Balancing Services Adjustment Data Methodology Statement

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Version Control

Date	Version No.	Notes
20.3.01	1.0	Initial version
10.4.01	1.1	Revision to include price adjusters for reserve option fees
24.9.01	1.2	Revision to incorporate implementation of P8 and P18 within the BSC. Effective in respect of Settlement Days from and including 25 September 2001
28.3.02	2.0	Revision to incorporate implementation of P48 within the BSC. Effective in respect of Settlement Days from and including 2 April 2002.
25.3.03	2.1	Revision to incorporate implementation of P74/P78 within the BSC. Effective in respect of Settlement Days from and including [Date to be coincident with P74/P78 Implementation]
24.10.03	3.0	Revision to amend the allocation of standing reserve option fees
28.11.03	3.1	Revision to incorporate changes associated with Maximum Generation Service.
01.01.05	3.2	Revisions to incorporate changes relating to BETTA

Date	Version No.	Notes
15.07.05	3.3	Revisions to incorporate changes as a result of CAP076: Treatment of System to Generating Intertripping Schemes
01.11.06	4.0	Revisions to incorporate changes as a result of BM Start-Up service
22.01.07	4.1	Revisions to update the Standing Reserve Weighting Factors and to clarify the treatment of Supplemental Standing Reserve in the BPA calculation
01.04.07	4.2	Revisions to incorporate Short Term Operating Reserve (STOR) and to publish STOR weighting factors on National Grid's industry information website
05.11.09	5.0	Revisions to incorporate changes as a result of P217A: Revised Tagging Process and Calculation of Cash Out, Cap144: Emergency Instruction to emergency de-energise, and to incorporate Commercial Intertrip volumes
01.04.11	6.0	Revision following annual review
01.04.13	7.0	Revision following annual review
01.01.14	8.0	Revision to incorporate Demand Side Balancing Reserve and Supplemental Balancing Reserve
01.04.14	9.0	Revision following annual review

Date	**Version No.**	**Notes**
01.04.15	**10.0**	**Revision to provide clarification on process to include BM Start-Up in the BPA as part of annual review**
05.11.15	**11.0**	**Revisions: to allow Non-BM STOR actions to feed into the cash-out calculation; to remove STOR option fees from the BPA calculation; and to allow SBR and DSBR actions to feed into the cash-out calculation.**
05.11.15	**12.0**	**Revision to incorporate treatment of scenario where SBR units have a SEL equal to their MEL**
01.04.16	**13.0**	**Revision following annual review**
01.04.17	**14.0**	**Revision to remove Demand Side Balancing Reserve**
1.04.18	**15.0**	**Revision following annual review**
01.04.19	**16.0**	**Revision following annual review**
01.04.20	**17.0**	**Revision following annual review**
01.04.21	**18.0**	**Revision following annual review**
30.04.21	**19.0**	**Revision to update the BSAD Methodology Statement to include the Optional Downward Flexibility Management ("ODFM") product into calculation of cashout**
01.04.22	**20.0**	**Revision following annual review**

Date	**Version No.**	**Notes**
24.10.22	**21.0**	**Revision following additional review to update the BSAD Methodology Statement for the 2022/23 Winter Contingency Services.**
04.11.22	**22.0**	**Revision following additional review to update the BSAD Methodology Statement for the Demand Flexibility Service.**
01.04.23	**23.0**	**Revision following annual review**
01.04.24	**24**	**Revision following annual review**
01.04.25	**25**	**Revision following additional review**
23:00 02.09.25	**26**	**Revision to reflect updates to response and reserve services and to update contact email addresses following NESO IT changes.**
01.04.26	**27**	**Revision following annual review**

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1. Introduction

1.1 Foreword

This Statement has been developed by the National Energy System Operator (NESO) in consultation with industry and approved by the Authority in accordance with our Electricity System Operator (ESO) Licence. The Statement may only be modified in accordance with the processes set out in Standard Condition C9 of the NESO's ESO Licence.

Where we buy, sell or acquire any relevant balancing services of a kind or under a mechanism which is not covered by this Statement then we shall promptly seek to establish a revised Statement covering such balancing services and/or mechanisms in accordance with the relevant provisions of Standard Condition C9 of the NESO ESO Licence.

The Statement makes reference to a number of definitions contained in the Grid Code (GC), Balancing and Settlement Code (BSC) and Connection and Use of System (CUSC). In the event that any of the relevant provisions in the GC, BSC and/or CUSC are amended it may become necessary for us to modify the Statement in order that it remains consistent with the GC, CUSC or BSC.

In any event, where our statutory obligations and the provisions of the GC, CUSC and BSC are considered inconsistent with any part of this Statement, the relevant statutory obligation of GC, CUSC and BSC provision will take precedence.

Unless defined in this Statement, terms used herein shall have the same meanings given to them in the NESO ESO Licence, the GC, the CUSC and/or the BSC as the case may be.

The latest version of this document together with the previous versions of this document are available electronically from the NESO Website:

C9 statements and consultations | National Energy System Operator

Alternatively, a copy may be requested from:

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1.2 Purpose of Document

This document sets out the Balancing Services Adjustment Data (BSAD) methodology which NESO is required to establish in accordance with Standard Condition C9 of NESO ESO Licence. The purpose of this Statement is to determine and provide the costs and volumes of the relevant balancing services which are to be taken into account under the BSC for the purposes of determining Imbalance Price(s).

2. Balancing Services Adjustment Data (BSAD) Overview

2.1 BSAD variables

BSAD is used as part of the electricity imbalance price calculation specified in section T, paragraphs 4.4 of the BSC.

Section Q Paragraph 6.3.2 of the BSC specifies BSAD for each settlement period as:

(a) the unique sequential number for each Balancing Services Adjustment Actions;

(b) for each such Balancing Services Adjustment Action;

i. the Balancing Services Adjustment Volume;

ii. the Balancing Service Adjustment Cost;

iii. Whether the NETSO has classified such Balancing Services Adjustment Action as “SO Flagged”;

iv. Whether the NETSO has classified such Balancing Services Adjustment Actions as “STOR Flagged”;

v. the BSAD Party ID of the person providing the procured Balancing Services Adjustment Action;

vi. the BSAD Asset ID (if applicable);

vii. whether the Balancing Service was procured by the NETSO through a tender; and

viii. the type of Balancing Service procured;

(c) Buy Price Price Adjustment; and

(d) Sell Price Price Adjustment.

Please note: Above NETSO entries refer to NESO.

2.2 Balancing services included within Balancing Service Adjustment Actions (BSAA)

Balancing services are defined in the Procurement Guidelines which NESO is required to establish in accordance with Standard Condition C9 of the NESO Licence.

The following balancing service actions will be provided through BSAD as a Balancing Service Adjustment Action (BSAA):

- Non-BM Short Term Operating Reserve (STOR)
- Non-BM Fast Reserve
- Non-BM Quick Reserve
- Non-BM Slow Reserve
- MW Dispatch (MWD)
- Local Constraint Market (LCM)
- Electricity trades
- Interconnector trades (e.g. Constraints, Balancing, HFLF, Emergency Assistance, Emergency Instruction etc)
- System To Generator Operational/Commercial Intertrip (see note 1)
- Maximum Generation (see note 2)
- Emergency Deenergisation Instructions (see note 3)
- Demand Flexibility service (DFS) (see note 4)

Expected energy volume is the energy a service provider is expected to deliver based on the applicable service terms.

Note 1: For System-to-Generator Operational/Commercial Intertrip service the volume for inclusion in BSAD will be calculated as the expected energy volume and will be equal to the reduction in output calculated from the time of the intertrip firing until the end of the BM Window Period. However, this service is not paid on a £/MWh basis and therefore the volume will be unpriced.

Note 2: NESO will estimate volume and associated cost of the Maximum Generation service and will include this estimate in a re-submission of BSAD to the Settlement Administration Agent (SAA).

Note 3: The volume for inclusion of Emergency Deenergisation Instructions in BSAD will be calculated as the expected energy volumes up to the end of the BM Window Period. However, as payment for such actions are administered through the CUSC and are consequently not open to the 'pay as bid' approach of the BM, such actions will be treated as unpriced.

Note 4: Accepted DFS volumes and prices for the real DFS events will be assessed under the System Management Action Flagging (SMAF) methodology to determine whether they are energy or system flagged. The volume that is anticipated to be delivered under DFS test runs will be system flagged.

For each balancing service provided as a BSAA, the expected energy volume will be included along with the cost in £, unless the BSAA is unpriced as mentioned in the notes (1-3) above.

In addition, each BSAA will also be accompanied by an identifier indicating whether the balancing service was used for system or energy management reasons. The SMAF methodology statement describes the process NESO will use to identify whether BSAA were used for system or energy management reasons.

2.3 Price Adjusters

Price Adjusters are the part of BSAD to reflect option feeds for balancing services contracts. Specifically, fees paid to facilitate additional MW capacity will be represented through the Buy Price Adjuster (BPA) and fees paid to facilitate the withdrawal of MW capacity through the Sell Price Adjuster (SPA). Only one is used for each settlement period.

2.3.1 Buy Price Adjuster (BPA)

The formula below illustrates how the costs associated with such option fees are converted into a £/MWh figure.

$$\underline{\boldsymbol{BPA_j = \Sigma(BC\ /\ cB)}}$$

The j notation indicates the variable is directly related to the settlement period.

BC = cost of BM Start-Up instructions to minute t (£)

cB = volume capability of BM Start-Up instructions over the defined BPA period to minute t (MWh)

For the avoidance of doubt, if the denominator of BPA is zero in any settlement period, then BPA will be set to zero in that period.

2.3.2 Balancing services included within the BPA

The BPA may include but is not limited to BM Start Up service.

The costs incurred in creating additional reserve availability will feed into the calculation of BPA and will be allocated into the periods where the requirement exists (based on periodically reviewed windows).

As NESO's reserve requirements vary with lead-time, the accrual of costs will need to take account of the amount of reserve that these costs are being incurred to meet, at the relevant lead-time.

For the avoidance of doubt, the costs will not feed into the BPA calculation in circumstances where NESO uses BM Start-Up services for system management reasons (as defined within the SMAF Methodology Statement).

2.3.3 Worked Example – BPA

This example shows how options fees paid by NESO for balancing services are reflected within BPA.

Details of the warming dispatch (for each unit) will be found in the Sonar report.

BM Start-Up BPA calculation:

BM Start-Up price = £2000 / hr

Period unit is warmed = 8hrs (see note 1)

BC = £2000 * 8hrs

BC = £16000

Generator capacity = 250MW

Requirement period = 4hrs (see note 2)

cB = 250MW * 4hrs

cB = 1000MWh

$$BPA_j = \Sigma(\mathrm{BC} \,/\, \mathrm{cB})$$

$$BPA_j = \sum \frac{£16000}{1000\mathrm{MWh}}$$

$$BPA_j = £16/MWh$$

Note 5: From the Warming Start and End instructions, derive how many minutes within those SPs, the warming is active:

Warming Start Time = HTSS+Ts-NDZ

Warming End Time = HTSS

Where, HTSS = Earliest synch time (SONAR report) – Ts (contracted - notice to synch time while on Hot Stand By); and Notice to Deviate from Zero (NDZ) being the notification time required for a BM Unit to start importing/exporting energy, from a zero Physical Notification.

Note 6: The cost is then allocated to each settlement period within the requirement window in which the system is short. The requirement window

(period) is defined by BPA Start Period and BPA End Period values found in SONAR report.

2.3.4 Sell Price Adjuster (SPA)

The formula below illustrates how the costs associated with such option fees are converted into a £/MWh figure.

$$SPA_j = \frac{(\sum NC_j + \sum FC_j)}{(cN_j + cF_j)]}$$

NC_j = cost of negative reserve option fees (£)

FC_j = cost of purchases of Forward Contract option fees (£)

cN_j = capability of negative reserve (MWh)

cF_j = capability of Forward contracts (MWh)

For the avoidance of doubt, if the denominator of SPA is zero in any settlement period, then SPA will be set to zero in that settlement period.

Please note: Currently, there are no balancing services that feed into SPA calculation.

3. Balancing Services Adjustment Data (BSAD) Submission

3.1 BSAD Provision

BSAD will be submitted in accordance with section Q, Paragraph 6.3 of the Balancing and Settlement Code. This entails the preliminary submission of BSAD to Elexon at or before 5pm each day to cover the 24 hour period from half-hour ending 00:30 to half-hour ending 24:00 for the following day.

BSAD amendments for previous preliminary submission will be included in the half-hourly submissions (as soon as possible after Gate Closure) and the (potential) updates of the half-hourly submissions will be included in the next day final submissions.

BSAD will be submitted to Elexon to be published on the Adjustment actions (DISBSAD) | Insights Solution and Adjustment data (NETBSAD) | Insights Solution.

In the event that for a settlement day, BSAD data for a settlement period is not available, the previous submitted data for that settlement period will prevail. For example, in the event that the half hourly data for a settlement period is not available, then the day ahead submission will prevail.

BSAD will also be published on the NESO Data Portal on Data search | National Energy System Operator , and NESO Extranet on BSAD.

3.2 Re-submission of BSAD

After the (next day) final data submission, any required updates of BSAD data for a settlement day will be reflected in the resubmission(s) of BSAD at any time prior to the Final Reconciliation Settlement Run for such settlement day, as described in BSC, Section Q, 6.3.3.

The costs and volumes of those services outlined in the notes 1 to 4, specifically, DFS, Maximum Generation service, Emergency Deenergisation Instructions, System-to-Generator Operational/Commercial Intertrips are only included in post event re-submission(s) of BSAD, as soon as relevant data is available.

If re-submission of BSAD is required, NESO will endeavour to do this as soon as reasonably practicable, to allow the revised variables to be included in the calculation of System Buy Price (SBP) and System Sell Price (SSP).

Any queries related to the calculation and submission of BSAD should be addressed to settlement.queries@neso.energy.