BSC Modification Proposal Form	At what stage is this document in the process?
# P376 ## Mod Title: Utilising a Baselining Methodology to set Physical Notifications for Settlement of Applicable Balancing Services	01 Modification 02 Workgroup Report 03 Draft Modification Report 04 Final Modification Report

Purpose of Modification:

To allow the Final Physical Notification, which feeds into the Settlement of Trading Charges, to be created via a Baselining Methodology. The new Physical Notification will be de-coupled from the Physical Notification used by National Electricity Transmission System Operator (NETSO) for dispatch. This change will allow Balancing Service Providers to be fully recompensed for their actual change from normal usage and the impact this change has on the system, thus enabling greater participation.

The Proposer recommends that this Modification should:

- not be a Self-Governance Modification Proposal
- be assessed by a Workgroup and submitted into the Assessment Procedure

This Modification will be presented to the BSC Panel on 13 December 2018. The Panel will consider the Proposer's recommendation and determine how best to progress the Modification.

High Impact:

- Virtual Lead Parties
- Half Hourly Data Aggregators
- ELEXON

Medium Impact:

- NETSO

Low Impact:

- N/A

Contents

Timetable

The Proposer recommends the following timetable:

Initial consideration by Workgroup	W/C 14 January 2019
Further consideration by Workgroup	W/C 11 February 2019
Further consideration by the Workgroup	W/C 11 March 2019
Further consideration by the Workgroup	W/C 13 May 2019
Assessment Procedure Consultation	3 June 2019 – 21 June 2019
Workgroup consideration of Consultation responses	W/C 1 July 2019
Workgroup Report presented to Panel	8 August 2019
Report Phase Consultation	12 August 2019 – 23 August 2019
Draft Modification Report presented to Panel	12 September 2019
Final Modification Report submitted to Authority	13 September 2019

Any questions?

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1 Summary

Background

ELEXON raised Issue 71 'Introduction of a baselining methodology as an alternative to Physical Notifications' on 15 June 2018. This Modification builds on the back of this Issue and formally raises a Modification Proposal relating to the same defect.

Modification Proposal P344 'Project TERRE implementation into GB market arrangements' seeks to align the Balancing and Settlement Code (BSC) with the European Balancing Project TERRE (Trans European Replacement Reserves Exchange) requirements. The solution developed by the P344 Workgroup allows customers (or independent aggregators acting on their behalf) to participate in TERRE (and the BM) independently of their electricity Supplier, by registering a 'Secondary BM Unit'.

The P344 solution is intended to facilitate participation in the BM and TERRE by a wider range of industry market participants, including customers and independent aggregators. However, in the P344 solution, the existing BM Settlement arrangements remain unchanged.

Balancing Service Providers that want to participate in the BM must indicate at what megawatt (MW) level they expect their BM Unit to be for any given Settlement Period. This is known in the Grid Code as a Physical Notification (PN). At Gate Closure, this MW level is finalised and sent to Settlement where it is termed the BM Unit's Final Physical Notification (FPN) and acts as a baseline for any future deviation instructions from National Grid.

What is the issue?

The requirement to provide a Physical Notification (ahead of Gate Closure) may be problematic for customers and independent aggregators where the asset they control (and whose flexibility they can forecast accurately) may share a network connection with other Demand or Generation whose output is outside of their control. Inaccurate PNs may lead to customers not being paid fully for delivery even if they have responded as requested, or being over-rewarded where they have not responded correctly.

This could create a barrier to entry to certain customer sites and hence the participation of Demand Response in Replacement Reserve (RR) and the BM may not be optimised.

Related Modification

A related Modification Proposal P375 'Settlement of Secondary BM Units using metering at the asset' aims to allow Operational Metering Data to be used for Settlement, such that the PN submitted will relate to that Operational Meter, allowing more accurate PNs to be submitted. However, there may be cases where, for example:

- It is not practicable to install Operational Metering at a location which separates the asset from other on-site Generation or Demand;
- The Balancing Service Provider does not have access to real-time metering data for the asset; or
- The installation of additional Operational Metering is cost prohibitive.

For these sites, another solution is required to improve the accuracy of PNs for Settlement. Therefore, although both Modifications address the same defect, neither solution on its own will fully solve the defect for all affected customers.

What is the proposed solution?

Non-Delivery Volumes are based on the difference between the Expected Metered Volume for a Settlement Period (adjusted for any Balancing Services e.g. Accepted Bids or Offers) and the Actual Metered Volume. The Expected Metered Volume is determined using the FPN submitted. The Baseline Methodology will adjust the Expected Metered Volume using an adjusted FPN and compare these to Actual Metered Volumes. This Modification will not alter Actual Metered Volumes.

This Modification will not change the BM Unit Metered Volumes. The BM Unit Metered Volumes will be used to create a delta which when used in conjunction with the PN will determine Non Delivery Volumes. The intent of this Modification is to change the calculation of the PN only.

The Settlement and calculation of Non-Delivery Volumes will utilise a baseline value (calculated from historic metered data, using a transparent, objective methodology), rather than the FPN submitted to National Grid Electricity System Operator (NGESO) by the Lead Party for purposes of dispatch. This would result in the FPNs for dispatch being decoupled from the baseline values used for Settlement so that the most suitable methods can be used for each purpose.

2 Governance

Justification for proposed progression not Self-Governance

The Proposer believes that the Modification is likely to have a material effect on competition (self-Governance criterion ii) by removing a barrier to entry for consumers to participate in the TERRE and the BM. It should therefore not be progressed as a Self-Governance Modification.

Requested Next Steps

This Modification should:

- be assessed by a Workgroup and submitted into the Assessment Procedure.

3 Why Change?

Requirements of P344 ‘Project TERRE’

The solution developed by the P344 Workgroup allows customers (or independent aggregators acting on their behalf) to participate in TERRE (and the BM) independent of their electricity Supplier, by registering a ‘Secondary BM Unit’. This solution allows Balancing-related activities to be separated out from Imbalance-related activities (where previously the BSC required a single Party to be responsible for both):

- Imbalance-related activities broadly correspond to the role of ‘Balance Responsible Party’ (BRP) as defined in the Electricity Balancing Guideline (EBGL). These activities remain the

responsibility of the customer's Supplier, even if the customer has contracted separately with an independent aggregator. BSC processes that relate to this role include:

  - Contract Notification;
  - responsibility for all Energy Imbalances relating to the customer (with the exception of those arising from non-delivery of a balancing action by the independent aggregator, from which the Supplier is protected through a process of Imbalance adjustment); and
  - accounting for Residual Cashflow Reallocation Cashflow (RCRC).

- Balancing-related activities broadly correspond to the role of 'Balancing Services Provider' (BSP) as defined in the EBGL. The P344 solution allows these activities to be undertaken by a 'Virtual Lead Party' (VLP), which may be the customer themselves or an independent aggregator acting on their behalf. BSC processes that relate to this role include:
  - the calculation of Bid and Offer volumes for each BM Unit;
  - the payment of the Bid and Offer volumes to BSC Parties; and
  - the recovery of the costs of balancing from the ESO.

What's the Issue?

The P344 solution facilitates participation in TERRE and the BM for end-users, either on their own or through an independent aggregator. Unlike traditional power stations, customer sites are often complex and contain assets capable of participating in Balancing activities (like RR and the BM) as well as other equipment that is inflexible or operates independently of the asset delivering the Balancing Service. Many industrial sites have large consumption requirements as well as generation and often these are operated entirely separately.

For example, a waste water treatment site may have significant pumping load that must run to schedule as well as a Combined Heat and Power (CHP) generator. The site may be able to modulate the CHP output in response to an instruction in the BM, but an unrelated step change in the pumping load could negate, or increase, the apparent change in CHP output at the settlement boundary. In the P344 solution the VLP would need to know the pumping change was going to happen and reflect that in the FPN, ahead of Gate Closure. This can be difficult as often the VLP only has access to the schedule for the asset providing balancing services. Also, the Settlement Boundary Meter is the responsibility of the Supplier, and therefore an independent VLP often does not have real-time access to the metering data at the boundary. If the VLP creates a PN which turns out to be inaccurate due to post-Gate Closure changes on the site, they could be liable for non-delivery charges on Balancing Services Volumes that were actually delivered, or conversely, avoid charges they should be due to pay for failures which were masked by the actions of independent loads.

The provision of PNs ahead of Gate Closure for Settlement purposes is therefore problematic for certain customers and independent aggregators, where the asset they control (and whose output they can forecast accurately) may share a network connection with other Demand or Generation whose output is outside of their control. Inaccurate PNs may lead to customers not being paid fully for delivery even if they had responded as requested. For certain sites it is not possible to install Operational Metering near to the asset or at a location which separates the asset from other onsite Generation or Demand. The Balancing Service Provider may not have access to real-time metering data for this asset, and/or the installation of additional Operational Metering may be cost prohibitive. For these sites another solution is required to achieve accurate Settlement.

4 Code Specific Matters

Technical Skillsets

- Balancing Services
- Knowledge of BSC Settlement calculations and in particular Imbalance Volumes
- Demand Side Response (DSR) services
- The P344 TERRE solution
- Baselining Methodologies

Reference Documents

No particular reference documents need to be considered.

5 Solution

Proposed Solution

Settlement

For Settlement purposes, for those BM Units for which the Lead Party has elected to use a baseline solution, BSC Central Systems could construct a baseline volume (from historic metered data) for each Settlement Period. This baseline volume could be used (instead of the FPN) to calculate the Period Expected Metered Volume (QMEij), and hence the Non-Delivery Volumes. The Workgroup will consider which Parties will able to use the developed solution.

Calculating baselines for Settlement after the event should increase the accuracy of the baseline values when compared to the values used for dispatch, as a different metering data set could be used (i.e. wait until Settlement Final (SF) data is available before Settlement). This solution recognises that the FPN for dispatch will be different from the FPN used for Settlement purposes and will therefore require changes to industry systems.

All sites within a BM Unit will be Settled in the same way: either using a Baseline value or using a PN submitted as under the current arrangements. There cannot be a mix within the same BM Unit.

This solution could potentially be used for Primary as well as Secondary BM Units.

Allowing VLPs to use a Baselining Methodology to set the PN used for Settlement would mean more customers with complex sites will be able to participate in TERRE and the BM. Increased competition within Balancing Services will lead to reduced costs of Balancing Services which ultimately benefits the end consumer.

Ofgem's recent minded to decision to collect Transmission and Demand Residuals through fixed charges may lead to increased numbers of flexible generation or demand sites being interested in offering Balancing Services.

Baselining Methodologies

There are numerous potential Baselining Methodologies for a Modification Workgroup to consider, each with its own merits. The Workgroup will determine the most appropriate Baselining Methodology for assessment purposes but the Baselining Methodology should reside in a subsidiary document so as to allow changes to be made outside the Modification process.

6 Impacts & Other Considerations

Impacts

Impacts on BSC Systems

This Modification is likely to Impact the CRA and CDCA Services procured by ELEXON. It is also likely that a new service for administering the Baselining Methodologies will need to be procured.

Impacts on NETSO

NETSO will be impacted as the Baselining Methodology not only removes a barrier to entry but also provides a means for verifying that delivery of a Balancing Service impacts the System. Increased numbers of participants and added assurance of delivery and impact on the system should lead to reduced Balancing Costs.

NETSO may want to consider changing their use of PNs, so as to more accurately reflect BSC Parties' actual knowledge of asset behaviour and capabilities, and potentially reduce operating costs. This Modification would be an enabling step for such a reform, which would have to be considered through a Grid Code modification process.

Other Central considerations

The Baselining Methodology need not be confined to the provision of PNs for the settlement of RR: it could ultimately be applied to other Balancing Services or to measure the provision of flexibility to DSOs.

Consideration needs to be made of access to the initial metering data: which parties have access to this data and whether customer permission is required and how this is gained.

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

The proposer does not believe that this Modification impacts any of the open SCRs. The Proposer requests that this Modification be exempt from the Significant Code Review process.

Consumer Impacts

The change would allow more customers to participate in the BM and TERRE through the VLP route, which could increase competition in these markets. There will therefore be benefits for consumers.

Environmental Impacts

Day to day operation of Balancing and Settlement will be unaffected, so there will be no direct impact on the environment.

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	**Positive**
(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	**Positive**
(d) Promoting efficiency in the implementation of the balancing and settlement arrangements	Neutral
(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]	**Positive**
(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

The change will have a positive impact on Applicable BSC Objective (b) as it removes a barrier to entry for independent aggregators and customers to the provision of RR which increases the options available to NETSO when balancing the System, thus leading to more efficient and economic balancing actions being procured. The NETSO have also discussed potentially using Secondary BM Units for other Balancing Services.

There is also a positive impact on Objective (c) because the change encourages more participation in the market, which increases competition. It must be ensured that the solution is implemented in a cost-effective manner to preserve the benefit of the increased competition.

Finally, there is also a positive impact on Objective (e) because the TERRE solution must allow for the participation of customers (or independent aggregators acting on their behalf) in RR. The proposed change will remove a barrier to entry for customers to participate in RR.

8 Implementation Approach

This Modification is dependent on the implementation of P344 Project TERRE, which is scheduled to be fully implemented in the BSC in November 2019. Ideally this Modification would be implemented at the same time, but it is unlikely there will be sufficient time to implement this Modification simultaneously. The next available Release should therefore be sought.

As there are numerous Baselining Methodologies in operation at the moment, from a pragmatic viewpoint, the Workgroup may consider building on the back of existing research, and utilising an existing well known Baselining Methodology for assessment purposes and then seek to finesse this methodology during implementation.

9 Legal Text

Expected document impacts

This Modification will impact on a number of BSC Sections and configurable items. The Baselining Methodology is likely to exist within a new Code Subsidiary Document (CSD) and not the BSC.

Legal text changes are likely to be made to the following sections of the BSC:

- Section K 'Classification and registration of Metering Systems and BM Units'
- Section Q 'Balancing Service Activities'
- Section S 'Supplier Volume Allocation'
- Annex S-2 'Supplier Volume Allocation Rules'
- Section T 'Trading Charges'
- Section V 'Reporting'
- Annex X-1 'General Glossary'
- Annex X-2 'Technical Glossary'

and the following CSDs may require changes to implement the solution:

- BSCP15 'BM Unit Registration'
- BSCP20 'Registration of Metering Systems for Central Volume Allocation'
- BSCP27 'Technical Assurance of Half Hourly Metering Systems for Settlement Purposes'
- BSCP31 'Registration of Trading Units'
- BSCP75 'Registration of Meter Aggregation Rules for Volume Allocation Units'
- BSCP534 'PARMS Techniques'
- BSCP535 'Technical Assurance'
- CRA Service Description
- CRA User Requirements Specification

along with any other document impacts identified by the Workgroup.

We also expect changes to the deployment of the Performance Assurance Techniques, but we do not expect this to require changes to the Code itself.

10 Recommendations

Proposer's Recommendation to the BSC Panel

The BSC Panel is invited to:

- Agree that P376 not be progressed as a Self-Governance Modification Proposal; and
- Agree that P376 be sent into the Assessment Procedure for assessment by a Workgroup.