

Balancing and Settlement Code

BSC Service Description for Balancing Mechanism Reporting

Version 24.1~~Version 24.0~~

Date: ~~11 December 2019~~

AMENDMENT HISTORY

Date	Version	Description of Change	Mods/ Panel/ Committee Refs
27.03.01	1.0	Baseline version	NETA Programme
07.01.02	2.0	Phase B – Modifications P8 and P18A (Patches)	S. Francis
13/08/02	4.0	Release 2 – Modifications P8, 18A (Reporting), P48, CP537, CP549, CP560)	CVA Programme
10/12/02	5.0	P12, CP589	CVA Programme
11/03/03	6.0	P78, P71	CVA Programme
11/04/03	7.0	P82	CVA Programme
05/11/03	8.0	P82 – incorporates review comments from the NETA CSA	CVA Programme
30/06/04	9.0	Change Proposal for CVA Programme June 04 Release – CP921	CVA Programme
23/02/05	10.0	CVA Programme Feb 05 Release, CP1091	CVA Programme
02/11/05	11.0	CVA Programme Nov 05 Release	CVA Programme
02/11/06	12.0	BSC Systems November 06 Release – P194	Change Implementation
01/12/06	13.0	BSC Systems November 06 Release – P205	Change Implementation
26/06/08	14.0	BSC Systems June 08 Release – CP1220, CP1222	Change Implementation
06/11/08	15.0	BSC Systems November 08 Release, CP1246, P220	Change Implementation
25/06/09	16.0	BSC Systems June 09 Release, P226	Change Implementation
05/11/09	17.0	BSC Systems November 09 Release, P217	Change Implementation
29/11/12	18.0	BSC Systems November 12 Release, P278	ISG138/10
16/12/14	19.0	BSC Systems December 14 Release, P291, P295	ISG162/01
05/11/15	20.0	BSC Systems November 15 Release, P305	ISG172/04
29/06/17	21.0	June 2017 Release, P321 Self-Governance	P245/05
29/03/19	22.0	29 March 2019 Standalone Release – P369	P285/12
27/06/19	23.0	27 June 2019 Release – P372 Self-Governance	P290/07 ISG218/03
11/12/19	24.0	11 December 2019 Standalone Release – CP1517	ISG220/01 ISG222/03
<u>04/11/21</u>	<u>24.1</u>	<u>4 November 2021 Standard Release – P399</u>	<u>P310/04</u>

CONTENTS

SCHEDULE 1 - BSC OPERATING SERVICES.....	5
1 OVERVIEW	5
2. PERIOD OF RESPONSIBILITY	5
3. SERVICE AVAILABILITY	6
4. DATA STORAGE	6
5. DATA ACCESS AND REPORTS	6
6. REGISTRATION DATA	7
7. INFORMATION FROM THE NETSO.....	7
7A GBP-EURO EXCHANGE RATE INFORMATION.....	12
8. INFORMATION FROM BSCCO	13
8.A. INFORMATION FROM THE MARKET INDEX DATA PROVIDER.....	14
8B INFORMATION FROM ECVA.....	15
8C INFORMATION FROM CRA	15
8D INFORMATION FROM BMR SERVICE USERS.....	15
8E INFORMATION FROM SAA.....	15
9. SUSPENSION OF INDICATIVE PRICE CALCULATIONS	15
10. DERIVE MARKET INFORMATION.....	16
11 TIMEKEEPING.....	19
12 PERFORMANCE REPORTING	20
13 PROVISION OF DATA TO ENTSO-E	20
APPENDIX A INPUT AND OUTPUT FLOWS.....	21
SCHEDULE 1 – BSC OPERATING SERVICES.....	4
1 OVERVIEW	4
2. PERIOD OF RESPONSIBILITY	4
3. SERVICE AVAILABILITY	5
4. DATA STORAGE	5
5. DATA ACCESS AND REPORTS	5
6. REGISTRATION DATA	6
7. INFORMATION FROM THE NETSO.....	6
7A GBP-EURO EXCHANGE RATE INFORMATION.....	11
8. INFORMATION FROM BSCCO	12
8.A. INFORMATION FROM THE MARKET INDEX DATA PROVIDER.....	13
8B INFORMATION FROM ECVA.....	14
8C INFORMATION FROM CRA	14

8D	INFORMATION FROM BMR SERVICE USERS	14
8E	INFORMATION FROM SAA	14
9	SUSPENSION OF INDICATIVE PRICE CALCULATIONS	14
10	DERIVE MARKET INFORMATION	15
11	TIMEKEEPING	18
12	PERFORMANCE REPORTING	18
13	PROVISION OF DATA TO ENTSO-E	19
APPENDIX A	INPUT AND OUTPUT FLOWS	20

Intellectual Property Rights, Copyright and Disclaimer

The copyright and other intellectual property rights in this document are vested in ~~ELEXON~~ [Elexon](#) or appear with the consent of the copyright owner. These materials are made available for you for the purposes of your participation in the electricity industry. If you have an interest in the electricity industry, you may view, download, copy, distribute, modify, transmit, publish, sell or create derivative works (in whatever format) from this document or in other cases use for personal academic or other non-commercial purposes. All copyright and other proprietary notices contained in the document must be retained on any copy you make.

All other rights of the copyright owner not expressly dealt with above are reserved.

No representation, warranty or guarantee is made that the information in this document is accurate or complete. While care is taken in the collection and provision of this information, ~~ELEXON~~ [Elexon](#) Limited shall not be liable for any errors, omissions, misstatements or mistakes in any information or damages resulting from the use of this information or action taken in reliance on it.

SCHEDULE 1 - BSC OPERATING SERVICES**PART C – SERVICE DESCRIPTION FOR BALANCING MECHANISM REPORTING****1 OVERVIEW**

- 1.1 This document contains the provisions for the Service Description for the BMRA appointed by BSCCo for the purposes of providing a BMRS.
- 1.2 The purpose of this document (which is for convenience referred to as a Service Description) is to set out the basic elements of the BMRS.
- 1.3 The purpose of the BMRS is to collect and display Balancing Mechanism and other data in near to real-time to interested parties (BMR Service Users). The BMRA will display the data detailed in Table 1 of the BMRS Data Catalogue. A range of information (historic, current and forecast) will be received by the BMRA from the National Electricity Transmission System Operator (NETSO). Some of this information, in tabular form, may be of interest to some BMR Service Users. However, information pertaining to recent history, current market activities and short term forecasts may be presented in graphical or pictorial format.
- 1.4 The BMRA will be required to publish information within the timescales specified in this document so as to present a near to real-time representation of the electricity markets and the Balancing Mechanism. The information shall be published in a manner appropriate for screen based access that will make use of drill-down facilities and intuitive on-screen cues to ensure that the information can be readily accessed. Facilities must be available for data to be downloaded in a common format (e.g. comma delimited ASCII) so that BMR Service Users can analyse the information using their own management support systems. Proprietary database access tools may be provided.
- 1.5 The BMRA will make available two grades of service, one class of service where the BMR Service User has constant, high quality access to the BMRS and a second class of service for those BMR Service Users who are only entitled to a lower grade of access to the BMRS. Information on the data published via these two grades of service is available in the 'NETA Interface Definition and Design (IDD): Part 1 – Interfaces with BSC Parties and their Agents'. Except where otherwise indicated, in this document the term BMR Service User refers to both of these groups.
- 1.6 The terms, definitions and abbreviations used in this document shall have the meanings given in the Glossary and Part A of this Agreement.
- 1.7 The performance standards that the BMRA will be required to achieve in the delivery of the BMRS are expected to include, as a minimum, those detailed in Part G of Schedule 1 of this Agreement.

2. PERIOD OF RESPONSIBILITY

The BMRA will be required to perform the responsibilities and obligations set out in this Service Description for all Calendar Days for which the BMRA is appointed by BSCCo.

3. SERVICE AVAILABILITY

The BMRA will be required to receive, store and publish information continually as it is submitted by the NETSO, the ECVAA, the CRA and BSCCo.

4. DATA STORAGE

The BMRA will be required:-

- 4.1 to store all data received from the NETSO and CRA and all Balancing Mechanism information that relates to Settlement Periods for the past year and such future forecasts as are provided by the NETSO;
- 4.2 to store all received and derived data in on-line accessible storage;
- 4.3 to store all Level 1 and Level 2 Default Notices received from ECVAA as long as the default is in force, or until the associated BSC Party is withdrawn from the BSC;
- 4.4 to store all Cleared Notices received from ECVAA for 30 days (parameterised) from receipt.

5. DATA ACCESS AND REPORTS

The BMRA will be required:-

- 5.1 to provide access to BMR Service Users to download received and derived data in a standard format (e.g. comma delimited ASCII file). Access is required to data relating to Settlement Periods for the past year and all future forecasts;
- 5.2 to provide selective BM Data reports, through on-line screens, to enable BMR Service Users to select, display and download a range of Balancing Mechanism information;
- 5.3 to provide access to Credit Default Notices as long as the notices are in force or until the associated BSC Party is withdrawn from the BSC. Cleared Notices will be available for 30 days (parameterised) from receipt;
- 5.4 to provide access to BMR Service Users to submit data relating to the Regulation on Energy Markets Transparency and Integrity (REMIT); and
- 5.5 to issue Exception Reports to the NETSO, BSCCo Ltd, MIDPs or CRA if an input message fails validation, or if insufficient data has been received or, in the case of Adjustment Data, if a system parameter is set to indicate that an exception file is required.
- 5.6 to provide data to the European Network of Transmission System Operators for Electricity (ENTSO-E) for publication on the Electricity Market Fundamental Information Platform (EMFIP).

6. REGISTRATION DATA

The BMRA will be required:-

- 6.1 to receive from the CRA such data as are necessary to enable it to carry out its obligations under this Service Description and to input this data, having first inspected this data for errors, into its systems. This data shall include the data listed below:
 - a. BM Units' and Trading Units' reference data;
 - b. BM Unit registrant reference data;
 - c. BSC Trading Party reference data;
 - d. Market Index Data Provider reference data.
- 6.2 should the BMRA be unable to process the registration data (e.g. because it is in the wrong format) it shall report the matter to the CRA;
- 6.3 to publish registration data on the BMRS within 2 hours of receipt.

7. INFORMATION FROM THE NETSO

7.1 The BMRA will be required:-

- a. to receive current and forecast system related information (including data relating to Emergency Instructions), Replacement Reserve Data and Balancing Services Adjustment Data from the NETSO and input this information, having first inspected this information for errors, into its systems for use in carrying out the services specified in this Service Description. The system related information shall be as detailed in Table 1 of the BMRS Data Catalogue. Balancing Services Adjustment Data shall be as detailed in section 7.2.
- b. to publish the system related information (including data relating to Emergency Instructions via the 'System Warning' function), Replacement Reserve Data and Balancing Services Adjustment Data, on-line, within five minutes of receipt, with the exception of the BM Unit Fuel Type List that shall be published within one Working Day of receipt. (For the purpose of this requirement Reference Temperature data and Reference Transmission Energy data relating to a particular day shall be deemed to have the same receipt time as that of the Out-Turn data relating to that day).
- c. to report the matter to the NETSO should it be unable to process, or publish, the system related information, Replacement Reserve Data or Balancing Services Adjustment Data (e.g. because it is in the wrong format)¹
- d. to publish Manifest Error Claims received from the NETSO.

¹ For Settlement Days on or after the P217 effective date any non-zero values for the 6 NETBSAD variables submitted as zero should be reported to BSCCo.

[P399]7.2 Balancing Services Adjustment Data shall comprise the following data:

For Settlement Days on or after, the P194 effective date until the P217 effective date:

- Buy-Price Cost Adjustment (Energy) (EBCA_j)
- Buy-Price Volume Adjustment (Energy) (EBVA_j)
- Buy-Price Volume Adjustment (System) (SBVA_j)
- Sell-Price Cost Adjustment (Energy) (ESCA_j)
- Sell-Price Volume Adjustment (Energy) (ESVA_j)
- Sell-Price Volume Adjustment (System) (SSVA_j)
- Buy-Price Price Adjustment (BPA_j)
- Sell-Price Price Adjustment (SPA_j)

For Settlement Dates on or after the P217 effective date:

NETBSAD:

- Buy-Price Cost Adjustment (Energy) (EBCA_j) – submitted as zero
- Buy-Price Volume Adjustment (Energy) (EBVA_j) – submitted as zero
- Buy-Price Volume Adjustment (System) (SBVA_j) – submitted as zero
- Sell-Price Cost Adjustment (Energy) (ESCA_j) – submitted as zero
- Sell-Price Volume Adjustment (Energy) (ESVA_j) – submitted as zero
- Sell-Price Volume Adjustment (System) (SSVA_j) – submitted as zero
- Buy-Price Price Adjustment (BPA_j)
- Sell-Price Price Adjustment (SPA_j)

DISBSAD:

- A number of Balancing Services Adjustment Actions. For each action:
- Settlement Day
- Settlement Period
- ID
- Cost (£)

- Volume (MWh)
- SO-Flag (T/F)
- STOR Provider Flag (T/F) (for Settlement Days on or after the P305 effective date)
- BSAD Party Id (for Settlement Days on or after the P399 effective date):
- BSAD Asset Id
- Tendered Status
- Service Type

- 7.3 In respect of each Settlement Period within a Settlement Day, in relation to the data described in section 7.2 , the BMRA shall receive:
- a. (in relation to all such Settlement periods) not later than 17:00 hours on the preceding day, the NETSO's estimate (at the relevant time of sending) of Balancing Services Adjustment Data, as described in section 7.2.
 - b. (in relation to each such Settlement Period) after Gate Closure for, and not later than the end of such Settlement Period, the SO's estimate (at the relevant time of sending) of Balancing Services Adjustment Data, as described in section 7.2.
 - c. On the day next following such Settlement Day, the Balancing Services Adjustment Data, as described in section 7.2.
- 7.4 For the purpose of the Indicative Imbalance Price calculation, for each Settlement Period, the BMRA will be required to use the most recently received Balancing Services Adjustment Data, relating to that Settlement Period.
- 7.5 In respect of any Settlement Period within a Settlement Day, at any time prior to the Final Reconciliation Settlement Run for such Settlement Day the BMRA will be required to publish any updates to Balancing Services Adjustment Data, for that Settlement Period.
- 7.6 The BMRA will be required to receive from the NETSO for relevant BM Units only, Applicable Balancing Services Volume data transmitted by the NETSO within 2 Business Days after the relevant Settlement Period to which the energy pertained, or as otherwise received from the NETSO.
- 7.7 The BMRA will be required to receive from the NETSO such BM Data as are necessary to enable it to carry out its obligations under this Service Description and to input this data, having first inspected this data for errors (e.g. alphabetic data submitted where numeric data is expected), into its systems. This data shall include the data listed below:
- a. FPN Data, (If no FPN Data has been received for a particular Settlement Period the FPN may have been defaulted by the NETSO to the previously submitted

- IPN Data as per agreed rules in the BSC), transmitted by the NETSO to the BMRA at, or soon after, Gate Closure for any Settlement Period;
- b. Bid-Offer Data, transmitted by the NETSO to the BMRA at, or soon after, Gate Closure for any Settlement Period;
 - c. Bid-Offer Acceptance Data, transmitted by the NETSO to the BMRA at any time from Gate Closure to the end of the Settlement Period in close to real-time;
 - d. Dynamic Data, transmitted by the NETSO to the BMRA at any time from Gate Closure to the end of the Settlement Period in close to real-time; and
 - e. Loss of Load Probability and De-rated Margin data, transmitted by the NETSO to the BMRA each half hour for forthcoming Settlement Periods; and
 - f. STOR Availability Window data, transmitted by the NETSO to the BMRA from time to time in accordance with the NETSO's STOR tender process.
- 7.8 publish the BM Data, on-line, within 5 minutes of receipt.
- 7.9 monitor the receipt of BM Data received from the NETSO and notify the NETSO where this data is missing for any half hour period.
- 7.10 should the BMRA be unable to input BM Data (e.g. because it is in the wrong format) it shall report the matter to the NETSO. The BMRA shall default data in accordance with BSC Section V clause 2.2.3 where the default value is none.
- 7.11 For Settlement Days on or after, the TERRE Final Implementation Date, the BMRA shall be required to receive from the NETSO, and to publish on the BMRS, Replacement Reserve (RR) Data, which shall comprise the following data:
- Once per hour (approximately 45 minutes before the hour starts) National Grid shall send to BMRA details of all RR Bids submitted by GB parties for that RR Auction Period (RR Bid Data);
 - Once per hour (approximately 30 minutes before the hour starts) National Grid shall send to BMRA the Replacement Reserve Auction Result Data (RR Auction Results), which shall comprise:
 - RR Activation Data
 - GB Need Met Data
 - Terre Clearing Price
 - Interconnector Schedule Data
- 7.12 RR Bid Data shall comprise:
- Party Id
 - BM Unit Id

- Associated TSO
- Market balance area
- Divisible [A01 Yes / A02 No]
- Linking Bid Id (where applicable)
- Multipart Bid Id (where applicable)
- Exclusive Bid Id (where applicable)
- Flow Direction [A01 = UP / A02 = Down]
- Incremental size (where applicable) [i.e. Divisible A01]
- Minimum quantity (MW);
- Maximum quantity (MW);
- Bid Resolution [PT60M / PT30M / PT15M]
- Position
- Price (£/MWh);
- Status [A06 Available / A28 unshared / A11 Restricted]

7.13 RR Activation Data for each RR Auction Period shall include:

- BM Unit Id
- Flow Direction [A01 = UP / A02 = Down]
- Activated Quantity (MW Level)
- Bid Resolution [PT60M / PT30M / PT15M]
- Position
- Activation Price (i.e. TERRE Clearing Price)

7.14 GB Need Met Data for each RR Auction Period shall include:

- Flow Direction [A01 = UP / A02 = Down]
- Activated Quantity (MW Level)
- Activation Price (i.e. TERRE Clearing Price)

- 7.15 Interconnector Schedule Data for each Interconnector for each Replacement Reserve Auction Period.
- Interconnector Id
 - Flow Direction [A01 = UP / A02 = Down]
 - Activated Quantity (MW Level)
- 7.16 The BMRA shall convert any Replacement Reserve Activation Data, GB Need Met Data and Interconnector Schedule Data received from the NETSO into the required Quarter Hour format.
- 7.17 For the purpose of the Replacement Reserve calculations, for each Settlement Period, the BMRA will be required to use the most recently received Replacement Reserve Data, relating to that Settlement Period.
- 7.18 In respect of any Settlement Period within a Settlement Day, at any time prior to the Final Reconciliation Settlement Run for such Settlement Day the BMRA will be required to publish any updates to Replacement Reserve Data, for that Settlement Period received from NETSO.
- 7.19 The BMRA shall display System Warning and System Messages on the BMRS for seven consecutive calendar days, starting from the day on which such messages are received.
- 7.20 process Maximum Import Limit and Maximum Export Limit data in timestamp order, and then in sequence number order where data items have the same timestamp.
- 7.21 for the purpose of reporting Out-Turn Generation by Fuel Type Category data the BMRA shall filter out all negative generation values received from the NETSO and report such values as zero, with the exception of the Total Period Out-Turn Generation values that the BMRA sends to those users who have constant, high quality access to the BMRS (high grade users). Such users shall receive both positive and negative values in respect of the interconnector Fuel Type Categories.
- 7.22 The BMRA shall be required to receive from the NETSO, and to publish on the BMRS, data relating to the Regulation on Energy Market Integrity and Transparency (REMIT)² and the European Transparency Regulation³. The information shall be as detailed in Table 2 and 3 of the BMRS Data Catalogue.
- 7.23 The BMRA shall be required to receive from the NETSO, and to publish on the BMRS, Demand Control Instructions issued in relation to Demand Control Events.

7A GBP-EURO EXCHANGE RATE INFORMATION

- 7A.1 The BMRA shall each Settlement Day procure the GBP-EURO exchange rate from the Financial Services Provider approved by the Panel through a transparent process.

² Regulation (EU) No 1227/2011

³ Regulation (EU) No 543/2013

7A.2 The BMRA shall publish the GBP-EUR exchange rate in accordance with the BMRA Data Catalogue.

7A.3 The BMRA shall provide the GBP-EUR exchange rate to the Settlement Administration Agent system each day via an automated interface.

8. INFORMATION FROM BSCCO

8.1 The BMRA shall receive and store the following System Parameters from BSCCo for use in its calculations:

- a. Estimated Offtaking Transmission Losses Adjustment (ETLMO_j⁻)
- b. Estimated Delivering Transmission Losses Adjustment (ETLMO_j⁺)
- c. Arbitrage Flag
- d. De Minimis Acceptance Threshold (DMAT_d)
- e. Continuous Acceptance Duration Limit (CADL_d)
- f. In relation to Market Index Data Provider, Individual Liquidity Thresholds
- g. Price Average Reference (PAR) Volume (PAR_d)
- h. Replacement Price Average Reference (RPAR) Volume (RPAR_d)

8.2 The DMAT_d parameter will be set and from time to time amended by BSCCo, who will also decide upon its effective date. This date shall not be less than 20 Business Days after BSCCo's initial decision to revise the threshold value. Initially, the De Minimis Acceptance Threshold will be set at 1MWh.

8.3 The CADL_d value is set and revised by BSCCo from time to time (subject to consultation with BSC Parties and the NETSO) and can range between 0 and 30 minutes, but will initially be set at 15 minutes. Any revised value of CADL_d shall become effective from a Settlement Day determined by BSCCo.

8.4 The Individual Liquidity Thresholds are set and revised by the Panel, with the approval of the Authority, and are a MWh volume for each MIDP.

8.5 BSCCo may instruct the BMRA to remove Credit Default Notices from their screens (when a party is removed from the BSC or a dispute is upheld). No explicit message is to be sent to BMRS users informing them of the removal of the notice.

8.6 The PAR_d parameter will be a MWh volume with a value of 500MWh. This value may only be changed by an Approved Modification Proposal. Any revised value shall become effective from a Settlement Day defined by the Approved Modification Proposal and will be communicated to the BMRA by the BSCCo.

- 8.7 The RPAR_d parameter will be a MWh volume with a value of 100MWh. This value may only be changed by an Approved Modification Proposal. Any revised value shall become effective from a Settlement Day defined by the Approved Modification Proposal and will be communicated to the BMRA by the BSCCo.
- 8.8 A revised Market Index Definition Statement together with its effective date may from time to time be received from BSCCo by the BMRA.

8.A. INFORMATION FROM THE MARKET INDEX DATA PROVIDER

- 8.A.1 The BMRA shall receive, validate and store Market Index Data provided by each Market Index Data Provider in respect of each Settlement Period comprising of:

- a. a Market Index Volume expressed in MWh; and
- b. a Market Index Price expressed in £/MWh.

- 8.A.2 The BMRA shall validate the Market Index Volume using data maintained by the CRA to perform the following checks:

- a. the Market Index Data has been submitted by a valid Market Index Data Provider;
- b. in respect of a Settlement Period and Market Index Data Provider the Individual Liquidity Threshold does not exceed the Market Index Volume (excluding where the Market Index Volume is supplied as zero).

- 8.A.3 If in respect of a Settlement Period and a Market Index Data Provider:

- a. the Individual Liquidity Threshold exceeds the Market Index Volume (excluding where the Market Index Volume is supplied as zero); or
- b. a Market Index Data Provider fails for whatever reason to submit Market Index Data in time for it to be used in the indicative energy imbalance price calculations,

the BMRA shall default the Market Index Price and Market Index Volume to zero for that Settlement Period. Where the BMRA has not received Market Index Data in respect of a Settlement Period from a Market Index Data Provider, as described in 8A.3(b), the BMRA shall post a warning message to that effect on the BMRS.

- 8.A.4 For the purposes of Performance Reporting, the BMRA shall for each Market Index Data Provider:

- a. record the number of Settlement Periods where the BMRA has defaulted Market Index Data to zero for the reason described in 8A.3.a;
- b. record the number of Settlement Periods where the MIDP has failed to provide Market Index Data for the reason described in 8A.3.b;

- c. record the number of Settlement Periods where the Market Index Data with zero values has been used in indicative energy imbalance price calculations, for whatever reason (including, for the avoidance of doubt, instances where the Market Index Data Provider has provided zero values).

8.A.5 The BMRA shall report Market Index Data Provider Liquidity Threshold Data to BSCCo.

8B INFORMATION FROM ECVA

8B.1 The BMRA will be required:-

- a. to receive Credit Default Notice data from the ECVA;
- b. to publish the Credit Default Notice within five minutes of receipt.

8C INFORMATION FROM CRA

8C.1 The BMRA shall receive and store Transmission Loss Factors (TLFs) from CRA for use in its calculations.

8D INFORMATION FROM BMR SERVICE USERS

[P399]8D.1 The BMRA shall be required to receive from BMR Service Users, and to publish on the BMRS, data relating to the Regulation on Energy Market Integrity and Transparency (REMIT). The information shall be as detailed in ~~Table 1 of Annex V-1 of the Code~~ the BMRS Data Catalogue.

8E INFORMATION FROM SAA

8E.1 The BMRA shall receive and store Trading Unit Data, to include Trading Unit Delivery Mode, Trading Unit Import Volume and Trading Unit Export Volume data, from SAA.

9. SUSPENSION OF INDICATIVE PRICE CALCULATIONS

9.1 When the BMRA is advised of an Outage by the NETSO, or the requisite data is unavailable for other reasons, it shall carry out the following procedures in order to avoid publishing erroneous Settlement data:

- a. If an Outage is planned, the BMRA shall receive a prior warning from the NETSO detailing the expected date and time of the Outage. For unplanned Outages, or other periods of data unavailability, the BMRA will be informed of the date and time as soon as possible;
- b. The BMRA shall inform BSCCo that Settlement calculations shall be suspended during the Outage or other period of data unavailability;
- c. From the time at which the Outage commenced (if it was planned), or as soon as possible after it commenced (if the Outage was unplanned, or the requisite data was unavailable for other reasons) the BMRA shall disable its automatic calculation processes. In the case of an unplanned Outage, or other period of

- data unavailability, the BMRA shall also send confirmation to BSCCo that calculations have been suspended;
- d. During the Outage or other period of data unavailability, the BMRA shall load and report any Bid-Offer and Physical Notification data received from the NETSO as normal;
 - e. When the Outage, or other period of data unavailability, has ceased, the BMRA shall receive and load the backlog of Bid-Offer Data issued by the NETSO. Once the backlog has been received and loaded, the automatic calculation processes shall be re-enabled to operate on the first Settlement Period affected by the Outage, or other period of data unavailability;
 - f. The BMRA will then inform BSCCo that calculations have resumed, and confirm the Settlement Periods that have been affected.
- 9.2 During an Outage, or other period of data unavailability, the BMRA reporting service shall continue to operate as normal.
- 9.3 In cases where an unplanned Outage, or other period of data unavailability, has led to the calculation processes being disabled after the first Settlement Period affected (and therefore incorrect data has been published), the BMRA is not required to re-calculate and correct the data on the BMRS once the Outage, or other period of data unavailability, has ceased.
- 9.4 In the event that the date and time of a planned Outage changes from that already notified by the NETSO, a further warning shall be issued to the BMRA containing the revised date and time.

10. DERIVE MARKET INFORMATION

The BMRA will be required:-

- 10.1 to calculate, store and publish on-line, the following derived values for each Settlement Period within <CADL> + 15 minutes from the end of the Settlement Period:

For Settlement Dates on or after the P194 effective date until the P217 effective date:

- Indicative Accepted Offer Volume
- Indicative Accepted Bid Volume
- Indicative Period BM Unit Total Accepted Offer Volume
- Indicative Period BM Unit Total Accepted Bid Volume
- Indicative Period BM Unit Offer Cashflow
- Indicative Period BM Unit Bid Cashflow
- Indicative System Total Accepted Offer Volume
- Indicative System Total Accepted Bid Volume
- Indicative System Total Un-priced Accepted Offer Volume

- Indicative System Total Un-priced Accepted Bid Volume
- Indicative Total Accepted Priced Offer Volume
- Indicative Total Accepted Priced Bid Volume
- Indicative Net Imbalance Volume
- Indicative System Buy Price
- Indicative System Sell Price

For Settlement Days on or after the P217 effective date:

Derived System-wide Data:

- Period Bid and Offer Acceptance Volumes (QAB^{kn}_{ij} , QAO^{kn}_{ij} and CADL Flag)
- Estimated Period Balancing Mechanism Bid and Offer Cashflows (CB^{n}_{ij} and CO^{n}_{ij})
- Estimated Period Balancing Mechanism Bid and Offer Cashflows (CB^{n}_{ij} and CO^{n}_{ij})
- Estimated Period BM Unit Original Accepted Bid and Offer Volume (QAB^{n}_{ij} and QAO^{n}_{ij})
- Estimated Period BM Unit Tagged Accepted Bid and Offer Volume ($QTAB^{n}_{ij}$ and $QTAO^{n}_{ij}$)
- Estimated Period BM Unit Repriced Accepted Bid and Offer Volume ($QRAB^{n}_{ij}$ and $QRAO^{n}_{ij}$)
- Estimated Period BM Unit Originally-Priced Accepted Bid and Offer Volume ($QOAB^{n}_{ij}$ and $QOAO^{n}_{ij}$)
- Estimated System Sell/Buy Prices (SBP_j and SSP_j)
- Price Derivation Code (PDC_j)
- Indicative Net Imbalance Volume (NIV_j)
- Replacement Price (RP_j)
- Replacement Price Calculation Volume (RPV_j)
- Total System Accepted Bid Volume ($TQAB_j$)
- Total System Accepted Offer Volume ($TQAO_j$)
- Total System Tagged Accepted Bid Volume ($TQATB_j$)
- Total System Tagged Accepted Offer Volume ($TQATB_j$)
- Total System Balancing Services Adjustment Buy Volume ($TQBSAB_j$)
- Total System Balancing Services Adjustment Sell Volume ($TQBSAS_j$)
- Total System Balancing Services Adjustment Tagged Buy Volume ($TQBSATB_j$)

- Total System Balancing Services Adjustment Tagged Sell Volume (TQBSATS_j)

For Settlement Days on or after the P305 effective date, the following data:

- Loss of Load Probability
- De-rated Margin Forecast
- Reserve Scarcity Price (RSVP_j)

The BMRA Service shall publish details of the Indicative System Price Stacks once for each Settlement Period. This will detail all items on both the Buy and Sell Stacks including a description of the ordering of items within each stack. Each stack item will have the following data reported against it:

- Index
- Component Identifier
- Acceptance Number
- Bid-Offer Pair Number
- CADL Flag (T/F)
- SO-Flag (T/F)
- STOR Provider Flag (T/F)
- Repriced Indicator (T/F)
- Utilisation Price (£/MWh)
- Reserve Scarcity Price (£/MWh)
- Original Price (£/MWh)
- Volume (MWh)
- DMAT Adjusted Volume (MWh)
- Arbitrage Adjusted Volume (MWh)
- NIV Adjusted Volume (MWh)
- PAR Adjusted Volume (MWh)
- Final Price (£/MWh)
- Transmission Loss Multiplier
- TLM Adjusted Volume (MWh)
- TLM Adjusted Cost (£)

The calculation of the derived values for P217 effective dates are found in Section T and Annex T-1 of the BSC.

For Settlement Dates on or after the TERRE Final Implementation Date, the BMRA shall calculate:

- Indicative Period RR Total Accepted Bid Volume (IRRAB_{nij});

- Indicative Period RR Total Accepted Offer Volume (IRRAOnij);
- Indicative Period RR Accepted Bid Volume (IRRABknij);
- Indicative Period RR Accepted Offer Volume (IRRAOknij)
- the Indicative Quarter Hour RR Cashflow (ICCRij), and
- the Indicative Period RR BM Unit Cashflow (ICRRij)

in accordance with the rules in Section T

10.2 Estimation of data in calculation of Energy Imbalance Prices

The calculation of the Energy Imbalance Price has to ensure that the derived price more closely reflects energy balancing costs only and to reflect the fact that the price should be adjusted for losses. The calculation is the same as that carried out by the SAA, except certain estimated data must be used.

For each BM Unit, other than Interconnector BM Units, the estimated Transmission Loss Multiplier, $ETLM_{ij}$, is derived, using data received from BSCCo and the CRA:-

For a production BM Unit,

$$ETLM_{ij} = 1 + TLF_{ij} + ETLMO^+_{ij};$$

For a consumption BM Unit,

$$ETLM_{ij} = 1 + TLF_{ij} + ETLMO^-_{ij}$$

where TLF_{ij} is the Transmission Loss Factor assigned by the CRA for that BM Unit, and $ETLMO^+_{ij}$ and $ETLMO^-_{ij}$ the Estimated Delivering and Offtaking Transmission Losses Adjustment Multipliers supplied by BSCCo.

In respect of each Settlement Period, for each Interconnector BM Unit, the Estimated Transmission Loss Multiplier, $ETLM_{ij}$, shall be set as follows:

$$ETLM_{ij} = 1$$

irrespective of whether the Interconnector BM Unit is a production or consumption BM Unit.

The Estimated Energy Imbalance Prices are then calculated following the procedures set out in the BSC Section T and Annex T-1, except that for the purposes of the BMRA, the estimated value $ETLM_{ij}$ is used in place of TLM_{ij} .

11 TIMEKEEPING

The BMRA will be required to ensure its systems are set in accordance with the Universal Time Clock (UTC), adjusting the time as necessary, at least once every 24 hours.

12 PERFORMANCE REPORTING

- 12.1 BMRA Performance Reports shall be issued monthly to BSCCo.
- 12.2 The BMRA Performance Report shall include the performance details of each Market Index Data Provider described in 8A.4.
- 12.3 Information required for charging BSC Parties under Section D of the Code shall be sent to BSCCo on the 15th Working Day of each month.

13 PROVISION OF DATA TO ENTSO-E

- 13.1 The BMRA shall send data relating the Transparency Regulation to ENTSO-E as soon as it has been received from the NETSO or where relevant, as soon as practically possible after the completion of the appropriate BMRA Settlement Calculations.
- 13.2 The BMRA shall send this data in accordance with the file format and transfer mechanism specifications agreed with ENTSO-E.

Including all Approved Changes Awaiting Implementation

APPENDIX A INPUT AND OUTPUT FLOWS**Input Flows:**

Input Flow Description	Flow Received from
Balancing Mechanism Data	NETSO
System related information (as listed in T the BMRS Data Catalogue)	NETSO
TLF	CRA
Estimated TLMO	BSCCo
System Parameters	BSCCo
Balancing Services Adjustment Data (BSAD)	NETSO
BSC Party and BSC Party Agent Authentication details	CRA
BM Unit & Energy Account Registration Data	CRA
Market Index Data Provider Registration Data	CRA
Market Index Data Provider Threshold Data	BSCCo
Large Combustion Plant Directive Data	BSCCo
Market Index Data	Market Index Data Provider
Credit Default Notice Data	ECVAA
REMIT Data	BMRS User, NETSO
Transparency Regulation Data	NETSO
Trading Unit Data	SAA
RR Activation Data	NETSO
GB Need Met Data	NETSO
Terre Clearing Price	NETSO
Interconnector Schedule Data	NETSO

Output Flows:

Output Flow Description	Flow Sent to
BM Data GUI	BMRS User
System related information GUI	BMRS User
Balancing Services Adjustment Data GUI	BMRS User
Registration Data GUI	BMRS User
Credit Default Notices	BMRS User
BM Data Reports	BSC Parties
Data relating to Emergency Instructions (via 'System Warning' function)	BMRS User
Data Exception Reports	BSCCo, NETSO, CRA
Performance Reports	BSCCo
FPN Data	SAA
Dynamic Data	SAA
Bid-Offer Data	SAA
Bid-Offer Acceptance Data	SAA

BM Unit Applicable Balancing Services Volume	BMRS User
REMIT Data	BMRS User
Transparency Regulation Data	BMRS User, ENTSO-E
Trading Unit Data	BMRS User
GBP-EUR exchange rate	BMRS User, ENTSO-E, SAA

Including all Approved Changes Awaiting Implementation