paragraph 1.5.3 and which is approved by the Authority (such statement, as revised from time to time in accordance with this paragraph 1.5, being the "**Market Index Definition Statement**").
- 1.5.2 The Market Index Definition Statement shall contain the following:
- (a) nomination of the particular entity or entities (each a "**Market Index Data Provider**") which shall be responsible for making available Market Index Data in respect of each Settlement Period for the purposes of paragraph 4.4;
- (b) full definition of the particular data and methodology to be used by the Market Index Data Provider(s) in determining the Market Index Data for each Settlement Period (including, where applicable, identification of the particular products, period of trading and any relevant weighting to be applied); and
- (c) definition and determination, for the purposes of paragraph 4.4.4B, of a minimum liquidity requirement per Settlement Period (expressed in MWh) in respect of each Market Index Data Provider individually (in each case, an "**Individual Liquidity Threshold**") which, for the avoidance of doubt, may be

zero in any case and may vary in any case according to the Settlement Period and/or the Settlement Day or otherwise.

1.5.3 The principles referred to in paragraph 1.5.1 are:

- (a) the Market Index Data is to be used in Settlement to calculate a price (expressed in £/MWh) in respect of each Settlement Period (in accordance with paragraphs 4.4.5(b) and 4.4.6(b)) which reflects the price of wholesale electricity in Great Britain for delivery in respect of that Settlement Period in the short term market, in circumstances where the levels of liquidity in the market during that period and in respect thereof are not exceptionally low;
- (b) for the purposes of paragraph 1.5.3(a):
  - (i) 'reflects' means 'provides a reasonable reflection of';
  - (ii) references to the 'market' are to the market in general and not to any particular market or particular type of market (organised or otherwise);
  - (iii) 'short term' is to be taken as meaning, in respect of a Settlement Period, a period of hours or days immediately prior to Gate Closure but in any event no more than three Business Days prior to Gate Closure;
  - (iv) 'delivery' refers to transactions where the intended method of performance is by way of submission of Energy Contract Volume Notifications or Metered Volume Reallocation Notifications; and
  - (v) the price of wholesale electricity for delivery in respect of a Settlement Period may include the price for a block of Settlement Periods which include that Settlement Period, provided the block comprises no more than 24 hours in total.

1.5.4 The Panel shall review the Market Index Definition Statement:

- (a) from time to time, and in any event at least once every 12 months; and/or
- (b) if any change in circumstances occurs or is expected to occur which affects or is likely to affect in any material way the provision of Market Index Data by a Market Index Data Provider; and/or
- (c) where necessary in order to give full and timely effect to any relevant Approved Modification by the Implementation Date for that Approved Modification,

by reference to the principles set out in paragraph 1.5.3, and shall make such revisions to the Market Index Definition Statement as may be determined by it and approved by the Authority following such review.

1.5.5 In establishing and reviewing the Market Index Definition Statement, the Panel shall:

- (a) investigate what data exists and is available in respect of the market referred to in paragraph 1.5.3;
- (b) consult with Parties and other interested parties in connection with the Market Index Definition Statement and have due regard to any representations made and not withdrawn during such consultations;

- (c) provide to the Authority copies of any written representations so made and not withdrawn.
- 1.5.6 Where a revised Market Index Definition Statement is approved by the Authority:
- (a) such revised Market Index Definition Statement shall be effective from such date as the Panel shall determine with the approval of the Authority (and shall apply in respect of Settlement Days from that date); and
  - (b) the Panel Secretary shall give notice of such date to each Party, the SAA and the BMRA.
- 1.5.7 BSCCo shall ensure that a copy of the Market Index Definition Statement (as revised from time to time) is:
- (a) sent to each Party, the SAA and the BMRA; and
  - (b) published, and made available on request to any person.
- 1.5.8 For the purposes of this paragraph 1.5, the "**commencement date**" is the Settlement Day with effect from which, pursuant to paragraphs 4.4.5(b) and 4.4.6(b), Market Index Price and Market Index Volume data is first to be applied in determining energy imbalance prices for the purposes of Settlement.

#### **1.5A Provision of Market Index Data**

- 1.5A.1 The Market Index Data to be provided by each Market Index Data Provider in respect of each Settlement Period shall comprise for that Settlement Period:
- (a) a volume expressed in MWh; and
  - (b) a price expressed in £/MWh,
- in each case determined in accordance with the Market Index Definition Statement.
- 1.5A.2 For each Settlement Period, each Market Index Data Provider will determine its Market Index Data in accordance with the Market Index Definition Statement and submit such data to:
- (a) the BMRA, such as to be received by the BMRA no later than the end of the Settlement Period to which the data pertains;
  - (b) the SAA and BSCCo, by way of daily report containing the data separately for each Settlement Period in the Settlement Day to which the data pertains and such as to be received by the SAA and BSCCo no later than the end of the Business Day next following the relevant Settlement Day.
- 1.5A.3 Without prejudice to paragraph 4.4.4B, if in respect of a Settlement Period and a Market Index Data Provider the Individual Liquidity Threshold for that Market Index Data Provider (as determined in accordance with the Market Index Definition Statement) exceeds the Market Index Volume which would otherwise have been submitted by it, the Market Index Data Provider will instead submit a Market Index Volume with a value of zero.
- 1.5A.4 Without prejudice to any rights or remedies available to BSCCo under the Market Index Data Provider Contract, if a Market Index Data Provider is unable to determine and/or

submit its Market Index Data or to do so within the timescales set out in paragraph 1.5A.2, it will:

- (a) inform BSCCo, the BMRA and the SAA immediately, giving details of the cause of such inability, when it expects to be able to determine and submit such data and the Settlement Periods likely to be affected;
- (b) endeavour to determine and submit such data as soon as it reasonably can, in which case such data shall be taken into account in the next Settlement Run for the relevant Settlement Day after such submission.

1.5A.5 In respect of any Settlement Day for which the SAA does not receive Market Index Data from a Market Index Data Provider:

- (a) the provisions of paragraph 1.4, other than paragraph 1.4.1, shall not apply (and the default rules under paragraph 4.4.4B shall apply instead); and
- (b) the SAA shall inform BSCCo.

1.5A.6 Without prejudice to Section W1.3.2(c)(iv), where, following the submission by a Market Index Data Provider of Market Index Data in respect of a Settlement Period in accordance with paragraph 1.5A.2, a change is made to any underlying data item of the Market Index Data Provider such that the Market Index Data so submitted is no longer the data which would have been submitted by it in respect of that Settlement Period in accordance with the Market Index Definition Statement:

- (a) the Market Index Data Provider will promptly:
  - (i) inform BSCCo of such change and its effect on the Market Index Data;
  - (ii) resubmit the Market Index Data for the relevant Settlement Period(s) taking account of such change; and
- (b) where the Market Index Data Provider resubmits any Market Index Data as provided in paragraph (a)(ii) above, such revised Market Index Data shall be taken into account in the next Settlement Run for the relevant Settlement Day after such submission.

1.5A.7 It shall be the responsibility of BSCCo to enter into a contract with each person nominated as a Market Index Data Provider for the provision of Market Index Data in accordance with this paragraph 1.5A and for these purposes:

- (a) a Market Index Data Provider shall not be considered to be a 'BSC Agent' under the Code;
- (b) notwithstanding paragraph 1.5A.7(a), the provisions of Sections E2.1.2, E2.2.4, E2.2.5, E2.2.6, E2.4, E2.6 and Section E3 shall apply to each Market Index Data Provider Contract and to the provision of Market Index Data as if references to BSC Agent included the Market Index Data Provider and references to a BSC Agent Contract included the Market Index Data Provider Contract subject to the following:
  - (i) provisions in Section E2 and E3 relating to the selection and appointment of BSC Agents shall not apply (the selection and appointment of Market Index Data Provider(s) being prescribed in the Market Index Definition Statement);

- (ii) references in Section E2 and E3 to BSC Service Descriptions shall be disregarded; and
- (iii) the provisions of Section E3.2 apply to a Market Index Data Provider in its capacity as such and not in any other capacity which it may have under the Code.

1.5A.8 It is recognised that a Market Index Data Provider may (but need not) be a Party; where a Market Index Data Provider is a Party:

- (a) such Party shall have no rights, benefits, obligations or liability in its capacity as Market Index Data Provider to or against any other Party under the Code, but without prejudice to its rights and obligations:
  - (i) as Market Index Data Provider under its Market Index Data Provider Contract; and
  - (ii) in any other capacity under the Code;
- (b) references to Party or Parties in the Code shall be construed as excluding any Market Index Data Provider (which is a Party) in its capacity as a Market Index Data Provider (but as including such person in any other capacity it may have under the Code);
- (c) the provision of Market Index Data shall be made pursuant to the Market Index Data Provider Contract and not pursuant to the Code and, accordingly, such data shall not be considered relevant party data for the purposes of Section H4.6;
- (d) the provision, disclosure and use of any market data relating to a Party which is used in or in connection with the determination of Market Index Data by a Market Index Data Provider shall not be considered or construed as being made pursuant to any provision of the Code.

1.5A.9 Notwithstanding paragraph 1.5A.7(a):

- (a) Section H4.6 shall apply to Market Index Data Providers as if references to BSC Agents included Market Index Data Providers and references to BSC Agent Contracts included Market Index Data Provider Contracts;
- (b) references to BSC Agents and BSC Agent Contracts in Section W shall be deemed to include, respectively, Market Index Data Providers and Market Index Data Provider Contracts.

1.5A.10 For the purposes of the Code:

- (a) references to a Market Index Data Provider are to a Market Index Data Provider nominated in the version of the Market Index Definition Statement prevailing at the time in question;
- (b) in respect of a Market Index Data Provider, references to Market Index Data are to such data as that Market Index Data Provider is to submit in accordance with the Market Index Definition Statement.

## 1.6 Single imbalance price

- 1.6.1 Where, for the purposes of any Contingency Provisions, a single imbalance price is to apply in relation to any Settlement Period:
- (a) paragraph 1.6.2 shall apply;
  - (b) the provisions of paragraphs 4.4.5 and 4.4.6 in relation to the determination of System Buy Price and System Sell Price shall not apply;
  - (c) for all purposes of the Code, the System Buy Price and the System Sell Price for that Settlement Period shall be the same and shall have the value established in accordance with paragraph 1.6.2 (and shall be deemed to have been determined under paragraph 4.4).
- 1.6.2 Where this paragraph applies, the Panel shall determine, in its opinion, subject to the approval of the Authority, what is or would have been the market price for bulk electricity in the relevant Settlement Period; and for these purposes:
- (a) bulk electricity means electricity traded under contracts which may be performed by the notification of Energy Contract Volumes in accordance with Section P;
  - (b) the Panel may make reference for the purposes of its determination to reported prices and price indices for bulk electricity for any Settlement Period (on any day) which the Panel considers to be comparable, and to equivalent prices and indices relating to periods prior to the Go-Live Date (making appropriate adjustments in respect of any differing treatment of transmission losses and related matters).
- 1.6.3 The Panel shall wherever practicable make its determination in time for such determinations to be taken into account in the Initial Settlement Run in relation to the relevant Settlement Period.
- 1.6.4 BSCCo shall promptly notify the Panel's determination to the SAA and to each Party.

## 1.7 De Minimis Acceptance Threshold

- 1.7.1 For the purposes of the Code the "**De Minimis Acceptance Threshold**" (DMAT) 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;

## 1.8 Price Average Reference Volume

- 1.8.1 For the purposes of the Code the "Price Average Reference Volume" (PAR) shall be 500 MWh.

## 2. ALLOCATION OF TRANSMISSION LOSSES

### 2.1 Delivering and Offtaking Trading Units

- 2.1.1 For the purpose of scaling for transmission losses, in respect of each Settlement Period,

- (a) a Trading Unit is a "**delivering**" Trading Unit when  $\sum_i QM_{ij} > 0$  and  
 (b) a Trading Unit is an "**offtaking**" Trading Unit when  $\sum_i QM_{ij} \leq 0$

where  $\sum_i$  represents the sum over all BM Units belonging to that Trading Unit.

### 2.2 Transmission Loss Factors

- 2.2.1 For the purposes of the Code, the Transmission Loss Factor for each BM Unit, and factor  $\alpha$ , shall be as follows:

- (a)  $TLF_{ij} = 0$  for all BM Units, and  
 (b)  $\alpha = 0.45$ .

### 2.3 Determination of the Transmission Loss Multipliers

- 2.3.1 In respect of each Settlement Period, for each BM Unit, the Transmission Loss Multiplier shall be calculated as follows:

- (a) for all BM Units belonging to Trading Units which in the Settlement Period are delivering Trading Units:

$$TLM_{ij} = 1 + TLF_{ij} + TLMO_j^+$$

- (b) for all BM Units belonging to Trading Units which in the Settlement Period are offtaking Trading Units:

$$TLM_{ij} = 1 + TLF_{ij} + TLMO_j^-$$

where:

$$TLMO_j^+ = - \{ \alpha(\sum^+ QM_{ij} + \sum^- QM_{ij}) + \sum^+ (QM_{ij} * TLF_{ij}) \} / \sum^+ QM_{ij}; \text{ and}$$

$$TLMO_j^- = \{ (\alpha-1)(\sum^+ QM_{ij} + \sum^- QM_{ij}) - \sum^- (QM_{ij} * TLF_{ij}) \} / \sum^- QM_{ij}; \text{ and}$$

$\sum^+$  represents the sum over all BM Units belonging to Trading Units that are delivering Trading Units in the Settlement Period;

$\sum^-$  represents the sum over all BM Units belonging to Trading Units that are offtaking Trading Units in the Settlement Period.

### 3. SETTLEMENT OF BALANCING MECHANISM ACTIONS

#### 3.1 Conversion of Data Received from the Transmission Company

3.1.1 It is recognised that Final Physical Notification Data, Bid-Offer Pairs and Acceptance Data derived from data submitted or determined under the Grid Code (and received by the SAA from the Transmission Company) will contain values with associated from/to times whereas the equivalent data required for the purposes of this Section T are required to contain point values (as defined in Annex X-2).

3.1.2 Accordingly, the SAA shall convert such data received from the Transmission Company for the purposes of Settlement using the following conventions:

- (a) in the case of Final Physical Notification Data:
  - (i) each value, comprising a MW 'from' level and associated 'from' time and a MW 'to' level and associated 'to' time, shall be allocated a Point Value Identification Number;
  - (ii) the 'to' MW level and associated 'to' time shall be a Point FPN ( ${}^f\text{FPN}_{ijt}$ ) which is allocated a Point Value Identification Number of '1';
  - (iii) the 'from' MW level and associated 'from' time shall be a Point FPN ( ${}^f\text{FPN}_{ijt}$ ) which is allocated a Point Value Identification Number of '2';
  - (iv) the associated time of each Point FPN with a Point Value Identification Number of 2 shall be equal to the associated time of the Point FPN with a Point Value Identification Number of 1 of the immediately preceding pair of Point FPNs;
- (b) in the case of Bid-Offer Pairs:
  - (i) each value, comprising a MW 'from' level and associated 'from' time and a MW 'to' level and associated 'to' time, shall be allocated a Point Value Identification Number;
  - (ii) the 'to' MW level and associated 'to' time shall be a Point Bid-Offer Volume ( ${}^f\text{qBO}^n_{ijt}$ ) which is allocated a Point Value Identification Number of '1';
  - (iii) the 'from' MW level and associated 'from' time shall be a Point Bid-Offer Volume ( ${}^f\text{qBO}^n_{ijt}$ ) which is allocated a Point Value Identification Number of '2';
  - (iv) the associated time of each Point Bid-Offer Volume with a Point Value Identification Number of 2 shall be equal to the associated time of the Point Bid-Offer Volume with a Point Value Identification Number of 1 of the immediately preceding pair of Point Bid-Offer Volumes;
- (c) in the case of Acceptance Data:
  - (i) for each Acceptance Volume Pair, a Point Acceptance Volume ( $\text{qA}^k_{it}$ ) shall be created where the MW level is set equal to the 'from' MW level of the Acceptance Volume Pair, the time t shall be set

equal to the 'from' time of the Acceptance Volume Pair and the value of  $k$  shall be set equal to the Bid-Offer Acceptance Number of the Acceptance Volume Pair; and

- (ii) for each Acceptance Volume Pair, a Point Acceptance Volume ( $qA_{it}^k$ ) shall be created where the MW level is set equal to the 'to' MW level of the Acceptance Volume Pair, the time  $t$  shall be set equal to the 'to' time of the Acceptance Volume Pair and the value of  $k$  shall be set equal to the Bid-Offer Acceptance Number of the Acceptance Volume Pair.

3.1.3 References in the succeeding paragraphs of this Section T to any point values submitted or issued by the Transmission Company (and similar expressions) shall be interpreted as references to the relevant to/from values submitted or issued by the Transmission Company and converted into point values by the SAA pursuant to this paragraph 3.1.

### 3.1A Continuous Acceptance Duration ( $CAD^k_i$ )

3.1A.1 In relation to each Acceptance,  $k$ , for a particular BM Unit, another Acceptance for the same BM Unit is "related" to Acceptance  $k$  where such other Acceptance has a Bid-Offer Acceptance Time that falls within the period:

- (a) from and including the spot time at the start of the Settlement Period which falls three Settlement Periods prior to the Settlement Period in which the Bid-Offer Acceptance Time for Acceptance  $k$  falls, and
- (b) to and including the spot time at the end of the Settlement Period which falls three Settlement Periods after the Settlement Period in which the Bid-Offer Acceptance Time for Acceptance  $k$  falls.

3.1A.2 In relation to each Acceptance  $k$ , another Acceptance is "continuous" with Acceptance  $k$  if it is related to Acceptance  $k$ , and:

- (a) the spot time associated with:
  - (i) the first Point Acceptance Volume of the Acceptance is earlier, and
  - (ii) the last Point Acceptance Volume of the Acceptance is not earlier than the spot time associated with the first Point Acceptance Volume of Acceptance  $k$ ; or
- (b) the spot time associated with:
  - (i) the last Point Acceptance Volume of the Acceptance is later, and
  - (ii) the first Point Acceptance Volume of the Acceptance is not later than the spot time associated with the last Point Acceptance Volume of Acceptance  $k$ ; or
- (c) the Acceptance is continuous (in accordance with paragraph (a) or (b)) with another Acceptance which is determined (including, for the avoidance of doubt, by virtue of this paragraph (c)) to be a continuous Acceptance in relation to Acceptance  $k$ .

- 3.1A.3 In relation to each Acceptance  $k$ , for a particular BM Unit, the Continuous Acceptance Duration ( $CAD^k_i$ ) shall be the duration of the period:
- (a) commencing at the earliest spot time associated with:
    - (i) any value of Point Acceptance Volume for Acceptance  $k$ ; or
    - (ii) any Point Acceptance Volume for any Acceptance that is a continuous Acceptance in relation to Acceptance  $k$ , and
  - (b) ending at the latest spot time associated with:
    - (i) any value of Point Acceptance Volume for Acceptance  $k$ ; or
    - (ii) any Point Acceptance Volume for any Acceptance that is a continuous Acceptance in relation to Acceptance  $k$ .

### **3.1B Continuous Acceptance Duration Limit (CADL)**

- 3.1B.1 For the purposes of the Code the "Continuous Acceptance Duration Limit" (CADL) shall be 15 minutes or such other amount (in minutes) determined by the Panel and approved by the Authority.
- 3.1B.2 The Panel may revise such amount from time to time subject to the approval of the Authority.
- 3.1B.3 In revising the amount of the Continuous Acceptance Duration Limit from time to time, the Panel shall consult with Parties and consider the views expressed in the course of such consultation prior to making its determination (and shall provide a detailed summary of such views to the Authority).

### **3.2 Establishment of final physical notification ( $FPN_{ij}(t)$ )**

- 3.2.1 In respect of each Settlement Period, for each BM Unit, the value of  $FPN_{ij}(t)$  for spot times falling within the Settlement Period shall be established by linear interpolation of the values of Point FPN ( $fFPN_{ij}$ ), established for that Settlement Period pursuant to paragraph 3.1.
- 3.2.2 If, for a particular time  $t$  no value of Point FPN exists within the Settlement Period for which the associated time is at or after time  $t$ , the value of the  $FPN_{ij}(t)$  shall be equal to the value of the Point FPN submitted for the spot time most recently preceding time  $t$  and, where more than one Point FPN exists for that spot time, the Point FPN with the higher value of the Point Value Identification Number  $f$ .
- 3.2.3 If no value of Point FPN exists for which the associated time is at or before a particular time, the value of  $FPN_{ij}(t)$  shall be set equal to zero.

### **3.3 Establishment of Bid-Offer Volume ( $qBO^n_{ij}(t)$ )**

- 3.3.1 In respect of each Settlement Period, for each BM Unit, for any value of Bid-Offer Pair Number, the Bid-Offer Volume ( $qBO^n_{ij}(t)$ ) at any spot time shall be established by linear interpolation from the values of Point Bid-Offer Volume ( $fqBO^n_{ij}$ ) submitted for spot times in a Settlement Period.
- 3.3.2 If, for a particular time no subsequent value of Point Bid-Offer Volume has been submitted within the Settlement Period, then the value of Bid-Offer Volume shall be equal to the

value of the Point Bid-Offer Volume submitted for the time most recently prior to the time in question, and this value shall apply until the end of the Settlement Period.

### **3.4 Establishment of Acceptance Volume ( $qA_{ij}^k(t)$ )**

3.4.1 The calculations of Acceptance Volume undertaken with respect to a particular Acceptance for a particular BM Unit, described in paragraphs 3.4.2 to 3.4.4, will be made for each Acceptance for that BM Unit, and the Acceptances will be processed in the order in which they are issued.

3.4.2 In respect of each Settlement Period that falls within the Balancing Mechanism Window Period, for each BM Unit, the Acceptance Volume ( $qA_{ij}^k(t)$ ) for spot times shall be established by linear interpolation from the Point Acceptance Volumes  $qA_{it}^k$  issued by the Transmission Company for that Acceptance.

3.4.3 For spot times which are both:

- (a) within the Balancing Mechanism Window Period; and
- (b) prior to the first time associated with the value of Point Acceptance Volume for the Acceptance,

for each BM Unit, the value of the Acceptance Volume shall be set to the last calculated value of Acceptance Volume for those spot times. If no such previously calculated value of Acceptance Volume exists, then the Acceptance Volume shall be set to the value of  $FPN_{ij}(t)$  for those spot times.

3.4.4 For spot times which are both:

- (a) within the Balancing Mechanism Window Period; and
- (b) after the last time associated with a value of Point Acceptance Volume for the Acceptance,

for each BM Unit, the value of the Acceptance Volume shall be set to the last calculated value of Acceptance Volume for those spot times. If no such previously calculated value of Acceptance Volume exists, then the Acceptance Volume shall be set to the value of  $FPN_{ij}(t)$  for those spot times.

### **3.4A Establishment of Bid-Offer Upper Range ( $BOUR_{ij}^n(t)$ ) and Bid-Offer Lower Range ( $BOLR_{ij}^n(t)$ ) in relation to FPN and Submitted Bid-Offer Pairs**

3.4A.1 In respect of each Settlement Period, for each BM Unit, for each Submitted Bid-Offer Pair for which the associated Bid-Offer Pair Number  $n$  is greater than zero (if any), other than the Submitted Bid-Offer Pair with the greatest Bid-Offer Pair Number which is greater than zero, the Bid-Offer Upper Range for each spot time in the Settlement Period shall be established as follows:

(a) 
$$BOUR_{ij}^n(t) = FPN_{ij}(t) + \sum^{n+} qBO_{ij}^n(t)$$

where  $\sum^{n+}$  represents the sum over the range of positive Bid-Offer Pair Numbers 1 to  $n$  of Submitted Bid-Offer Pairs; and

(b) 
$$BOUR_{ij}^0(t) = FPN_{ij}(t)$$

3.4A.2 In respect of each Settlement Period, for each BM Unit, for the Submitted Bid-Offer Pair with the greatest Bid-Offer Pair Number  $n$  which is greater than zero (if any), the Bid-Offer Upper Range for each spot time in the Settlement Period shall be established as follows:

- (a) if  $FPN_{ij}(t) \geq 0$  and  $qA_{ij}^k(t) > FPN_{ij}(t) + \Sigma^{n+} qBO_{ij}^n(t)$  for any Bid-Offer Acceptance Number  $k$ ,

then:

$$BOUR_{ij}^n(t) = \text{Max}^k(qA_{ij}^k(t))$$

where  $\text{Max}^k(qA_{ij}^k(t))$  represents the maximum value of  $qA_{ij}^k(t)$  for any value of  $k$  for BM Unit  $i$  at spot time  $t$  in Settlement Period  $j$ ;

- (b) in any other case:

$$BOUR_{ij}^n(t) = FPN_{ij}(t) + \Sigma^{n+} qBO_{ij}^n(t)$$

where  $\Sigma^{n+}$  represents the sum over the range of positive Bid-Offer Pair Numbers 1 to  $n$  of Submitted Bid-Offer Pairs.

3.4A.3 In respect of each Settlement Period, for each BM Unit, for Submitted Bid-Offer Pairs for which the associated Bid-Offer Pair Number  $n$  is less than zero, other than the Submitted Bid-Offer Pair with the least Bid-Offer Pair Number which is less than zero, the Bid-Offer Lower Range for each spot time in the Settlement Period shall be established as follows:

- (a)  $BOLR_{ij}^n(t) = FPN_{ij}(t) + \Sigma^{n-} qBO_{ij}^n(t)$

where  $\Sigma^{n-}$  represents the sum over the range of negative Bid-Offer Pair Numbers -1 to  $n$  of Submitted Bid-Offer Pairs; and

- (b)  $BOLR_{ij}^0(t) = FPN_{ij}(t)$ .

3.4A.4 In respect of each Settlement Period, for each BM Unit, for the Submitted Bid-Offer Pair with the least Bid-Offer Pair Number  $n$  which is less than zero (if any), the Bid-Offer Lower Range for each spot time in the Settlement Period shall be established as follows:

- (a) if  $FPN_{ij}(t) \leq 0$  and  $qA_{ij}^k(t) < FPN_{ij}(t) + \Sigma^{n-} qBO_{ij}^n(t)$  for any Bid-Offer Acceptance Number  $k$ ,

then:

$$BOLR_{ij}^n(t) = \text{Min}^k(qA_{ij}^k(t))$$

where  $\text{Min}^k(qA_{ij}^k(t))$  represents the minimum value of  $qA_{ij}^k(t)$  for any value of  $k$  for BM Unit  $i$  at spot time  $t$  in Settlement Period  $j$ ;

- (b) in any other case:

$$BOLR_{ij}^n(t) = FPN_{ij}(t) + \Sigma^{n-} qBO_{ij}^n(t)$$

where  $\Sigma^{n-}$  represents the sum over the range of negative Bid-Offer Pair Numbers -1 to  $n$  of Submitted Bid-Offer Pairs.

### 3.4B Creation of Bid-Offer Pairs

3.4B.1 In respect of each Settlement Period, for each BM Unit, a Bid-Offer Pair shall be created in the following circumstances:

- (a) if for any spot time  $t$ ,
- (i)  $FPN_{ij}(t) > 0$ ; and
  - (ii) there exists a Submitted Bid-Offer Pair with a Bid-Offer Pair Number of less than zero; and
  - (iii)  $qA_{ij}^k(t) < FPN_{ij}(t) + \Sigma^{n-} qBO_{ij}^n(t)$  for any value of  $k$ ;

where  $\Sigma^{n-}$  represents the sum over the range of negative Bid-Offer Pair Numbers for all Submitted Bid-Offer Pairs;

then a Bid-Offer Pair shall be created with a Bid-Offer Pair Number  $n-1$ , where  $n-1$  has a negative value equal to 1 less than the lowest Submitted Bid-Offer Pair Number;

- (b) if for any spot time  $t$ ,
- (i)  $FPN_{ij}(t) < 0$ ; and
  - (ii) there exists a Submitted Bid-Offer Pair with a Bid-Offer Pair Number of greater than zero; and
  - (iii)  $qA_{ij}^k(t) > FPN_{ij}(t) + \Sigma^{n+} qBO_{ij}^n(t)$  for any value of  $k$ ;

where  $\Sigma^{n+}$  represents the sum over the range of positive Bid-Offer Pair Numbers for all Submitted Bid-Offer Pair;

then a Bid-Offer Pair shall be created with a Bid-Offer Pair Number  $n+1$ , where  $n+1$  has a positive value equal to 1 greater than the highest Submitted Bid-Offer Pair Number;

- (c) if for any spot time  $t$ ,
- (i) there are no Submitted Bid-Offer Pairs with negative Bid-Offer Pair Numbers; and
  - (ii)  $qA_{ij}^k(t) < FPN_{ij}(t)$  for any value of  $k$ ;

then an Unsubmitted Bid-Offer Pair shall be created with a Bid-Offer Pair Number  $n$ , equal to  $-1$ ;

- (d) if for any spot time  $t$ ,
- (i) there are no Submitted Bid-Offer Pairs with positive Bid-Offer Pair Numbers; and
  - (ii)  $qA_{ij}^k(t) > FPN_{ij}(t)$  for any value of  $k$ ;

then an Unsubmitted Bid-Offer Pair shall be created with a Bid-Offer Pair Number  $n$ , equal to 1.

3.4B.2 A Bid-Offer Pair created pursuant to paragraph 3.4B.1 shall be referred to as an **"Unsubmitted Bid-Offer Pair"**.

3.4B.3 In respect of each Unsubmitted Bid-Offer Pair with Bid-Offer Pair Number n:

- (a) the Offer Price ( $PO_{ij}^n$ ) and the Bid Price ( $PB_{ij}^n$ ) shall both be £0.00/MWh; and
- (b) the 'from' MW level and the 'to' MW level associated with the spot time at the start of the Settlement Period, and the spot time at the end of the Settlement Period respectively shall both be 0MW.

### 3.5 Establishment of Bid-Offer Upper Range ( $BOUR_{ij}^n(t)$ ) and Bid-Offer Lower Range ( $BOLR_{ij}^n(t)$ ) in relation to Unsubmitted Bid-Offer Pairs

3.5.1 In respect of each Settlement Period, for each BM Unit, for the Unsubmitted Bid-Offer Pair with a Bid-Offer Pair Number n which is greater than zero (if any), the Bid-Offer Upper Range for all spot times in the Settlement Period shall be established as follows:

- (a) if there are no Submitted Bid-Offer Pairs with Bid-Offer Pair Numbers greater than zero,

then:

$$BOUR_{ij}^1(t) = \text{Max}\{FPN_{ij}(t), \text{Max}^k(qA_{ij}^k(t))\}$$

- (b) if there are one or more Submitted Bid-Offer Pairs with Bid-Offer Pair Numbers greater than zero,

then:

- (i) if  $FPN_{ij}(t) < 0$ , then

$$BOUR_{ij}^n(t) = \text{Max}\{FPN_{ij}(t) + \Sigma^{ns+} qBO_{ij}^n(t), \text{Max}^k(qA_{ij}^k(t))\}$$

where  $\Sigma^{ns+}$  represents the sum over the range of positive Bid-Offer Pair Numbers for all Submitted Bid-Offer Pairs;

- (ii) in any other case,  $BOUR_{ij}^n(t) = FPN_{ij}(t) + \Sigma^{n+} qBO_{ij}^n(t)$

where  $\Sigma^{n+}$  represents the sum over the range of positive Bid-Offer Pair Numbers for all Submitted Bid-Offer Pairs and all Unsubmitted Bid-Offer Pairs;

where  $\text{Max}^k(qA_{ij}^k(t))$  represents the maximum value of  $qA_{ij}^k(t)$  for any value of k for BM Unit i at spot time t in Settlement Period j and n is the Bid-Offer Pair Number of the Unsubmitted Bid-Offer Pair.

3.5.2 In respect of each Settlement Period, for each BM Unit, for the Unsubmitted Bid-Offer Pair with a Bid-Offer Pair Number n which is less than zero (if any), the Bid-Offer Lower Range for all spot times in the Settlement Period shall be established as follows:

- (a) if there are no Submitted Bid-Offer Pairs with Bid-Offer Pair Numbers less than zero, then

$$BOLR_{ij}^{-1}(t) = \text{Min}\{FPN_{ij}(t), \text{Min}^k(qA_{ij}^k(t))\}.$$

- (b) if there are one or more Submitted Bid-Offer Pairs with Bid-Offer Pair Numbers less than zero, then

- (i) if  $FPN_{ij}(t) > 0$ , then:

$$BOLR_{ij}^n(t) = \text{Min} \{ FPN_{ij}(t) + \sum^{ns-} qBO_{ij}^n(t), \text{Min}^k(qA_{ij}^k(t)) \}$$

where  $\sum^{ns-}$  represents the sum over the range of all negative Bid-Offer Pair Numbers for each Submitted Bid-Offer Pair;

- (ii) in any other case:

$$BOLR_{ij}^n(t) = FPN_{ij}(t) + \sum^{n-} qBO_{ij}^n(t)$$

where  $\sum^{n-}$  represents the sum over the range of all negative Bid-Offer Pair Numbers for Submitted Bid-Offer Pairs and all Unsubmitted Bid-Offer Pairs;

where  $\text{Min}^k(qA_{ij}^k(t))$  represents the minimum value of  $qA_{ij}^k(t)$  for any value of  $k$  for BM Unit  $i$  at spot time  $t$  in Settlement Period  $j$  and  $n$  is the Bid-Offer Pair Number of the Unsubmitted Bid-Offer Pair.

### 3.6 Determination of Accepted Bid-Offer Volume ( $qABO_{ij}^{kn}(t)$ )

3.6.1 In respect of each Settlement Period, for each BM Unit, the volume (in MW) of Bid or Offer from the Bid-Offer Pair accepted as a result of a particular Acceptance shall be the Accepted Bid-Offer Volume and shall be established as follows:

- (a) For  $n > 0$ ,

$$qABO_{ij}^{kn}(t) = \max \{ \min (qA_{ij}^k(t), BOUR_{ij}^n(t), BOUR_{ij}^{n-1}(t))$$

$$- \max \{ \min (qA_{ij}^{k-}(t), BOUR_{ij}^n(t), BOUR_{ij}^{n-1}(t)) \}, \text{ and}$$

- (b) For  $n < 0$ ,

$$qABO_{ij}^{kn}(t) = \min \{ \max (qA_{ij}^k(t), BOLR_{ij}^n(t), BOLR_{ij}^{n+1}(t))$$

$$- \min \{ \max (qA_{ij}^{k-}(t), BOLR_{ij}^n(t), BOLR_{ij}^{n+1}(t)) \}$$

where, from all Acceptances for which an Acceptance Volume has been determined for the Settlement Period,  $k$ - represents that Acceptance with the Bid-Offer Acceptance Time most recently preceding that of the Acceptance.

3.6.2 If there is no Acceptance for which an Acceptance Volume has been determined in the Settlement Period which has a Bid-Offer Acceptance Time that precedes that of the Acceptance,  $qA_{ij}^{k-}(t)$  shall be set equal to  $FPN_{ij}(t)$ .

### 3.7 Accepted Offer Volume ( $qAO_{ij}^{kn}(t)$ ) and Accepted Bid Volume ( $qAB_{ij}^{kn}(t)$ )

3.7.1 In respect of each Settlement Period, for each BM Unit, the volume (in MW) of an Offer accepted as a result of an Acceptance at spot times within the Settlement Period shall be the Accepted Offer Volume and shall be established as follows:

$$qAO_{ij}^{kn}(t) = \max (qABO_{ij}^{kn}(t), 0)$$

3.7.2 In respect of each Settlement Period, for each BM Unit, the volume of a Bid accepted as a result of an Acceptance at spot times within the Settlement Period shall be the Accepted Bid Volume and shall be established as follows:

$$qAB_{ij}^{kn}(t) = \min (qABO_{ij}^{kn}(t), 0)$$

**3.8 Determination of Period Accepted Offer Volume (QAO<sup>kn</sup><sub>ij</sub>) and Period Accepted Bid Volume (QAB<sup>kn</sup><sub>ij</sub>)**

3.8.1 In respect of each Settlement Period, for each BM Unit, the Period Accepted Offer Volume shall be established by integrating the Accepted Offer Volume over all spot times in the Settlement Period.

3.8.2 In respect of each Settlement Period, for each BM Unit, the Period Accepted Bid Volume shall be established by integrating the Accepted Bid Volume over all spot times in the Settlement Period.

**3.8A Determination of Period Priced Accepted Offer Volume (QAPO<sup>kn</sup><sub>ij</sub>) and Period Priced Accepted Bid Volume (QAPB<sup>kn</sup><sub>ij</sub>)**

3.8A.1 In respect of each Settlement Period and Acceptance k, for each BM Unit, the Period Priced Accepted Offer Volume and Period Priced Accepted Bid Volume shall be established as follows:

- (a) if, there exists any Acceptance k' (including for the avoidance of doubt Acceptance k) relating to the BM Unit, for which  $CAD^{k'}_i < CADL$ , then no values of the Period Priced Accepted Offer Volume and Period Priced Accepted Bid Volume will be determined in relation to Acceptance k in any Settlement Period:
  - (i) from and including the Settlement Period in which the earliest Point Acceptance Volume associated with Acceptance k' falls, and
  - (ii) to and including the Settlement Period in which the latest Point Acceptance Volume associated with Acceptance k' falls.
- (b) if Acceptance k is an Excluded Emergency Acceptance, then no values of the Period Priced Accepted Offer Volume and Period Priced Accepted Bid Volume will be determined in relation to Acceptance k in any Settlement Period;
- (c) in any case other than one within paragraph (a) or (b), the Period Priced Accepted Offer Volume and Period Priced Accepted Bid Volume will be determined as follows:
  - (i)  $QAPO^{kn}_{ij} = QAO^{kn}_{ij}$ ; and
  - (ii)  $QAPB^{kn}_{ij} = QAB^{kn}_{ij}$ ;

**3.9 Determination of Period BM Unit Total Accepted Offer Volume (QAO<sup>n</sup><sub>ij</sub>) and Period BM Unit Total Accepted Bid Volume (QAB<sup>n</sup><sub>ij</sub>)**

3.9.1 In respect of each Settlement Period, for each BM Unit, the total MWh volume of the Offer accepted from all Acceptances shall be the Period BM Unit Total Accepted Offer Volume and shall be established as follows:

$$QAO^n_{ij} = \sum^k QAO^{kn}_{ij}$$

where  $\sum^k$  represents the sum over all Acceptances within the Settlement Period.

3.9.2 In respect of each Settlement Period, for each BM Unit, the total MWh volume of the Bid accepted from all Acceptances shall be the Period BM Unit Total Accepted Bid Volume, and shall be established as follows:

$$QAB_{ij}^n = \sum^k QAB_{ij}^{kn}$$

where  $\sum^k$  represents the sum over all Acceptances within the Settlement Period.

**3.9A Determination of Period BM Unit Total Priced Accepted Offer Volume (QAPO<sup>n</sup><sub>ij</sub>) and Period BM Unit Total Priced Accepted Bid Volume (QAPB<sup>n</sup><sub>ij</sub>)**

3.9A.1 In respect of each Settlement Period, for each BM Unit, the Period BM Unit Total Priced Accepted Offer Volume shall be established as follows:

$$QAPO_{ij}^n = \sum^k QAPO_{ij}^{kn}$$

where  $\sum^k$  represents the sum over all Acceptances within the Settlement Period.

3.9A.2 In respect of each Settlement Period, for each BM Unit, the Period BM Unit Total Priced Accepted Bid Volume shall be established as follows:

$$QAPB_{ij}^n = \sum^k QAPB_{ij}^{kn}$$

where  $\sum^k$  represents the sum over all Acceptances within the Settlement Period.

**3.10 Determination of Period BM Unit Offer Cashflow (CO<sup>n</sup><sub>ij</sub>) and Period BM Unit Bid Cashflow (CB<sup>n</sup><sub>ij</sub>)**

3.10.1 In respect of each Settlement Period, for each BM Unit, the transmission loss adjusted cashflow for Balancing Mechanism action in the Settlement Period, allocated to an Offer shall be the Period BM Unit Offer Cashflow and shall be determined as follows:

$$CO_{ij}^n = QAO_{ij}^n * TLM_{ij} * PO_{ij}^n$$

3.10.2 In respect of each Settlement Period, for each BM Unit, the transmission loss adjusted cashflow for Balancing Mechanism action in the Settlement Period, allocated to a Bid shall be the Period BM Unit Bid Cashflow and shall be determined as follows:

$$CB_{ij}^n = QAB_{ij}^n * TLM_{ij} * PB_{ij}^n$$

**3.11 Determination of Period BM Unit Cashflow (CBM<sub>ij</sub>)**

3.11.1 In respect of each Settlement Period, for each BM Unit, the total payment in respect of the BM Unit as a result of accepted Balancing Mechanism action in the Settlement Period shall be the Period BM Unit Cashflow and shall be determined as follows:

$$CBM_{ij} = \sum^n CO_{ij}^n + \sum^n CB_{ij}^n$$

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

**3.12 Determination of Total System BM Cashflow (TCBM<sub>j</sub>) and Daily Party BM Unit Cashflow (CBM<sub>p</sub>)**

3.12.1 In respect of each Settlement Period, the total payments and charges in respect of Balancing Mechanism action for all BM Units shall be the Total System BM Cashflow and shall be determined as follows:

$$TCBM_j = \sum_i CBM_{ij}$$

where  $\sum_i$  is the sum over all BM Units.

- 3.12.2 In respect of each Settlement Day, for each Party p, the Daily Party BM Unit Cashflow shall be determined as:

$$CBM_p = \sum_j \sum_{i \in p} CBM_{ij}$$

where  $\sum_j$  is the sum over all Settlement Periods and  $\sum_{i \in p}$  is the sum of all BM Units for which Party p is the Lead Party.

#### 4. SETTLEMENT CALCULATIONS

##### 4.1 Treatment of Interconnector BM Units

- 4.1.1 For each Settlement Period, the BM Unit Metered Volume for the relevant Interconnector BM Unit (as determined in paragraph 4.1.2) of the Interconnector Error Administrator will be determined as follows:

$$QM_{ij} = IMV_j - \sum_i QM_{ij}$$

where  $\sum_i$  is the sum over all Interconnector BM Units for which the Lead Parties are Interconnector Users in relation to the Interconnector in question.

- 4.1.2 In respect of the Interconnector BM Units of an Interconnector Error Administrator for the Interconnector in question:

- (a) where  $QM_{ij}$  is positive, it shall be the BM Unit Metered Volume for the Production Interconnector BM Unit of the Interconnector Error Administrator, and
- (b) where  $QM_{ij}$  is negative, it shall be the BM Unit Metered Volume for the Consumption Interconnector BM Unit of the Interconnector Error Administrator,

and, in each case, the BM Unit Metered Volume for the other Interconnector BM Unit of the Interconnector Error Administrator for that Interconnector (the Consumption Interconnector BM Unit, in the case of paragraph (a), and the Production Interconnector BM Unit, in the case of paragraph (b)) shall be zero.

##### 4.2 Determination of BM Unit Metered Volume ( $QM_{ij}$ ) for Supplier BM Units

- 4.2.1 For each Settlement Period, the BM Unit Metered Volume for Supplier BM Units will, subject to paragraph 1.4.7, be determined as follows:

$$QM_{ij} = -BMUADV_{ij}$$

- 4.2.2 For the purposes of the Interim Information Settlement Run only, the BM Unit Metered Volume for Supplier BM Unit i for Settlement Period j in Settlement Day d will be determined as follows:

$$QM_{ij} = GSPGT_j * QM_{ij} / GSPGT_j,$$

where:

- (a)  $GSPGT_j$  is the GSP Group Take received by the SAA from the CDCA in respect of Settlement Period j for the GSP Group in which the Supplier BM Unit i is registered, and

- (b)  $QM_{ij}$  and  $GSPGT_j$  are respectively the values of BM Unit Metered Volume for that Supplier BM Unit and GSP Group Take for that GSP Group in Settlement Period  $j$ , and
- (c) Settlement Period  $j'$  is defined as follows:
- (i) if Settlement Day  $d$  is not a clock change day, Settlement Period  $j'$  is the Settlement Period on Settlement Day  $d'$  corresponding to Settlement Period  $j$  on Settlement Day  $d$ ;
  - (ii) if Settlement Day  $d$  is a short clock change day, defaulting rules will be applied as follows:
    - (1) if Settlement Period  $j$  is one of the first two Settlement Periods of Settlement Day  $d$ , Settlement Period  $j'$  is the Settlement Period on Settlement Day  $d'$  corresponding to Settlement Period  $j$  on Settlement Day  $d$ ;
    - (2) if Settlement Period  $j$  is not one of the first two Settlement Periods of Settlement Day  $d$ , Settlement Period  $j'$  is the second Settlement Period after the Settlement Period on Settlement Day  $d'$  corresponding to Settlement Period  $j$  on Settlement Day  $d$ ;
  - (iii) if Settlement Day  $d$  is a long clock change day, defaulting rules will be applied as follows:
    - (1) if Settlement Period  $j$  is one of the first four Settlement Periods of Settlement Day  $d$ , Settlement Period  $j'$  is the Settlement Period on Settlement Day  $d'$  corresponding to Settlement Period  $j$  on Settlement Day  $d$ ;
    - (2) if Settlement Period  $j$  is not one of the first four Settlement Periods of Settlement Day  $d$ , Settlement Period  $j'$  is the second Settlement Period prior to the Settlement Period on Settlement Day  $d'$  corresponding to Settlement Period  $j$  on Settlement Day  $d$ ;
- or, in the case of paragraphs (ii) and (iii), such other or supplementary defaulting rules as may be approved from time to time by the Panel and notified by BSCCo to Trading Parties and the Transmission Company;
- (d) Settlement Day  $d'$  is the most recent Settlement Day prior to Settlement Day  $d$ , that is not a clock change day and is the same day of the week as Settlement Day  $d$ , and for which the Initial Settlement Run has taken place;
- (e) in this paragraph 4.2.2, corresponding means corresponding in sequence (that is to say, the first Settlement Period of a Settlement Day corresponds to the first Settlement Period of another Settlement Day and so on).

### 4.3 Determination of Information Imbalance Volumes ( $QII_{ij}$ ) and Charges ( $CH_{ij}$ )

- 4.3.1 In respect of each Settlement Period, for each BM Unit, the Period FPN ( $FPN_{ij}$ ) will be calculated by integrating the value of  $FPN_{ij}(t)$  over all spot times falling within the Settlement Period in question.

- 4.3.2 In respect of each Settlement Period, for each BM Unit, the Period BM Unit Balancing Services Volume will be determined as follows:

$$QBS_{ij} = \sum^n (QAO^n_{ij} + QAB^n_{ij}) + QAS_{ij}$$

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

- 4.3.3 In respect of each Settlement Period, for each BM Unit, the Period Expected Metered Volume will be determined as follows:

$$QME_{ij} = FPN_{ij} + QBS_{ij}$$

- 4.3.4 In respect of each Settlement Period, for each BM Unit, the Period Information Imbalance Volume will be determined as follows:

$$QII_{ij} = |QM_{ij} - QME_{ij}|$$

- 4.3.5 In respect of each Settlement Period, the Information Imbalance Price (IIP<sub>j</sub>) shall be an amount equal to zero.

- 4.3.6 In respect of each Settlement Period, for each BM Unit, the Information Imbalance Charge will be determined as follows:

$$CII_{ij} = QII_{ij} * IIP_j$$

- 4.3.7 In respect of each Settlement Period, the Total System Information Imbalance Charge will be determined as follows:

$$TCII_j = \sum_i CII_{ij}$$

where  $\sum_i$  represents the sum over all BM Units.

- 4.3.8 In respect of each Settlement Day, for each Party p, the Daily Party Information Imbalance Charge shall be determined as:

$$CII_p = \sum_j \sum_{i \in p} CII_{ij}$$

where  $\sum_j$  represents the sum over all Settlement Periods and  $\sum_{i \in p}$  represents the sum over all BM Units for which Party p is the Lead Party.

#### 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:

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

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:

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

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.

4.4.2B In respect of each Settlement Period, the System Total Un-Priced Accepted Offer Volume will be determined as follows:

$$TQUAO_j = \sum_i \sum^n QAO^n_{ij} - \sum_i \sum^n QAPO^n_{ij}$$

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.

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

$$TQUAB_j = \sum_i \sum^n QAB^n_{ij} - \sum_i \sum^n QAPB^n_{ij}$$

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.

4.4.3 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:

- (a) some or all of the accepted Bids and accepted Offers may be defined as NIV Tagged Bids and NIV Tagged Offers respectively in accordance with the provisions in Annex T-1;
- (b) some or all of the Buy Price Volume Adjustment (Energy) (EBVA) and Sell Price Volume Adjustment (Energy) (ESVA) may be defined as NIV Tagged EBVA and NIV Tagged ESVA respectively in accordance with the provisions in Annex T-1;
- (c) some or all of the Buy Price Volume Adjustment (System) (SBVA) and Sell Price Volume Adjustment (System) (SSVA) may be defined as NIV Tagged SBVA and NIV Tagged SSVA respectively in accordance with the provisions in Annex T-1;
- (d) some or all of the System Total Un-priced Bid Volume and System Total Un-priced Offer Volume may be defined as NIV Tagged System Total Un-priced Bid Volume and NIV Tagged System Total Un-priced Offer Volume respectively in accordance with the provisions in Annex T-1.

4.4.4A In respect of each Settlement Period, the Net Imbalance Volume will be determined as follows:

$$NIV_j = \{\sum_i \sum^n QAPO^n_{ij} + EBVA_j + SBVA_j + TQUAO_j\} - \{\sum_i \sum^n (-QAPB^n_{ij}) + (-ESVA_j) + (-SSVA_j) + (-TQUAB_j)\}$$

where  $\Sigma_i$  is the sum over all BM Units and  $\Sigma^n$  is either the sum over all Accepted Offers that are not De Minimis Accepted Offers and not Arbitrage Accepted Offers, or the sum over all Accepted Bids that are not De Minimis Accepted Bids and not Arbitrage Accepted Bids, as the case may be.

4.4.4B Without prejudice to paragraph 1.5A.4(b) and 1.5A.6(b), if in respect of a Settlement Period  $j$  and a Market Index Data Provider  $s$  either:

- (a) the Individual Liquidity Threshold exceeds the Market Index Volume ( $QXP_{sj}$ ); or
- (b) the Market Index Data Provider fails for whatever reason to submit the Market Index Data in time such that it can be taken into account in the relevant Settlement Run,

the Market Index Volume ( $QXP_{sj}$ ) and the Market Index Price ( $PXP_{sj}$ ) for that Market Index Data Provider shall be deemed to be zero.

4.4.4C In respect of each Settlement Period:

- (a) some or all of the accepted Bids and accepted Offers which are not NIV Tagged Bids and NIV Tagged Offers respectively may be defined as PAR Tagged Bids and PAR Tagged Offers respectively in accordance with the provisions in Annex T-1;
- (b) some or all of the NIV-Untagged Buy Price Volume Adjustment (Energy) (NUEBVA) and NIV-Untagged Sell Price Volume Adjustment (Energy) (NUESVA) may be defined as PAR Tagged EBVA and PAR Tagged ESVA respectively in accordance with the provisions in Annex T-1.

4.4.5 In respect of each Settlement Period:

- (a) if the Net Imbalance Volume is not equal to zero, and is a positive number, and  $\{\Sigma_i \Sigma^n \{QAPO_{ij}^n * TLM_{ij}\} + UEBVA_j\}$  is not equal to zero, then the System Buy Price will be determined as follows:

$$SBP_j = \{\{\Sigma_i \Sigma^n \{QAPO_{ij}^n * PO_{ij}^n * TLM_{ij}\} + UEBVA_j\} / \{\Sigma_i \Sigma^n \{QAPO_{ij}^n * TLM_{ij}\} + UEBVA_j\}\} + \{BPA_j\}$$

where  $\Sigma_i$  represents the sum over all BM Units and  $\Sigma^n$  represents the sum over those accepted Offers that are not De Minimis Accepted Offers and not Arbitrage Accepted Offers and not NIV Tagged Offers and not PAR Tagged Offers;

- (b) if the Net Imbalance Volume is equal to zero, or is a negative number, and / or  $\{\Sigma_i \Sigma^n \{QAPO_{ij}^n * TLM_{ij}\} + UEBVA_j\}$  is equal to zero, then the System Buy Price will (subject to paragraph 4.4.6A) be determined as follows:

$$SBP_j = \Sigma_s \{PXP_{sj} * QXP_{sj}\} / \Sigma_s \{QXP_{sj}\}$$

where  $\Sigma_s$  represents the sum over all Market Index Data Providers;

provided that, if the Net Imbalance Volume is a negative number and  $SSP_j$  as determined in accordance with paragraph 4.4.6(a) would exceed  $SBP_j$  as determined in this paragraph (b), then  $SBP_j$  shall instead be equal to  $SSP_j$  as determined in accordance with paragraph 4.4.6(a).

## 4.4.6 In respect of each Settlement Period:

- (a) if the Net Imbalance Volume is not equal to zero, and is a negative number, and  $\{\sum_i \sum^n \{QAPB_{ij}^n * TLM_{ij}\} + UESVA_j\}$  is not equal to zero, then the System Sell Price will be determined as follows:

$$SSP_j = \{\{\sum_i \sum^n \{QAPB_{ij}^n * PB_{ij}^n * TLM_{ij}\} + UESCA_j\} / \{\sum_i \sum^n \{QAPB_{ij}^n * TLM_{ij}\} + UESVA_j\}\} + \{SPA_j\}$$

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 NIV Tagged Bids and not PAR Tagged Bids;

- (b) if the Net Imbalance Volume is equal to zero, or is a positive number, and / or  $\{\sum_i \sum^n \{QAPB_{ij}^n * TLM_{ij}\} + UESVA_j\}$  is equal to zero, then the System Sell Price will (subject to paragraph 4.4.6A) be determined as follows:

$$SSP_j = \sum_s \{PXP_{sj} * QXP_{sj}\} / \sum_s \{QXP_{sj}\}$$

where  $\sum_s$  represents the sum over all Market Index Data Providers;

provided that, if the Net Imbalance Volume is a positive number and  $SSP_j$  as so determined would exceed  $SBP_j$  as determined in accordance with paragraph 4.4.5(a), then  $SSP_j$  shall instead be equal to  $SBP_j$  as determined in accordance with paragraph 4.4.5(a).

## 4.4.6A Without prejudice to paragraph 1.5A.4(b) and 1.5A.6(b), if for whatever reason (including the submission or deemed submission of zero values or the absence of Market Index Data) in respect of a Settlement Period:

$$\sum_s QXP_{sj} = 0$$

where  $\sum_s$  represents the sum over all Market Index Data Providers,

then (notwithstanding paragraphs 4.4.5(b) and 4.4.6(b)):

- (a) if the Net Imbalance Volume is a positive number, and  $\{\sum_i \sum^n \{QAPO_{ij}^n * TLM_{ij}\} + UEBVA_j\}$  is not equal to zero,  $SSP_j$  shall be equal to  $SBP_j$  as determined in accordance with paragraph 4.4.5(a);
- (b) if the Net Imbalance Volume is a positive number, and  $\{\sum_i \sum^n \{QAPO_{ij}^n * TLM_{ij}\} + UEBVA_j\}$  is equal to zero, each  $SBP_j$  and  $SSP_j$  shall be zero;
- (c) if the Net Imbalance Volume is a negative number, and  $\{\sum_i \sum^n \{QAPB_{ij}^n * TLM_{ij}\} + UESVA_j\}$  is not equal to zero,  $SBP_j$  shall be equal to  $SSP_j$  as determined in accordance with paragraph 4.4.6(a);
- (d) if the Net Imbalance Volume is a negative number, and  $\{\sum_i \sum^n \{QAPB_{ij}^n * TLM_{ij}\} + UESVA_j\}$  is equal to zero, each  $SBP_j$  and  $SSP_j$  shall be zero; and
- (e) if the Net Imbalance Volume is zero, each of  $SBP_j$  and  $SSP_j$  shall be zero.

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

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

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 NIV Tagged Offers.

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

$$TQPAB_j = \sum_i \sum^n QAPB^{n}_{ij}$$

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 NIV Tagged Bids.

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

$$TAQ_j = \sum_i (\sum^{n'} QAPB^{n'}_{ij} - \sum^{n*} QAPO^{n*}_{ij}) / 2$$

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 NIV Tagged Volume will be determined as follows:

$$TCQ_j = \{ \{ (\sum_i \sum^{n'} QAPB^{n'}_{ij}) + TTQUAB_j + NTESVA_j + TSSVA_j \} - \{ (\sum_i \sum^{n*} QAPO^{n*}_{ij}) + TTQUAO_j + NTEBVA_j + TSBVA_j \} \} / 2$$

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

#### 4.5 Determination of Credited Energy Volumes (QCE<sub>iaj</sub>) for each Energy Account

- 4.5.1 In respect of each Settlement Period and each Energy Account, the Credited Energy Volume for each BM Unit to be allocated to the corresponding Energy Account of the Subsidiary Party and of the Lead Party will be determined as follows:

- (a) in the case of the corresponding Energy Account of each Subsidiary Party:

$$QCE_{iaj} = \{ (QM_{ij} - QBS_{ij}) * (QMPR_{iaj}/100) + QMFR_{iaj} \} * TLM_{ij}$$

and values of QCE<sub>iaj</sub> are then rounded towards zero to the nearest kWh;

- (b) in the case of the corresponding Energy Account of the Lead Party:

$$QCE_{iaj} = (QM_{ij} * TLM_{ij}) - \sum_a QCE_{iaj}$$

where  $\sum_a$  represents the sum over all Energy Accounts for Subsidiary Parties of the Lead Party (not including Energy Accounts for the Lead Party itself).

#### 4.6 Determination of Energy Imbalance (QAEI<sub>aj</sub>) for each Energy Account

- 4.6.1 In respect of each Settlement Period, for each Energy Account, the Account Credited Energy Volume will be determined as follows:

$$QACE_{aj} = \sum_i QCE_{iaj}$$

where  $\sum_i$  represents the sum over all BM Units.

- 4.6.2 In respect of each Settlement Period, for each Energy Account, the Account Period Balancing Services Volume will be determined as follows:

$$QABS_{aj} = \sum_i QBS_{ij} * TLM_{ij}$$

where  $\sum_i$  represents the sum over all BM Units for which such Energy Account is the corresponding Energy Account of the Lead Party.

- 4.6.3 In respect of each Settlement Period, for each Energy Account, the Account Energy Imbalance Volume will be determined as follows:

$$QAEI_{aj} = QACE_{aj} - QABS_{aj} - QABC_{aj}$$

- 4.6.4 In respect of each Settlement Period, the Total System Energy Imbalance Volume will be determined as follows:

$$TQEI_j = \sum_a QAEI_{aj}$$

where  $\sum_a$  represents the sum over all Energy Accounts other than the TC (Non-IEA) Energy Accounts held by the Transmission Company.

- 4.6.5 In respect of each Settlement Period, the Total Period Applicable Balancing Services Volume will be determined as follows:

$$TQAS_j = \sum_i QAS_{ij}$$

where  $\sum_i$  represents the sum over all BM Units.

#### 4.7 Determination of Energy Imbalance Cashflows (CAEI<sub>aj</sub> and TCEI<sub>j</sub>)

- 4.7.1 In respect of each Settlement Period, the Account Energy Imbalance Cashflow for each Energy Account, other than the TC (Non-IEA) Energy Accounts held by the Transmission Company, will be determined as follows:

$$\text{if } QAEI_{aj} > 0 \text{ then } CAEI_{aj} = - QAEI_{aj} * SSP_j$$

$$\text{otherwise } CAEI_{aj} = - QAEI_{aj} * SBP_j$$

In respect of each Settlement Period, the Account Energy Imbalance Cashflow for each Energy Account held by the Transmission Company will be determined as follows:

$$CAEI_{aj} = 0$$

- 4.7.2 The Total System Energy Imbalance Cashflow will be determined as follows:

$$TCEI_j = \sum_a CAEI_{aj}$$

where  $\sum_a$  represents the sum over all Energy Accounts.

- 4.7.3 In respect of each Settlement Day, for each Party p, the Daily Party Energy Imbalance Cashflow shall be determined as:

$$CAEI_p = \sum_j \sum_{a \in p} CAEI_{aj}$$

where  $\Sigma_j$  represents the sum over all Settlement Periods and  $\Sigma_{a \in p}$  represents the sum over the Energy Accounts of Party p.

#### 4.8 Non-Delivery Rule and Calculations

- 4.8.1 In respect of each Settlement Period, for each BM Unit, the Period BM Unit Non-Delivered Offer Volume will be determined as follows:

$$QNDO_{ij} = \text{Min}\{\text{Max}\{QME_{ij} - QM_{ij}, 0\}, \Sigma^n QAO^n_{ij}\}$$

where  $\Sigma^n$  represents the sum over all Bid-Offer Pair Numbers for the Accepted Offer Volumes for the BM Unit.

- 4.8.2 In respect of each Settlement Period, for each BM Unit, the Period BM Unit Non-Delivered Bid Volume will be determined as follows:

$$QNDB_{ij} = \text{Max}\{\text{Min}\{QME_{ij} - QM_{ij}, 0\}, \Sigma^n QAB^n_{ij}\}$$

where  $\Sigma^n$  represents the sum over all Bid-Offer Pair Numbers for the Accepted Bid Volumes for the BM Unit.

- 4.8.3 In respect of each Settlement Period, for each BM Unit, if the Period BM Non-Delivered Offer Volume is greater than zero then to determine values of Offer Non-Delivery Volume ( $QNDO^n_{ij}$ ), the Period BM Unit Non-Delivered Offer Volume will be apportioned across accepted Offers, in the following way.

- 4.8.4 In respect of each Settlement Period, the set of all accepted Offers will be ranked in order of decreasing price. The accepted Offer with the highest price will be allocated Non-Delivery Order Number 1, the next highest priced accepted Offer will be allocated Non-Delivery Order Number 2 and so on until all accepted Offers for the Settlement Period have been allocated a Non-Delivery Order Number. The set of accepted Offers

$\{QAO^{n1}_{ij}, QAO^{n2}_{ij}, \dots, QAO^{nu}_{ij}\}$  is then a ranked set of accepted Offers.

- 4.8.5 The Offer Non-Delivery Volume will be allocated to the first accepted Offer in the list first, then, once the first accepted Offer has been wholly accepted, to the second accepted Offer and so on until the Period BM Unit Non-Delivered Offer Volume is fully apportioned.

- 4.8.6 Then the Offer Non-Delivery Volume for accepted Offer n, is:

$$QNDO^n_{ij} = \text{Min}(QAO^{nu}_{ij}, RQNDO^{u-1}_{ij})$$

where  $RQNDO^{u-1}_{ij}$  is the Remaining Period BM Unit Non-Delivered Offer Volume determined as:

$$RQNDO^u_{ij} = RQNDO^{u-1}_{ij} - QNDO^{nu-1}_{ij}$$

$$\text{and } RQNDO^0_{ij} = QNDO_{ij}$$

$$\text{and } QNDO^{n0}_{ij} = 0$$

- 4.8.7 In respect of each Settlement Period, for each BM Unit, if the Period BM Non-Delivered Bid Volume is less than zero then to determine values of Bid Non-Delivery Volume ( $QNDB^n_{ij}$ ), the Period BM Unit Non-Delivered Bid Volume will be apportioned across accepted Bids, in the following way.

4.8.8 In respect of each Settlement Period, the set of all accepted Bids will be ranked in order of increasing price. The accepted Bid with the lowest price is allocated Non-Delivery Order Number 1, the next lowest priced accepted Bid is allocated Non-Delivery Order Number 2 and so on until all accepted Bids for the Settlement Period have been allocated a Non-Delivery Order Number. The set of accepted Bids  $\{QAB^{n1}_{ij}, QAB^{n2}_{ij}, \dots, QAB^{nu}_{ij}\}$  is then a ranked set of accepted Bids.

4.8.9 The Bid Non-Delivery Volume will be allocated to the first accepted Bid in the list first, then, once the first accepted Bid has been wholly accepted, to the second accepted Bid and so on until the Period BM Unit Non-Delivered Bid Volume is fully apportioned.

4.8.10 Then the Bid Non-Delivery Volume for accepted Bid n, is:

$$QNDB^n_{ij} = \text{Max}(QAB^{nu}_{ij}, RQNDB^{u-1}_{ij})$$

where  $RQNDB^{u-1}_{ij}$  is the Remaining Period BM Unit Non-Delivered Bid Volume determined as:

$$RQNDB^u_{ij} = RQNDB^{u-1}_{ij} - QNDB^{nu-1}_{ij}$$

$$\text{and } RQNDB^0_{ij} = QNDB_{ij}$$

$$\text{and } QNDB^{n0}_{ij} = 0$$

4.8.11 In respect of each Settlement Period, for each BM Unit, for each accepted Offer, the Non-Delivered Offer Charge will be determined as follows:

$$CNDO^n_{ij} = QNDO^n_{ij} * \text{Max}\{(PO^n_{ij} - SBP_j), 0\} * TLM_{ij}$$

4.8.12 In respect of each Settlement Period, for each BM Unit, for each accepted Bid, the Non-Delivered Bid Charge will be determined as follows:

$$CNDB^n_{ij} = QNDB^n_{ij} * \text{Min}\{(PB^n_{ij} - SSP_j), 0\} * TLM_{ij}$$

4.8.13 In respect of each Settlement Period, for each BM Unit, the BM Unit Period Non-Delivery Charge will be determined as follows:

$$CND_{ij} = \sum^n (CNDO^n_{ij} + CNDB^n_{ij})$$

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

4.8.14 In respect of each Settlement Period, the Total System Non-Delivery Charge will be determined as the sum of all BM Unit Period Non-Delivery Charges for BM Units as follows:

$$TCND_j = \sum_i CND_{ij}$$

where  $\sum_i$  represents the sum over all BM Units.

4.8.15 In respect of each Settlement Day, for each Party p, the Daily Party Non-Delivery Charge shall be determined as:

$$CND_p = \sum_j \sum_{i \in p} CND_{ij}$$

where  $\sum_j$  represents the sum over all Settlement Periods and  $\sum_{i \in p}$  represents the sum over all BM Units for which Party p is the Lead Party.

#### 4.9 Determination of System Operator BM Cashflow (CSOBM<sub>j</sub>)

4.9.1 In respect of each Settlement Period, the System Operator BM Cashflow will be determined as follows:

$$\text{CSOBM}_j = \text{TCBM}_j - \text{TCND}_j$$

4.9.2 In respect of each Settlement Day, the Daily System Operator BM Cashflow will be determined as follows:

$$\text{CSOBM} = \sum_j \text{CSOBM}_j$$

where  $\sum_j$  represents the sum over all Settlement Periods.

#### 4.10 Determination of Residual Cashflow Allocations

4.10.1 In respect of each Settlement Period, the Total System Residual Cashflow will be determined as follows:

$$\text{TRC}_j = \text{TCII}_j + \text{CSOBM}_j + \text{TCND}_j - \text{TCBM}_j + \text{TCEI}_j$$

4.10.2 In respect of each Settlement Period, for each Energy Account, other than the TC (Non-IEA) Energy Accounts held by the Transmission Company, the Residual Cashflow Reallocation Proportion will be determined as follows:

$$\text{RCRP}_{aj} = \{ \sum_i^+ (\text{QCE}_{iaj}) + \sum_i^- (-\text{QCE}_{iaj}) \} / \{ \sum_a \{ \sum_i^+ (\text{QCE}_{iaj}) + \sum_i^- (-\text{QCE}_{iaj}) \} \}$$

where  $\sum_i^+$  is, for each Energy Account a in Settlement Period j, the sum over all BM Units i that are in delivering Trading Units, and

$\sum_i^-$  is, for each Energy Account a in Settlement Period j, the sum over all BM Units i that are in offtaking Trading Units, and

$\sum_a$  represents the sum over all Energy Accounts a, other than the TC (Non-IEA) Energy Accounts held by the Transmission Company.

In respect of each Settlement Period, for each TC (Non-IEA) Energy Account held by the Transmission Company, the Residual Cashflow Reallocation Proportion will be determined as follows:

$$\text{RCRP}_{aj} = 0$$

4.10.3 In respect of each Settlement Period, for each Energy Account, the Residual Cashflow Reallocation Cashflow will be determined as follows:

$$\text{RCRC}_{aj} = \text{RCRP}_{aj} * \text{TRC}_j$$

4.10.4 In respect of each Settlement Day, for each Party p, the Daily Party Residual Settlement Cashflow shall be determined as:

$$\text{RCRC}_p = \sum_j \sum_{a \in p} \text{RCRC}_{aj}$$

where  $\sum_j$  represents the sum over all Settlement Periods and  $\sum_{a \in p}$  represents the sum over the Energy Accounts of Party p.

## **5. SETTLEMENT**

### **5.1 Responsibility of SAA**

5.1.1 The SAA shall be responsible for the determination of Trading Charges and shall make all such intermediate and other calculations and determinations as are required to do so in accordance with paragraphs 2, 3 and 4 and to enable the SAA to comply with its reporting requirements under Section V.

### **5.2 Requirement to carry out Settlement Runs**

5.2.1 In relation to each Settlement Day, the SAA shall carry out:

- (a) no later than the relevant dates set out in the Settlement Calendar (subject to paragraph 1.4),
  - (i) an Interim Information Settlement Run;
  - (ii) an Initial Settlement Run;
  - (iii) four Timetabled Reconciliation Settlement Runs;
- (b) any Post-Final Settlement Run required by the Panel pursuant to Section U2.

5.2.2 In carrying out any Interim Information Settlement Run, it is recognised that the SAA shall not have received any data for the relevant Settlement Day from the SVAA in relation to Supplier Volume Allocation.

5.2.3 In carrying out any Reconciliation Settlement Run, the SAA shall:

- (a) use data submitted by the CDCA and SVAA pursuant to the corresponding Reconciliation Volume Allocation Runs;
- (b) make any adjustment or revision to any data submitted by the Transmission Company which is to be made following the resolution of any Trading Query or Trading Dispute, and use such adjusted or revised data;
- (c) use any adjusted or revised data submitted to it for the relevant Settlement Period by the CRA, the CDCA, the ECVAA, the Transmission Company, any Interconnector Administrator and any Market Index Data Provider;
- (d) should the Transmission Company submit any revised Balancing Services Adjustment Data, use such revised data.

### **5.3 Submission of Settlement data**

5.3.1 In relation to each Settlement Day, following each Settlement Run, the SAA shall provide to the FAA the data and information specified in paragraphs 5.3.2 to 5.3.4 on the Notification Date (subject to paragraph 1.4):

- (a) specified in the Payment Calendar, in the case of the Initial Settlement Run or a Timetabled Reconciliation Settlement Run;
- (b) determined pursuant to Section U2, in the case of a Post-Final Settlement Run.

5.3.2 The following information is to be submitted in relation to the Settlement Run:

- (a) the Settlement Day;

- (b) whether the Settlement Run is an Initial Settlement Run, Timetabled Reconciliation Settlement Run or Post-Final Settlement Run.

5.3.3 The following information is to be submitted in relation to each Trading Party:

- (a) the identity of the Trading Party;
- (b) the amount (shown as a debit or a credit in accordance with the applicable rules and conventions established in paragraph 1.2) for the Settlement Day, in respect of each of the following Trading Charges separately:
  - (i) Daily Party BM Unit Cashflow;
  - (ii) Daily Party Non-Delivery Charge;
  - (iii) Daily Party Energy Imbalance Cashflow;
  - (iv) Daily Party Information Imbalance Charge;
  - (v) Daily Party Residual Settlement Cashflow; and
- (c) the net credit or debit amount for the Settlement Day for all Trading Charges under paragraph (b), determined by the SAA for that Trading Party applying the rules and conventions established in paragraph 1.2.

5.3.4 In relation to the Transmission Company, the information to be submitted is the credit or debit amount (in accordance with the applicable rules and conventions in paragraph 1.2), for the Settlement Day, for the Daily System Operator BM Cashflow.

5.3.5 In relation to each Settlement Day, following the Interim Information Settlement Run, the SAA shall provide to the ECVAAs the data and information specified in paragraphs 5.3.2 and 5.3.3, relating to each Interim Information Settlement Run, on the day that the Settlement Calendar specifies the Interim Information Settlement Run for the Settlement Day is to take place (subject to paragraph 1.4).

#### **5.4 Failure of SAA's systems, etc**

5.4.1 This paragraph 5.4 applies if (other than in the circumstances described in paragraph 1.4.5) the SAA is unable for any reason:

- (a) to carry out any Settlement Run (not including an Interim Information Settlement Run); or
- (b) to submit to the FAA data and information in accordance with paragraph 5.3

and as a result the data and information referred to in paragraph 5.3 in relation to that Settlement Run has not been submitted to and validated (in accordance with Section N6.2) by the FAA by the 20<sup>th</sup> day after the Notification Date.

5.4.2 Where this paragraph 5.4 applies, the Panel shall estimate:

- (a) for each Party:
  - (i) the amounts of the Trading Charges for the relevant Settlement Day; and

- (ii) subject as follows, for each Settlement Period, the amounts which (in accordance with paragraph 4) are summed to establish Trading Charges for a Settlement Day;

provided that paragraph (ii) shall not apply to the extent that, in the Panel's opinion (in any particular circumstances), it is not reasonably practicable for the Panel to make or obtain estimates under that paragraph, or to do so in a way which is more specific and less approximate than the basis on which the estimate in paragraph (a) is otherwise to be made;

- (b) the amount of the System Buy Price and the System Sell Price for each Settlement Period in the relevant Settlement Day.

5.4.3 The Panel's estimate shall be made on such basis and with such approximation as the Panel considers appropriate, having regard to all the circumstances and to the fact that any Timetabled Reconciliation Settlement Run remains to be carried out or (as the case may be) any Settlement Run has already been carried out.

5.4.4 Each BSC Agent and each Party shall cooperate with the Panel to the extent reasonably requested to enable the Panel to make the estimates under paragraph 5.4.2.

5.4.5 BSCCo shall submit the amounts estimated by the Panel under paragraph 5.4.2(a):

- (a) to the FAA;
- (b) to the SAA, for information;

and shall use the amounts estimated by the Panel under paragraph 5.4.2(b) for publication under Section V4.2.6.

5.4.6 The data estimated by the Panel shall be binding on all Parties (but without prejudice to any subsequent Reconciliation Settlement Run).

## ANNEX T-1: CALCULATIONS

### 1. Interpretation

- 1.1 For the purposes of this Annex T-1, and paragraph 4.4, in relation to a BM Unit and Settlement Period, an "**accepted Offer**" means the Period BM Unit Total Priced Accepted Offer Volume ( $QAPO_{ij}^n$ ), and an "**accepted Bid**" means the Period BM Unit Total Priced Accepted Bid Volume ( $QAPB_{ij}^n$ ) but excluding Offers and Bids where the value of Period BM Unit Total Priced Accepted Offer Volume or Period BM Unit Total Priced Accepted Bid Volume (as the case may be) is zero.
- 1.2 For the purposes of any other provision of the Code, in relation to a BM Unit and Settlement Period, an "**accepted Offer**" means the Period BM Unit Total Accepted Offer Volume ( $QAO_{ij}^n$ ), and an "**accepted Bid**" means the Period BM Unit Total Accepted Bid Volume ( $QAB_{ij}^n$ ) but excluding Offers and Bids where the value of Period BM Unit Total Accepted Offer Volume or Period BM Unit Total 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  $|QAPB_{ij}^n| < DMAT_d$  shall be tagged as De Minimis Accepted Bids.
  - (b) All accepted Offers for which  $QAPO_{ij}^n < DMAT_d$  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,  $QAPB_{ij}^g$  (if any) which is not an Arbitrage Accepted Bid, there exists any accepted non-De Minimis Offer which is not an Arbitrage Accepted Offer  $QAPO_{ij}^n$  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  $\{QAPO_{ij}^{n_1}, QAPO_{ij}^{n_2}, \dots, QAPO_{ij}^{n_v}\}$  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

$$\sum^v QAPO_{ij}^{n_v} \leq -QAPB_{ij}^g$$

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

the  $QAPO^{n_v}_{ij}$  will be defined as Arbitrage Accepted Offers and the fraction  $\phi$  of  $QAPB^g_{ij}$  which is equal to  $\sum^v (-QAPO^{n_v}_{ij})$  will be defined as an Arbitrage Accepted Bid (this fraction may be one (1)).

(d) If:

$$\sum^v QAPO^{n_v}_{ij} < -QAPB^g_{ij}$$

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  $QAPO^{n_{v+1}}_{ij}$  which satisfies

$$\sum^v QAPO^{n_v}_{ij} + \gamma * QAPO^{n_{v+1}}_{ij} = -QAPB^g_{ij}$$

will also be defined as an Arbitrage Accepted Offer and  $QAPB^g_{ij}$  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:

- (a) there are two or more accepted Non-De Minimis Bids that are Non-arbitrage Bids, that have the same highest Bid Price, or
- (b) there are two or more ranked accepted Non-De Minimis Offers that have the same Offer Price

then one of the accepted Bids or (as the case may be) ranked accepted Offers will be selected at random.

2.5 If the completed application of paragraphs 2.1 to 2.4 inclusive (the 'initial calculation') would result in there being any accepted Non-De Minimis Bid or ranked accepted Non-De Minimis Offer which:

- (1) is not an Arbitrage Accepted Bid or (as the case may be) Arbitrage Accepted Offer, but
- (2) has the same price (other than merely by virtue of being a fraction  $(1 - \gamma)$  or  $(1 - \phi)$  pursuant to the initial calculation) as an accepted Non-De Minimis Bid which is an Arbitrage Accepted Bid or (as the case may be) ranked accepted Non-De Minimis Offer which is an Arbitrage Accepted Offer,

then:

- (i) all such accepted Non-De Minimis Bids  $QAPB^{n_r}_{ij}$  or ranked accepted Non-De Minimis Offers  $QAPO^{n_r}_{ij}$  (whether or not Arbitrage Accepted Bids or Arbitrage Accepted Offers on the basis of the initial calculation) which have the same price are "threshold Bids" or "threshold Offers";

- (ii) no threshold Bid or threshold Offer shall be defined as an Arbitrage Accepted Bid or Arbitrage Accepted Offer pursuant to the relevant provision, but instead the fraction  $\delta$  of each threshold Bid  $QAPB^{n_r}_{ij}$  or threshold Offer  $QAPO^{n_r}_{ij}$  which satisfies the following shall be defined as a Arbitrage Accepted Bid or (as the case may be) Arbitrage Accepted Offer:

$$\delta * \sum^{n_r} QAPB^{n_r}_{ij} = \sum^{n_r'} QAPB^{n_r'}_{ij}$$

or (as the case may be)

$$\delta * \sum^{n_r} QAPO^{n_r}_{ij} = \sum^{n_r'} QAPO^{n_r'}_{ij}$$

where

$\sum^{n_r}$  is the sum over all threshold Bids or (as the case may be) threshold Offers, and

$\sum^{n_r'}$  is the sum over all threshold Bids or (as the case may be) threshold Offers (including a fraction  $\gamma$  or  $\phi$ ) which, on the basis of the initial calculation would have been defined as Arbitrage Accepted Bids or Arbitrage Accepted Offers.

### 3 NIV Tagging

- 3.1 In respect of each Settlement Period, NIV Tagged Offers, NIV Tagged Bids, NIV Tagged EBVA, NIV Tagged SBVA, NIV Tagged ESVA, NIV Tagged SSVA, NIV Tagged System Total Un-priced Offer Volume and NIV Tagged System Total Un-priced Bid Volume will be defined in the following way:

- (a) If:

$$\{\{\sum^{n'} (-QAPB^{n'}_{ij})\} + (-ESVA_j) + (-SSVA_j) + (-TQUAB_j)\} = 0$$

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

$$\{\{\sum^{n*} QAPO^{n*}_{ij}\} + EBVA_j + SBVA_j + TQUAO_j\} = 0$$

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

then no Bids or Offers or ESVA volume or SSVA volume or EBVA volume or SBVA volume or System Total Un-priced Offer Volume or System Total Un-priced Bid Volume will be NIV Tagged.

- (b) Otherwise, the following procedure will be carried out. The set of all accepted Bids, which are neither De Minimis Bids nor Arbitrage Accepted Bids, will be ranked in price order, cheapest first (where the cheapest is allocated a  $n'$  value of 1, the next cheapest a  $n'$  value of 2 and so on). In any case where such Bids have the same price as each other, the ordering of such Bids will be random, subject to paragraph (g). The set of Non-De Minimis and Non-arbitrage Bids  $\{QAPB^{n'_1}_{ij}, QAPB^{n'_2}_{ij}, \dots, QAPB^{n'_w}_{ij}\}$  is then a set of "**Ranked Priced Bids**".

The Sell Price Volume Adjustment (Energy) ( $ESVA_j$ ) will be added into the set of Ranked Priced Bids according to the Sell Price Cost Adjustment (Energy) ( $ESCA_j$ ) (converted to a price in £/MWh, i.e.  $ESCA_j / ESVA_j$ ). The volume will, for the purposes of the NIV calculation only, be assigned a  $n'$  value and the  $n'$  values of the Ranked Priced Bids will be adjusted accordingly. The set of Ranked Priced Bids including the Sell Price Volume Adjustment (Energy) ( $ESVA_j$ ) will then be a set of "**Ranked Bids**".

Where the price of the Sell Price Volume Adjustment (Energy) is the same as any other Ranked Priced Bid, then the Sell Price Volume Adjustment (Energy) volume will be given the highest  $n'$  value of the Bid(s) with the same price.

The System Total Un-priced Bid Volume ( $TQUAB_j$ ) will then be added into the set of Ranked Bids as  $n' = 1$  and the  $n'$  values of the Ranked Bids will be adjusted accordingly. The volume will, for the purposes of the NIV calculation only, be assigned a  $n'$  value.

The Sell Price Volume Adjustment (System) ( $SSVA_j$ ) will then be added into the set of Ranked Bids as  $n' = 2$  and the  $n'$  values of the Ranked Bids will be adjusted accordingly. The volume will, for the purposes of the NIV calculation only, be assigned a  $n'$  value.

This then, for the purposes of the NIV Tagging calculation only, will constitute a set of "**Ranked Bid Volumes**", as follows:

$$(-TQUAB^{n'}_j), (-SSVA^{n'}_j), ((-QAPB^{n'}_{ij} \dots) (-ESVA^{n'}_j))$$

The set of all accepted Offers, which are neither De Minimis Offers nor Arbitrage Accepted Offers will be ranked in price order, most expensive first (where the most expensive is allocated a  $n^*$  value of 1, the next most expensive a  $n^*$  value of 2 and so on). In any case where such Offers have the same price as each other, the ordering of such Offers will be random, subject to paragraph (g). The set of Non-De Minimis and Non-arbitrage Offers  $\{QAPO^{n^*1}_{ij}, QAPO^{n^*2}_{ij}, \dots, QAPO^{n^*x}_{ij}\}$  is then a set of "**Ranked Priced Offers**".

The Buy Price Volume Adjustment (Energy) ( $EBVA_j$ ) will be added into the set of Ranked Priced Offers according to the Buy Price Cost Adjustment (Energy) ( $EBCA_j$ ) (converted to a price in £/MWh, i.e.  $EBCA_j / EBVA_j$ ). The volume will, for the purposes of the NIV calculation only, be assigned a  $n^*$  value and the  $n^*$  values of the Ranked Priced Offers will be adjusted accordingly. The set of Ranked Priced Offers including the Buy Price Volume Adjustment (Energy) ( $EBVA_j$ ) will then be a set of "**Ranked Offers**".

Where the price of the Buy Price Volume Adjustment (Energy) is the same as any other Ranked Priced Offer, then the Buy Price Volume Adjustment (Energy) volume will be given the highest  $n^*$  value of the Offer(s) with the same price.

The System Total Un-priced Offer Volume ( $TQUAO_j$ ) will then be added into the set of Ranked Offers as  $n^*=1$  and the  $n^*$  values of the Ranked Offers will be adjusted accordingly. The volume will, for the purposes of the NIV calculation only, be assigned a  $n^*$  value.

The Buy Price Volume Adjustment (System) ( $SBVA_j$ ) will then be added into the set of Ranked Offers as  $n^* = 2$  and the  $n^*$  values of the Ranked Offers will

be adjusted accordingly. The volume will, for the purposes of the NIV calculation only, be assigned a  $n^*$  value.

This then, for the purposes of the NIV Tagging calculation only, will constitute a set of "**Ranked Offer Volumes**", as follows:

$$(TQUAO^{n^*}_j), (SBVA^{n^*}_j), ((QAPO^{n^*}_{ij} \dots) (EBVA^{n^*}_j))$$

(c) If:

$$\{\sum^{n'} (-QAPB^{n'}_{ij}) + (-ESVA^{n'}_j) + (-SSVA^{n'}_j) + (-TQUAB^{n'}_j)\} \leq \{\sum^{n^*} QAPO^{n^*}_{ij} + EBVA^{n^*}_j + SBVA^{n^*}_j + TQUAO^{n^*}_j\}$$

where  $\sum^{n'}$  is the sum over the Ranked Priced Bids and  $\sum^{n^*}$  is the sum over the Ranked Priced Offers,

then all the Ranked Bid Volumes (for all values of  $n'$ ) will be defined as NIV Tagged Bids, or the NIV Tagged ESVA, or the NIV Tagged SSVA or the NIV Tagged System Total Un-priced Bid Volume (as the case may be).

(d) Since  $\{\sum^{n'} (-QAPB^{n'}_{ij}) + (-ESVA^{n'}_j) + (-SSVA^{n'}_j) + (-TQUAB^{n'}_j)\} \leq \{\sum^{n^*} QAPO^{n^*}_{ij} + EBVA^{n^*}_j + SBVA^{n^*}_j + TQUAO^{n^*}_j\}$  there must exist a number  $e$  and a number  $\phi$  (which may be a fraction or zero) for which

$$\{\sum^{n'} (-QAPB^{n'}_{ij}), (-ESVA^{n'}_j), (-SSVA^{n'}_j), (-TQUAB^{n'}_j)\} = \{(\sum^{n^* v < e} (QAPO^{n^*v}_{ij}), (EBVA^{n^*v}_j), (SBVA^{n^*v}_j), (TQUAO^{n^*v}_j)) + \phi * ((QAPO^{n^*e}_{ij}), (EBVA^{n^*e}_j), (SBVA^{n^*e}_j), (TQUAO^{n^*e}_j))\}$$

where  $\sum^{n'}$  is the sum over all Ranked Bid Volumes and  $\sum^{n^* v < e}$  is the sum over those Ranked Offer Volumes for which  $v$  is less than  $e$ .

Subject to paragraph (g), each Ranked Offer Volume of the Ranked Offer Volumes numbered 1 to  $e-1$  for which this is true will be defined as NIV Tagged Offers, or the NIV Tagged EBVA, or the NIV Tagged SBVA, or the NIV Tagged System Total Un-priced Offer Volume (as the case may be). If  $\phi$  is a fraction rather than 0, then the fraction  $\phi$  of the Ranked Offer Volume numbered  $e$  will be defined as a NIV Tagged Offer, the NIV Tagged EBVA, or the NIV Tagged SBVA, or the NIV Tagged System Total Un-priced Offer Volume (as the case may be).

For the purposes of PAR Tagging and the determination of Untagged EBVA ( $UEBVA_j$ ) (paragraph 4(f) of this Annex T-1):

The NIV Untagged EBVA ( $NUEBVA_j$ ) is the portion of Buy Price Volume Adjustment (Energy) ( $EBVA_j$ ) which is not NIV Tagged EBVA ( $NTEBVA_j$ ) for the relevant Settlement Period. If none of the Buy Price Volume Adjustment (Energy) ( $EBVA_j$ ) is NIV Tagged EBVA, the NIV Untagged EBVA shall be equal to the Buy Price Volume Adjustment (Energy) ( $EBVA_j$ ) (and the NIV Tagged EBVA shall be set to zero). If all of the Buy Price Volume Adjustment (Energy) ( $EBVA_j$ ) is NIV Tagged EBVA, the NIV Untagged EBVA shall be set to zero.

For the purposes of reporting:

If none of the Buy Price Volume Adjustment (System) (SBVA<sub>j</sub>) for the relevant Settlement Period is NIV Tagged SBVA (TSBVA<sub>j</sub>), the value of NIV Tagged SBVA (TSBVA<sub>j</sub>) shall be set to zero for that Settlement Period.

If none of the System Total Un-priced Offer Volume for the relevant Settlement Period is NIV Tagged System Total Un-priced Offer Volume (TTQUAO<sub>j</sub>), the value of NIV Tagged System Total Un-priced Offer Volume (TTQUAO<sub>j</sub>) shall be set to zero for that Settlement Period.

(e) If:

$$\{\sum^{n'} (-QAPB^{n'}_{ij}) + (-ESVA^{n'}_j) + (-SSVA^{n'}_j) + (-TQUAB^{n'}_j)\} > \{\sum^{n^*} QAPO^{n^*}_{ij} + EBVA^{n^*}_j + SBVA^{n^*}_j + TQUAO^{n^*}_j\}$$

where  $\sum^{n'}$  is the sum over the Ranked Priced Bids and  $\sum^{n^*}$  is the sum over the Ranked Priced Offers,

then all the Ranked Offer Volumes (for all values of  $n^*$ ) will be defined as NIV Tagged Offers, or the NIV Tagged EBVA, or the NIV Tagged SBVA, or the NIV Tagged System Total Un-priced Offer Volume (as the case may be).

(f) Since  $\{\sum^{n'} (-QAPB^{n'}_{ij}) + (-ESVA^{n'}_j) + (-SSVA^{n'}_j) + (-TQUAB^{n'}_j)\} > \{\sum^{n^*} QAPO^{n^*}_{ij} + EBVA^{n^*}_j + SBVA^{n^*}_j + TQUAO^{n^*}_j\}$  there must exist a number  $e$  and a number  $\phi$  (which may be a fraction or zero) for which

$$\{\sum^{n^*} (QAPO^{n^*}_{ij}), (EBVA^{n^*}_j), (SBVA^{n^*}_j), (TQUAO^{n^*}_j)\} = \{(\sum^{n'} v < e (-QAPB^{n'}_{ij}), (-ESVA^{n'}_j), (-SSVA^{n'}_j), (-TQUAB^{n'}_j)) + \phi * ((-QAPB^{n'}_e), (-ESVA^{n'}_e), (-SSVA^{n'}_e), (-TQUAB^{n'}_e))\}$$

where  $\sum^{n^*}$  is the sum over all Ranked Offer Volumes and  $\sum^{n'} v < e$  is the sum over those Ranked Bid Volumes for which  $v$  is less than  $e$ .

Subject to paragraph (g), each Ranked Bid Volume of the Ranked Bid Volumes numbered 1 to  $e-1$  for which this is true will be defined as NIV Tagged Bids, or the NIV Tagged ESVA, or the NIV Tagged SSVA or the NIV Tagged System Total Un-priced Bid Volume (as the case may be). If  $\phi$  is a fraction rather than 0, then the fraction  $\phi$  of the Ranked Bid Volume numbered  $e$  will be defined as a NIV Tagged Bid, or the NIV Tagged ESVA, or the NIV Tagged SSVA or the NIV Tagged System Total Un-priced Bid Volume (as the case may be).

For the purposes of PAR Tagging and the determination of Untagged ESVA (UESVA<sub>j</sub>) (paragraph 4(d) of this Annex T-1):

The NIV Untagged ESVA (NUESVA<sub>j</sub>) is the portion of the Sell Price Volume Adjustment (Energy) (ESVA<sub>j</sub>) which is not NIV Tagged ESVA (NTESVA<sub>j</sub>) for the relevant Settlement Period. If none of the Sell Price Volume Adjustment (Energy) (ESVA<sub>j</sub>) is NIV Tagged ESVA, the NIV Untagged ESVA shall be equal to the Sell Price Volume Adjustment (Energy) (ESVA<sub>j</sub>) (and the NIV Tagged ESVA shall be set to zero). If all of the Sell Price Volume Adjustment (Energy) (ESVA<sub>j</sub>) is NIV Tagged ESVA, the NIV Untagged ESVA shall be set to zero.

For the purposes of reporting:

If none of the Sell Price Volume Adjustment (System) (SSVA<sub>j</sub>) for the relevant Settlement Period is NIV Tagged SSVA (TSSVA<sub>j</sub>), the value of NIV Tagged SBVA (TSSVA<sub>j</sub>) shall be set to zero for that Settlement Period.

If none of the System Total Un-priced Bid Volume for the relevant Settlement Period is NIV Tagged System Total Un-priced Bid Volume (TTQUAB<sub>j</sub>), the value of NIV Tagged System Total Un-priced Bid Volume (TTQUAB<sub>j</sub>) shall be set to zero for that Settlement Period.

(g) However, for each of paragraphs (c), (d), (e) and (f) (each a "relevant provision") separately, if the application of the relevant provision (the "initial calculation") would result in there being any Ranked Bid or Ranked Offer which:

- (1) is not defined as (as the case may be) a NIV Tagged Bid, NIV Tagged Offer, NIV Tagged ESVA or NIV Tagged EBVA, but
- (2) has the same price (other than merely by virtue of being a fraction (1 - φ) pursuant to the initial calculation) as, in the case of a Ranked Bid, a Ranked Bid which is a NIV Tagged Bid or NIV Tagged ESVA or, in the case of Ranked Offer, a Ranked Offer which is a NIV Tagged Offer or NIV Tagged EBVA,

then:

- (i) all such Ranked Bids  $QAPB^{n'_r}_{ij}$  or  $ESVA^{n'_r}_j$  or Ranked Offers  $QAPO^{n'_r}_{ij}$  or  $EBVA^{n'_r}_j$  (whether or not NIV Tagged Bids, NIV Tagged ESVA, NIV Tagged Offers or NIV Tagged EBVA on the basis of the initial calculation) which have the same price are "threshold Bids" (in the case of Ranked Bids) or "threshold Offers" (in the case of Ranked Offers);
- (ii) no threshold Bid or threshold Offer shall be defined as a NIV Tagged Bid or NIV Tagged ESVA or NIV Tagged Offer or NIV Tagged EBVA (as the case may be) pursuant to the relevant provision, but instead the fraction  $\delta$  of each threshold Bid  $QAPB^{n'_r}_{ij}$  or  $ESVA^{n'_r}_j$  or threshold Offer  $QAPO^{n'_r}_{ij}$  or  $EBVA^{n'_r}_j$  which satisfies the following shall be defined as NIV Tagged Bids, NIV Tagged ESVA, NIV Tagged Offers or NIV Tagged EBVA (as the case may be):

$$\delta * (\sum^{n'_r} QAPB^{n'_r}_{ij}, ESVA^{n'_r}_j) = \sum^{n'_r} QAPB^{n'_r}_{ij}, ESVA^{n'_r}_j$$

or (as the case may be)

$$\delta * (\sum^{n'_r} QAPO^{n'_r}_{ij}, EBVA^{n'_r}_j) = \sum^{n'_r} QAPO^{n'_r}_{ij}, EBVA^{n'_r}_j$$

where

$\sum^{n'_r}$  is the sum over all threshold Bids or (as the case may be) threshold Offers, and

$\sum^{n_r}$  is the sum over all threshold Bids or (as the case may be) threshold Offers (including a fraction  $\phi$  thereof) which, on the basis of the initial calculation would have been defined as NIV Tagged Bids or NIV Tagged ESVA or (as the case may be) NIV Tagged Offers or NIV Tagged EBVA.

#### 4 PAR Tagging

4.1 In respect of each Settlement Period, PAR Tagged Offers, PAR Tagged Bids, PAR Tagged EBVA and PAR Tagged ESVA will be defined in the following way:

- (a) The set of all accepted Bids, which are neither De Minimis Bids nor Arbitrage Accepted Bids nor NIV Tagged Bids, will be ranked in price order, cheapest first (where the cheapest is allocated a  $n$  value of 1, the next cheapest a  $n$  value of 2 and so on). In any case where such Bids have the same price as each other, the ordering of such Bids will be random, subject to paragraph (g). The set of Non-De Minimis and Non-arbitrage and NIV-Untagged Bids  $\{QAPB^{n_1}_{ij}, QAPB^{n_2}_{ij}, \dots, QAPB^{n_w}_{ij}\}$  is then a set of "**Ranked Priced Bids**".

The NIV-Untagged Sell Price Volume Adjustment (Energy) (NUESVA<sub>j</sub>) will be added into the set of Ranked Priced Bids according to the Sell Price Cost Adjustment (Energy) (ESCA<sub>j</sub>) (converted to a price in £/MWh, i.e. ESCA<sub>j</sub> / ESVA<sub>j</sub>). The volume will, for the purposes of the PAR calculation only, be assigned a  $n$  value and the  $n$  values of the Ranked Priced Bids will be adjusted accordingly. The set of Ranked Priced Bids including the NIV-Untagged Sell Price Volume Adjustment (Energy) (NUESVA<sub>j</sub>) will then be a set of "**Ranked Bids**".

Where the price of the NIV-Untagged Sell Price Volume Adjustment (Energy) is the same as any other Ranked Priced Bid, then the NIV-Untagged Sell Price Volume Adjustment (Energy) volume will be given the highest  $n$  value of the Bid(s) with the same price.

This then, for the purposes of the PAR Tagging calculation only, will constitute a set of "**Ranked Bid Volumes**", as follows:

$((-QAPB^{n_{ij}} \dots), (-NUESVA^{n_{ij}}))$

- (b) The set of all accepted Offers, which are neither De Minimis Offers nor Arbitrage Accepted Offers nor NIV Tagged Offers will be ranked in price order, most expensive first (where the most expensive is allocated a  $n$  value of 1, the next most expensive a  $n$  value of 2 and so on). In any case where such Offers have the same price as each other, the ordering of such Offers will be random, subject to paragraph (g). The set of Non-De Minimis and Non-arbitrage and NIV-Untagged Offers  $\{QAPO^{n_1}_{ij}, QAPO^{n_2}_{ij}, \dots, QAPO^{n_x}_{ij}\}$  is then a set of "**Ranked Priced Offers**".

The NIV Untagged Buy Price Volume Adjustment (Energy) (NUEBVA<sub>j</sub>) will be added into the set of Ranked Priced Offers according to the Buy Price Cost Adjustment (Energy) (EBCA<sub>j</sub>) (converted to a price in £/MWh, i.e. EBVA<sub>j</sub> / EBVA<sub>j</sub>). The volume will, for the purposes of the PAR calculation only, be assigned a  $n$  value and the  $n$  values of the Ranked Priced Offers will be

adjusted accordingly. The set of Ranked Priced Offers including the NIV-Untagged Buy Price Volume Adjustment (Energy) (NUEBVA<sub>j</sub>) will then be a set of "**Ranked Offers**".

Where the price of the NIV-Untagged Buy Price Volume Adjustment (Energy) is the same as any other Ranked Priced Offer, then the NIV-Untagged Buy Price Volume Adjustment (Energy) volume will be given the highest n" value of the Offer(s) with the same price.

This then, for the purposes of the PAR Tagging calculation only, will constitute a set of "**Ranked Offer Volumes**", as follows:

((QAPO<sup>n"</sup><sub>ij</sub> ...), (NUEBVA<sup>n"</sup><sub>j</sub>))

(c) If:

$$\{\sum^{n"} (-QAPB^{n"}_{ij}) + (-NUESVA^{n"}_j)\} \leq \text{PAR}$$

where  $\sum^{n"}$  is the sum over the Ranked Priced Bids,

then none of the Ranked Bid Volumes (for all values of n") will be defined as PAR Tagged Bids or the PAR Tagged ESVA (as the case may be).

(d) If  $\{\sum^{n"} (-QAPB^{n"}_{ij}) + (-NUESVA^{n"}_j)\} > \text{PAR}$  there must exist a number f and a number  $\phi$  (which may be a fraction or one) for which

$$\text{PAR} = \{(\sum^{n"}_{v < f} (-QAPB^{n"}_{ij}), (-NUESVA^{n"}_j)) + \phi * ((-QAPB^{n"}_{ij}), (-NUESVA^{n"}_j))\}$$

where  $\sum^{n"}_{v < f}$  is the sum over those Ranked Bid Volumes for which v is less than f.

Subject to paragraph (g), each Ranked Bid Volume of the Ranked Bid Volumes numbered f+1 or higher for which this is true will be defined as a PAR Tagged Bid or the PAR Tagged EBVA (as the case may be). If  $\phi$  is a fraction rather than 1, then the fraction (1- $\phi$ ) of the Ranked Bid Volume numbered f will be defined as a PAR Tagged Bid or the PAR Tagged ESVA (as the case may be).

For the purposes of the energy imbalance price calculation (Section T 4.4.5 and 4.4.6):

The Untagged ESVA (UESVA<sub>j</sub>) is the portion of NIV Untagged Sell Price Volume Adjustment (Energy) (NUESVA<sub>j</sub>) which is not PAR Tagged ESVA (PTESVA<sub>j</sub>) for the relevant Settlement Period. If none of the NIV Untagged Sell Price Volume Adjustment (Energy) (NUESVA<sub>j</sub>) is PAR Tagged ESVA, the Untagged ESVA shall be equal to the NIV Untagged Sell Price Volume Adjustment (Energy) (NUESVA<sub>j</sub>) (and the PAR Tagged ESVA shall be set to zero). If all of the Sell Price Volume Adjustment (Energy) (ESVA<sub>j</sub>) is NIV Tagged ESVA or PAR Tagged ESVA, the Untagged ESVA shall be set to zero.

The Untagged ESCA (UESCA<sub>j</sub>) is then the portion of the Sell Price Cost Adjustment (Energy) associated with the Untagged ESVA for the relevant Settlement Period determined as follows:

$$\text{UESCA}_j = \text{UESVA}_j * (\text{ESCA}_j / \text{ESVA}_j)$$

(e) If:

$$\{\sum^{n''} (\text{QAPO}^{n''}_{ij}) + (\text{NUEBVA}^{n''}_j)\} \leq \text{PAR}$$

where  $\sum^{n''}$  is the sum over the Ranked Priced Offers,

then none of the Ranked Offer Volumes (for all values of  $n''$ ) will be defined as PAR Tagged Offers or the PAR Tagged EBVA (as the case may be).

(f) If  $\{\sum^{n''} (\text{QAPO}^{n''}_{ij}) + (\text{NUEBVA}^{n''}_j)\} > \text{PAR}$  there must exist a number  $f$  and a number  $\phi$  (which may be a fraction or one) for which

$$\text{PAR} = \{(\sum^{n'' v < f} (\text{QAPO}^{n''v}_{ij}), (\text{NUEBVA}^{n''v}_j)) + \phi * ((\text{QAPO}^{n''f}_{ij}), (\text{NUEBVA}^{n''f}_j))\}$$

where  $\sum^{n'' v < f}$  is the sum over those Ranked Offer Volumes for which  $v$  is less than  $f$ .

Subject to paragraph (g), each Ranked Offer Volume of the Ranked Offer Volumes numbered  $f+1$  or higher for which this is true will be defined as a PAR Tagged Offer or the PAR Tagged EBVA (as the case may be). If  $\phi$  is a fraction rather than 1, then the fraction  $(1-\phi)$  of the Ranked Offer Volume numbered  $f$  will be defined as a PAR Tagged Offer or the PAR Tagged EBVA (as the case may be).

For the purposes of the energy imbalance price calculation (Section T 4.4.5 and 4.4.6):

The Untagged EBVA ( $\text{UEBVA}_j$ ) is the portion of NIV Untagged Buy Price Volume Adjustment (Energy) ( $\text{NUEBVA}_j$ ) which is not PAR Tagged EBVA ( $\text{PTEBVA}_j$ ) for the relevant Settlement Period. If none of the NIV Untagged Buy Price Volume Adjustment (Energy) ( $\text{NUEBVA}_j$ ) is PAR Tagged EBVA, the Untagged EBVA shall be equal to the NIV Untagged Buy Price Volume Adjustment (Energy) ( $\text{NUEBVA}_j$ ) (and the PAR Tagged EBVA shall be set to zero). If all of the Buy Price Volume Adjustment (Energy) ( $\text{EBVA}_j$ ) is NIV Tagged EBVA or PAR Tagged EBVA, the Untagged EBVA shall be set to zero.

The Untagged EBVA ( $\text{UEBVA}_j$ ) is then the portion of the Buy Price Cost Adjustment (Energy) associated with the Untagged EBVA for the relevant Settlement Period determined as follows:

$$\text{UEBCA}_j = \text{UEBVA}_j * (\text{EBCA}_j / \text{EBVA}_j)$$

(g) However, for each of paragraphs (c), (d), (e) and (f) (each a "relevant provision") separately, if the application of the relevant provision (the "initial calculation") would result in there being any Ranked Bid or Ranked Offer which:

- (1) is not defined as (as the case may be) a PAR Tagged Bid, PAR Tagged Offer, PAR Tagged ESVA or PAR Tagged EBVA, but
- (2) has the same price (other than merely by virtue of being a fraction  $\phi$  pursuant to the initial calculation) as, in the case of a Ranked Bid, a Ranked Bid which is a PAR Tagged Bid or PAR Tagged ESVA or,

in the case of Ranked Offer, a Ranked Offer which is a PAR Tagged Offer or PAR Tagged EBVA,

then:

- (i) all such Ranked Bids  $QAPB^{n_r}_{ij}$  or  $ESVA^{n_r}_j$  or Ranked Offers  $QAPO^{n_r}_{ij}$  or  $EBVA^{n_r}_j$  (whether or not PAR Tagged Bids, PAR Tagged ESVA, PAR Tagged Offers or PAR Tagged EBVA on the basis of the initial calculation) which have the same price are "threshold Bids" (in the case of Ranked Bids) or "threshold Offers" (in the case of Ranked Offers);
- (ii) no threshold Bid or threshold Offer shall be defined as a PAR Tagged Bid or PAR Tagged ESVA or PAR Tagged Offer or PAR Tagged EBVA (as the case may be) pursuant to the relevant provision, but instead the fraction  $\delta$  of each threshold Bid  $QAPB^{n_r}_{ij}$  or  $ESVA^{n_r}_j$  or threshold Offer  $QAPO^{n_r}_{ij}$  or  $EBVA^{n_r}_j$  which satisfies the following shall be defined as PAR Tagged Bids, PAR Tagged ESVA, PAR Tagged Offers or PAR Tagged EBVA (as the case may be):

$$\delta * (\sum^{n_r} QAPB^{n_r}_{ij}, ESVA^{n_r}_j) = \sum^{n_{r'}} QAPB^{n_{r'}}_{ij}, ESVA^{n_{r'}}_j$$

or (as the case may be)

$$\delta * (\sum^{n_r} QAPO^{n_r}_{ij}, EBVA^{n_r}_j) = \sum^{n_{r'}} QAPO^{n_{r'}}_{ij}, EBVA^{n_{r'}}_j$$

where

$\sum^{n_r}$  is the sum over all threshold Bids or (as the case may be) threshold Offers, and

$\sum^{n_{r'}}$  is the sum over all threshold Bids or (as the case may be) threshold Offers (including a fraction  $1-\phi$  thereof) which, on the basis of the initial calculation would have been defined as PAR Tagged Bids or PAR Tagged ESVA or (as the case may be) PAR Tagged Offers or PAR Tagged EBVA.