BSC N	Iodification Proposal Form	At what stage is this document in the process?		
bene	d Title: Assessing the costs and efits of adjusting Parties' Imbalances wing a demand disconnection	01 Modification 02 Workgroup Report 03 Draft Modification Report 04 Final Modification Report		
Purpose of Modification: This proposal seeks to introduce a mechanism wherein the BSC Panel is able halt the Imbalance adjustment process following a demand disconnection where the expected costs are seen to be greater than the perceived benefits.				
	 The Proposer recommends that this Modification should: be raised by the Panel in accordance with the provisions of F2.1.1(d)(i); be treated as a Self-Governance Modification Proposal; and be sent directly into the Report Phase. 	ł		
0	December 2019. The Panel will consider the Proposer's recomme determine how best to progress the Modification. High Impact: None	endation and		
0	Medium Impact: BSCCo			
0	Low Impact: LDSOs; HHDCs; HHDAs; NHHDCs; NHHDAs; Trading Parties; B NETSO	SC Agents; and		

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Timetable		
The Proposer recommends the following time	Lawrence.jones@elex on.co.uk	
Raise Modification Proposal	12 December 2019	
Initial Written Assessment	12 December 2019	
Report Phase Consultation (15 WDs	20 December 2019 – 14 Janua 2020	ry 020 7380 4118
Draft Modification Report presented to Panel	13 February 2020	
Final Modification Report published	17 February 2020	

1 Summary

What is the issue?

The BSC Panel (the Panel) is concerned that the benefits of operating Demand Control Event (DCE) processes introduced by P305 'Electricity Balancing Code Significant Code Review Developments' may not always outweigh the costs. In particular, that balance of costs and benefits associated with certain demand disconnection Demand Control Events (DCEs) may not always warrant Licensed Distribution System Operators (LDSOs), National Electricity Transmission System Operator (NETSO), certain Party Agents and BSC Agents, and BSCCo working together to estimate Parties' BM Unit Allocated Demand Disconnection Volumes (BMUADDV) and Period BM Unit Demand Disconnection Volumes (QDD) – i.e. volumes of electricity that might have otherwise been Imported or Exported if there hadn't been a DCE. Parties' Imbalance Volumes are determined by including BMUADDV and QDD as though a DCE was a Balancing Service provided by the Party.

The Panel is aware that BSCCo plans to raise an Issue to consider its concerns once it has received preliminary lessons from estimating BMUADDV and QDD following the <u>DCE on 9 August 2019</u>. However, the Panel believes that more urgent action is necessary in case there are further DCEs, in particular over the forthcoming winter and spring seasons, which may incur more costs than benefits for consumers.

What is the proposed solution?

This Modification Proposal would introduce a mechanism for determining whether LDSOs, NETSO, certain Party Agents and BSC Agents, and BSCCo should carry out the processes necessary to calculate BMUADDV and QDD following a demand disconnection DCE.

In particular, the BSC would include new provisions that require BSCCo to assess the costs and benefits of calculating BMUADDV and QDD following any future DCE, in accordance with rules established and governed by the BSC Panel. If BSCCo's assessment determines that the costs outweigh the benefits, then BSCCo will notify BSC Parties, Party Agents and BSC Agents to notify them that they should not execute processes necessary to calculate BMUADDV and QDD.

This Modification Proposal is intended to provide a straightforward and timely solution and is not intended to replace BSCCo's plan to raise an Issue, that will, amongst other things, evaluate whether any further changes are needed to the DCE processes. Indeed the Panel noted that an Issue Group would likely be able to complete a more thorough investigation (particularly learning from the outcomes of running the processes for the DCE on 9 August 2019) and bring forward an enduring solution.

2 Governance

Justification for proposed progression

We propose that this Modification be sent directly to the Report Phase and hence be subject to the Report Phase Consultation as the necessary changes: are clearly set out in this Modification Proposal; are limited to documentation only; and propose new, or changes to, existing manual processes rather than systems. Furthermore, the Panel's desire is to implement a solution sooner than later. However, this does mean that any substantive changes to the solution will not be possible following the Report Phase Consultation unless the Panel subsequently decide to send the Modification to the Assessment Phase.

Requested Next Steps

We request that this Modification be progressed as a Self-Governance Modification (no Ofgem approval sought) as it is not likely to have an impact on the Self-Governance criteria.

In particular, this Modification aims to improve efficiency in the implementation of the Balancing and Settlement arrangements by avoiding the operation of processes where the costs outweigh the benefits. It is unlikely to have a material effect on consumers, competition, system operation, safety, security, management of emergencies or code governance; nor will it discriminate between different classes of Party.

At this time we do not believe this proposal, if sent directly to the Report Phase, should be treated as Urgent as it does not, in our view, meet <u>Ofgem's Code Modification Urgency Criteria</u>.

3 Why Change?

What is the issue?

A Demand Control Event (DCE) occurred on 9 August 2019. This was the first DCE since P305 went live on 5 November 2015. Following the event ELEXON published <u>Circular EL03026</u>.

Following a DCE that results in demand disconnection, the BSC requires that LDSOs, NETSO, certain Party Agents and BSC Agents, and BSCCo work together to estimate the electricity that would have been Imported or Exported by disconnected customers – i.e. BM Unit Allocated Demand Disconnection Volume (BMUADDV) and Period BM Unit Demand Disconnection Volume (QDD). These processes are also known as the 'bottom up' processes.

The 'bottom up' processes were designed to ensure the accurate calculation of Parties' imbalance volumes so Suppliers did not benefit or suffer from the effects of a DCE that is out of their control. That is, a DCE is often an urgent emergency action(s) taken by NETSO when there are no other economic 'market' based actions available. Consequently it may cause Parties' Imbalance Volumes to be longer than they might have been if there hadn't been a DCE and the affected Parties often have no control over the situation. A longer Imbalance position multiplied by a System Price that may be unusually high, e.g. close to or equal to the Value of Lost Load (£6000/MWh) could result in a considerable payment to Parties or considerable reduction in their Imbalance Charge had there not been a DCE.

However, the indicative costs to operate the 'bottom-up' processes for the DCE on 9 August appear to be greater than the impact on BSC Parties' Imbalance Charges. In summary, the expected adjustment to

Parties' Imbalances is expected, in absolute terms, to be ~£46,345.74¹ compared to an expected cost of approximately £52,643.22² to carry out the necessary P305 processes. The low value of this event is because the DCE was the result of an Auto Low Frequency Demand Disconnection event, which is automatically System Operator (SO)-Flagged when included in the calculation of the System Price. Ordinarily a Demand Control action is priced equal to the Value of Lost Load (£6000/MWh), however, where any balancing action is SO-Flagged it is initially unpriced and may be re-priced equal to the most expensive unflagged balancing action (i.e. the Replacement Price). Consequently, the impact on System Prices by the DCE on 9 August 2019 was very small; there was no impact on the System Price in Settlement Period 34, £64.50/MWh, and the System Price in Settlement Periods 35 and 36 were each increased by only £0.25 to £65/MWh.

The BSC Panel expressed concern that the costs of carrying out 'bottom-up' processes for estimating disconnection volumes may not be appropriate in all DCE circumstances (i.e. for demand disconnection, voltage reduction and for automatic low frequency demand disconnection; whether or not a Demand Control Event is SO-flagged). At its November 2019 meeting, Panel Members challenged ELEXON to bring forward a solution that stop the operation of the bottom-up processes where the value of doing so did not outweigh the costs.

The Panel is aware that BSCCo plans to raise an Issue to consider its concerns once it has received preliminary lessons from estimating BMUADDV and QDD following the DCE on 9 August 2019. However, the Panel believes that more urgent action is necessary in case there are further DCEs, in particular over the forthcoming winter and spring seasons, which may incur more costs than benefits for consumers.

4 Code Specific Matters

Technical Skillsets

We propose that this Modification Proposal progresses straight to Report phase and so will not require consideration by a workgroup.

Nevertheless, the following expertise and knowledge is relevant when considering the issue and proposed solution set out in this proposal:

- Demand Control processes in particular the bottom-up processes carried out by:
 - o LDSOs;
 - Party Agents; and
 - o NETSO.

Reference Documents

Electricity Balancing Significant Code Review (EBSCR) Final Policy Decision

P305 - Final Modification Report

¹ This is the sum of each affected Settlement Periods' System Price multiplied by the Demand Disconnection Volume. A more detailed explanation is set out in the Solution section below.

² Based on discussions with Parties and Party Agents, this is an extrapolation of the costs for estimating demand disconnection volumes for the DCE on 9 August. A more detailed explanation is set out in the Solution section below.

5 Solution

Proposed Solution

This Modification Proposal would introduce provisions that require BSCCo to determine whether LDSOs, NETSO, certain Party Agents and BSC Agents, and BSCCo should carry out the processes necessary to calculate BMUADDV and QDD following a Demand Control Event comprising some element of Demand Disconnection.

This Modification Proposal is intended to provide a straightforward and timely solution and is not intended to replace BSCCo's plan to raise an Issue. Indeed the Panel noted that an Issue Group would likely be able to complete a more thorough investigation (particularly learning from the outcomes of running the processes for the DCE on 9 August 2019) and bring forward an enduring solution.

In particular, this Modification Proposal will introduce the following new provisions:

- 1. Business rules the BSC will require the BSC Panel to establish, publish on the BSC Website and govern business rules that include
 - a. The circumstances in which BSCCo should asses the costs and benefits of a DCE;
 - b. A method for assessing the costs and benefits of a DCE including any specific calculations or parameters that BSCCo should follow or use in its assessment; and
 - c. Other criteria, timescales, parameters or calculations necessary to assess the DCE.

These business rules will be contained in a new Category 3 Configurable Item. This is due to the document only directly impacting BSCCo and the Panel and allows a review of the parameters from time to time outside of the formal Change Proposal and/or Modification processes. The process for reviewing the Business Rules are contained within the document itself (as is the case for all Category 3 documents). This method allows impacted market participants that aren't necessarily BSC Parties (i.e. BSC Agents) to request a review of the Business Rules, subject to industry consultation and Panel approval.

The Panel (or any delegated authority) should ensure these business rules are reviewed from time to time as it sees appropriate. Any review must include consultation of BSC Parties and interested persons. Any changes to the rules must be approved by the Panel (or its delegated authority) – except where changes proposed by a Modification or Change Proposal will follow the rules set out in BSC Section F and BSCP40.

A proposed initial copy of these business rules can be found in Attachment C.

- Within one Working Day of receipt of the necessary DCE data from NETSO following the event, BSCCo carries out an assessment of the DCE in accordance with the Panel's rules to determine if Parties, Party Agents and Central Agents should carry out processes necessary to calculate BMUADDV and QDD.
 - a. A consequence of this proposal is that existing timescales for performing the Settlement Adjustment Processes will be changed so they are tied to the outcome of this new process.
- 3. Following the outcome of an assessment in accordance with the Panel's rules, BSCCo will:

- a. Notify all BSC Parties, Party Agents, BSC Agents and Panel Members of the outcome and identify whether or not the 'bottom up' processes should be followed for the DCE in question
- b. Publish an ELEXON Circular containing details of its conclusion on the BSC Website
- c. Present a paper to the Panel (at it summarising its assessment and explaining the notice it made to Parties and Party Agents.
- 4. That BSC Parties and Party Agents should always carry out processes to calculate BMUADDV and QDD unless explicitly notified that they should not, following an assessment in accordance with the BSC Panel's rules.

Method for assessing the costs and benefits of a DCE

The BSC Panel's business rules should initially adopt the following method for assessing the costs and benefits of a DCE.

To determine if the 'bottom up' processes should be followed, BSCCo must assess each DCE and the following criteria must be satisfied:

- 1. The DCE comprises at least one Demand Control Instruction identifying that either demand disconnection or auto low frequency Demand Disconnection was instructed; and
- 2. The cost of the DCE is greater than or equal to the benefit of the DCE.

Whatever the outcome of BSCCo's assessment, it will notify BSC Parties and Party Agents and identify whether or not they should carry out the 'bottom up' processes in respect of the DCE. BSCCo will also notify BSC Panel Members of its assessment findings and publish these details in an ELEXON Circular and on the BSC Website.

The following subsections identify how the cost and value of a DCE should initially be determined by BSCCo when assessing a DCE – that is until the Panel's business rules are changed.

Cost of DCE

The cost of a DCE represents the cost to LDSOs, HHDCs, HHDAs, NHHDCs, NHHDAs, NETSO, BSC_Agents and BSCCo of operating the 'bottom up' processes. As part of the initial implementation of this Modification the DCE_Cost will be a parameter with a predetermined value set using the following method. Following implementation of this Modification the BSC Panel may agree to change how its business rules determine the cost of a DCE. For the avoidance of doubt, the DCE Cost parameter will not be reviewed as part of the assessment of every DCE. It will be set upon implementation of this Modification and will remain fixed until such a time as it is reviewed by the Panel (per the review process outlined in the Business Rules).

DCE_Cost will be set by collecting actual or estimated costs from Parties and Party Agents involved in the bottom-up process, i.e. LDSOs, HHDCs, HHDAs, NHHDCs, NHHDAs, NETSO, BSC_Agents and BSCCo. These costs are used to derive an indicative cost (£/MWh):

 $DCE_Cost = \frac{HHA_Cost + LDSO_Cost + NHHA_Cost_{Cost} + NETSO_Cost + BSC_Agent_Cost + BSCCO_Cost}{DDE_Size'_{total}}$

Where:

HHA_Cost (\pounds) – the expected cost for HHDCs and HHDAs to carry out 'bottom-up' processes for a historical or indicative DCE.

 $\mbox{LDSO_Cost}$ (£) – the expected costs for LDSOs to carry out 'bottom-up' processes for a historical or indicative DCE.

NHHA_Cost (\pounds) – the expected costs for NHHDCs and NHHDAs to carry out 'bottom-up' processes for a historical or indicative DCE.

NETSO_Cost (\pounds) - the expected costs for NETSO to carry out 'bottom-up' processes for a historical or indicative DCE.

BSC_Agent_Cost (\pounds) – the expected costs for BSC Agents to carry out 'bottom-up' processes for a historical or indicative DCE.

 $\textbf{BSCCo_Cost}\ (\pounds)$ – the expected costs for BSCCo to carry out 'bottom-up' processes for a historical or indicative DCE.

DDE_Size'_{total} (MWh) – the total volume of electricity anticipated to be disconnected as a consequence of demand disconnection or auto low frequency demand disconnection derived from a historical or indicative DCE.

When determining DCE_Cost, all indicative stakeholder cost data must be collected based on the same assumptions, e.g. the same historical or indicative DCE, which in turn determines the DDE_Size'_{total} for this calculation.

For the purposes of setting the initial value of DCE_Cost, we propose using details from the DCE on 9 August 2019. This is because DC00201 is the only DCE which we have evidence of since the implementation of P305. This DCE comprised a single DCI for auto low frequency demand disconnection. Based on NETSO's DCI the DDE_Size'_{total} is 7,14MWh.

Unfortunately because the 'bottom up' processes for DC00201 have not yet been completed, we only have indicative costs from some stakeholders. As such, these costs are not necessarily a full reflection of all affected stakeholders' actual or likely costs.

HHA_Cost - a Supplier explained to us that the likely cost of processing 1,000 HH MSIDs is four FTE days. The 9 August 2019 DCE affected ~4,000 HH MSIDs. Therefore the indicative cost to HH Party Agents is expected to be ~16 FTE days. Assuming an FTE rate of £1,200 per day, the indicative HHA_Cost is £19,200.

NHHA_Cost - On 21 November 2019, NHH Party Agent representatives suggested that the likely cost of operation for the 9 August DCE would be £1,000 per day per NHHDC for one day's effort affecting 20 NHHDCs. The indicative NHHA_Cost is £20,000.

LDSO_Cost – two LDSOs' (representing seven Distribution Services Areas) provided indicative total costs. We derived a weighted average cost per DSA of £960.29 and a total indicative LDSO_Cost of £13,444.06.

NETSO_Cost – NETSO confirmed they did not request non-BM STOR services during DC00201. Therefore there would have been no costs incurred in identifying the related MSIDs and reporting these to BSCCo.

BSC_Agent and BSCCo costs – BSCCo's costs are two FTE over two working days per DCE, which is ~£1000. BSC Agent processes tend to be automated, e.g. SVAA and SAA systems are built to process data upon receipt rather than rely on manual intervention. Therefore we have not identified any particular BSC Agent costs for operating the Settlement Adjustment Processes.

The sum of indicative HHA_Cost,NHHA_Cost and LDSO_Cost divided by the DDE_Size'_{total}, 714MWh, for the 9 August DCE derives a DCE_Cost of £73.73/MWh.

Upon implementation of this Modification DCE_Cost will be set equal to £73.73/MWh.

Value of DCE

Whilst the method for determining the value of a DCE will be prescribed in the Panel's business rules, the actual DCE_Value will be based on details about the DCE being assessed, i.e. on a case by case basis. As part of the initial implementation of this Modification the DCE_Value will be determined using the following formula. Following implementation of this Modification the BSC Panel may agree to change how its business rules determine the value of a DCE.

 $DCE_Value = \frac{\sum_{j} (SP_{j} \times DDE_Size_{j})}{DDE_Size_{total}}$

Where:

 \mathbf{SP}_{j} – is the System Price for a Settlement Period affected by demand disconnection or auto low frequency demand disconnection during the DCE

 DDE_Size_j (MWh) – is the anticipated energy disconnected during a Settlement Period due to demand disconnection and derived from a DCI(s) sent by the NETSO to BSCCo for the DCE being assessed

 DDE_Size_{total} (MWh) – is the total anticipated energy disconnected due to demand disconnection and derived from the DCI(s) sent by the NETSO to BSCCo for the DCE being assessed.

The calculation of DCE_Value uses the actual System Price(s) from affected Settlement Period(s). This is because whether or not the DCE affects the calculation of the System Price, the DCE will affect Parties' Imbalance Volumes and those Parties may benefit or disbenefit by the amount of energy disconnected multiplied by the System Price irrespective of any DCE effect.

DC00201 affected three Settlement Periods. The corresponding System Prices and disconnected volumes (DDE_Size_j) are set out in Table 1 below. The total disconnected volume (DDE_Size_{total}) was 714MWh.

Settlement Period	System Price	DDE_Size _j
34	£64.50/MWh	93.1 MWh
35	£65/MWh	465.5 MWh
36	£65/MWh	155.166 MWh

The DCE_Value for DC00201 is £64.91/MWh.

In the case of DC00201, the consequence of following the method described above would have resulted in the conclusion that the 'bottom up' processes should **not** be followed to estimate BMUADDV and QDD. This is because:

- 1. DC00201 comprised a single DCI for auto low frequency demand disconnection; and
- 2. The DCE_Cost, £73.73/MWh, is greater than the DCE_Value, £64.91/MWh.

6 Impacts & Other Considerations

Party and Party Agent impacts

This Modification will impact on:

- LDSOs;
- HHDCs;
- HHDAs;
- NHHDCs;
- NHHDAs;
- NETSO;
- BSC Agents;
- BSCCo; and
- Trading Parties.

BSCCo is impacted most directly by this Modification Proposal. That is, BSCCo will need to establish new processes for assessing DCEs in accordance with the Panel's business rules. We expect that these will be manual processes.

We don't expect LDSOs, HHDCs, HHDAs, NHHDCs, NHHDAs, NETSO and BSC Agents to be significantly affected by the implementation of this Modification Proposal. That is, based on our experience of running the bottom up processes to date, we expect that this Modification Proposal will not require Party Agents or BSC Agents to make significant or possibly any changes to systems or processes. This is because so long as Party Agents do not receive a list of disconnected MSIDs, their systems and processes will not begin to estimate and report disconnection volumes.

Similarly we do not expect LDSOs or NETSO to be significantly impacted by the implementation and operation of this proposal. That is, our understanding is that the process for determining disconnected MSIDs is a manual one. Therefore, the only change LDSOs and NETSO would need to make is to ensure that they wait for notification from BSCCo before starting the process.

Trading Parties are not currently required to perform any part of the bottom up processes nor would they be required to perform any part of the processes proposed by this Modification Proposal. However, it is Trading Parties' Imbalance Volumes that may be affected by the outcome of operating the proposed process, i.e. depending on the outcome of the assessment described in this proposal, Trading Parties' Imbalance Volumes may or may not include a value of BMUADDV or QDD following a DCE.

BSC Process impacts

This Modification proposal will introduce new requirements for the BSC Panel and BSCCo, which affect whether or not processes for calculating BMUADDV and QDD are carried out following a Demand Control Event. It does not affect the processes for calculating BMUADDV and QDD if they must be followed.

BSC Central Systems impacts

This Modification should have no impacts on BSC Agents' systems.

BSC Documentation impacts

This Modification will affect the following documents:

- BSC Section R
- BSC Section S
- BSCP03 'Data Estimation and Substitution for Central Volume Allocation'
- BSCP502 'Half Hourly Data Collection for SVA Metering Systems Registered in SMRS'
- BSCP503 'Half Hourly Data Aggregation for SVA Metering Systems Registered in SMRS'
- BSCP504 'Non Half Hourly Data Collection for SVA Metering Systems Registered in SMRS'
- BSCP505 'Non Half Hourly Data Aggregation for SVA Metering Systems Registered in SMRS'
- BSCP508 'Supplier Volume Allocation Agent'
- BSCP515 'Licensed Distribution'

This Modification will create a new Category 3 Configurable Item:

• Business Rules for assessing Demand Control Events

Does this Modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

This Modification does not impact an SCR or any other significant industry change projects.

Consumer Impacts

There are no direct impacts to consumers by this Modification Proposal.

If implemented this Modification Proposal should ensure the operation of the 'bottom up' process is only in situations where the costs are greater than the benefits. This should ultimately reduce costs for Parties and therefore the costs to Consumers.

Environmental Impacts

There are no environmental impacts.

7 Relevant Objectives

Impact of the Modification on the Relevant Objectives:	
Relevant Objective	Identified impact
a) The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence	Neutral
(b) The efficient, economic and co-ordinated operation of the National Electricity Transmission System	Neutral
(c) Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity	Neutral
(d) Promoting efficiency in the implementation of the balancing and settlement arrangements	Positive
(e) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency [for the Co-operation of Energy Regulators]	Neutral
(f) Implementing and administrating the arrangements for the operation of contracts for difference and arrangements that facilitate the operation of a capacity market pursuant to EMR legislation	Neutral
(g) Compliance with the Transmission Losses Principle	Neutral

Implementation of this Modification Proposal would positively impact Applicable BSC Objective (d) by avoiding the cost of operating processes where the expected benefits do not exceed the perceived benefits.

8 Implementation Approach

This Modification Proposal has been described in detail to enable it to be submitted straight into the Report phase. We believe this is essential to ensure the Modification Proposal can progress with expedience and be implemented as soon as possible

We do not expect this Modification Proposal to impact on Party, Party Agent or Central Agents systems. Therefore we propose that this Modification is implemented as soon as possible, i.e. as part of a standalone scheduled release.

9 Legal Text

Proposed Text

The proposed legal text to progress this solution can be found in the following attachments:

Proposed BSC Section R legal text - see Attachment A

Proposed BSC Section S legal text - see Attachment A

Proposed BSCP03 legal text – see Attachment B

Proposed BSCP502 legal text - see Attachment B

Proposed BSCP503 legal text - see Attachment B

Proposed BSCP504 legal text – see Attachment B

Proposed BSCP505 legal text – see Attachment B

Proposed BSCP515 legal text - see Attachment B

Proposed initial Business rules - see Attachment C

10 Recommendations

Proposer's Recommendation to the BSC Panel

The BSC Panel is invited to:

- Raise this Modification;
- Agree that this Modification be progressed as a Self-Governance Modification Proposal; and
- Agree that this Modification be sent directly into the Report Phase.