





BSC Modification Proposal Form		At what stage is this document in the process?
<h1>P375</h1> <p>Mod Title: 'Settlement of Secondary BM Units using metering behind the site Boundary Point'</p>		<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="border: 1px solid green; background-color: #00a651; color: white; padding: 5px; margin-bottom: 5px;">01 Modification</div> <div style="border: 1px solid blue; padding: 5px; margin-bottom: 5px;">02 Workgroup Report</div> <div style="border: 1px solid purple; padding: 5px; margin-bottom: 5px;">03 Draft Modification Report</div> <div style="border: 1px solid orange; padding: 5px;">04 Final Modification Report</div> </div>
<p>Purpose of Modification:</p> <p>To settle Secondary Balancing Mechanism (BM) Units using metering equipment behind the defined Boundary Point for Balancing Services (known as 'behind the Meter'), rather than settling using Metering Equipment at the Boundary Point as per current BSC obligations. This allows balancing-related services on site to be separated from imbalance-related activities, more accurately reflecting the balancing-energy volumes provided by the Balancing Service Provider (BSP).</p>		
	<p>The Proposer recommends that this Modification should:</p> <ul style="list-style-type: none"> not be a Self-Governance Modification Proposal be assessed by a Workgroup and submitted into the Assessment Procedure <p>This Modification will be presented by the Proposer to the BSC Panel on 13 December 2018. The Panel will consider the Proposer's recommendation and determine how best to progress the Modification.</p>	
	<p>High Impact:</p> <ul style="list-style-type: none"> Virtual Lead Parties Half Hourly Data Aggregators (HHDAs) ELEXON 	
	<p>Medium Impact:</p> <ul style="list-style-type: none"> Meter Operator Agents 	
	<p>Low Impact:</p> <ul style="list-style-type: none"> N/A 	

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Timetable		 saskia.barker@flexitricity.com
<i>Please provide Proposer and Proposer Representative contacts and an indicative timetable. The BSC Change Analyst will update the contents and provide any additional Specific Code Contacts. The BSC Change Analyst can provide specific dates based on your Implementation Approach in Section 8.</i>		
The Proposer recommends the following timetable: (amend as appropriate)		
Initial consideration by Workgroup	W/C 21 January 2019	 0131 221 2241
Further consideration by Workgroup	W/C 18 February 2019	
Further consideration by Workgroup	W/C 15 April 2019	Other: Gordon Henderson, Flexitricity
Assessment Procedure Consultation	6 May 2019 – 24 May 2019	
Workgroup consideration of Consultation responses	W/C 3 June 2019	 gordon.henderson@flexitricity.com
Workgroup Report presented to Panel	11 July 2019	
Report Phase Consultation	15 July 2019 – 26 July 2019	 0131 221 2643
Draft Modification Report presented to Panel	8 August 2019	
Final Modification Report submitted to Authority	9 August 2019	

1 Summary

What is the issue?

The BSC currently only allows metering at the defined Boundary Point to be used for Settlement purposes. However, with the future ability for consumers to participate in the BM and other alternative balancing products, which will be settled under the BSC framework, there is a need to allow Settlement from metering behind the Boundary Point at the asset which is delivering the Balancing Service. This Issue arose through the development of the Project TERRE arrangements through BSC [Modification Proposal P344 'Project TERRE implementation into GB market arrangements'](#), but may become relevant to other Balancing Services in the future.

The need to allow Settlement from metering behind the Boundary Point is due to the desire to further reduce any potential (either perceived or due to operational reasons) barriers to entry to participate in balancing products.

Background:

P344 aligned the Balancing and Settlement Code (BSC) with the European Balancing Project TERRE (Trans European Replacement Reserves Exchange) requirements. As part of this alignment, a new type of BSC party, Virtual Lead Party (VLP), and a new type of BM Unit, Secondary BM Units, were created as a way for customers to participate in TERRE and the Balancing Mechanism without relying on their Supplier, by separating the roles of Balancing Services Provider (BSP) (which in this case will be the VLP controlling the assets) and Balancing Responsible Party (BRPs, which under the BSC will be the Supplier).

A BSP is a market participant that provides volumes to National Grid Electricity System Operator for the purposes of balancing the total system, whereas a BRP is the BSC Party that is responsible for the Imbalance position of its registered metering systems i.e. its contacted vs metered volumes position. Note that the P344 solution automatically adjusts the BRP Imbalance position as a result of BSP actions. The solution developed by the P344 Workgroup relies on all Balancing Services provided by VLPs (consumers participating directly or through an independent aggregator) being settled on metering at the site Boundary Point. The workgroup acknowledged that customer sites, unlike current BM participants, often have a combination of equipment with some being capable of delivering Balancing Services and some that are not. This means that other independent actions on site could lead to the metering at the site Boundary Point not reflecting the Balancing Services volumes the VLP actually delivered. The mixed nature of customer site assets can also make it difficult for VLPs to post accurate Final Physical Notifications (FPNs). While the P344 workgroup acknowledged this issue, it was agreed that it could not be addressed within the limited timescale to ensure compliance with the European Electricity Balancing Guideline (EB GL).

What is the proposed solution?

The proposed solution is to give VLPs the option of installing Settlement quality metering on sites that are part of a Secondary BM Unit at the most appropriate point to measure the actual delivery of the assets the VLP can control independently. The VLP would use this metering to settle its Secondary BM Unit. VLPs would submit physical and dynamic data to reflect the capability at the Metering Point, rather than the site as a whole.

2 Governance

Justification for proposed progression not Self-Governance

The Proposer believes that the Modification is likely to have a material effect on competition (impacts Self-Governance criterion ii). By removing a barrier to entry for consumers to participate in TERRE and the BM this Modification 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?

What is the issue?

The solution developed by the P344 Workgroup allows consumers (or independent aggregators acting on their behalf) to participate in TERRE (and the Balancing Mechanism (BM)) independent of their electricity Supplier, by registering a 'Secondary BM Unit'. This solution allows Balancing-related activities to be separated 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 the "Balance Responsible Party" (BRP) as defined in the Electricity Balancing Guideline (EB GL). 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, which the Supplier is protected from 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 EB GL. 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 Electricity System Operator (ESO).

However, although the P344 solution separates out the cash flows relating to these two roles, it does not do the same for the metering. It requires that metered data from the Supplier's Settlement Metering (located at the Boundary Point, and logically associated with imbalance-related activities) should also be used to verify delivery of acceptances issued to the Secondary BM Unit (which is a balancing-related activity). Separating the two roles would require a mechanism by which the VLP could install its own Settlement Metering, located at an appropriate place to measure the volume of balancing energy provided, which may be close to the asset delivering the service. Such metering is sometimes referred to as 'Behind the Meter' or 'Behind the Settlement Meter', because it is installed within a customer site,

behind the Settlement Meter installed by the Supplier at the Boundary Point (for purposes of Imbalance Settlement). 'Behind the Meter' metering arrangements are already used for most non-BM services, like Short Term Operating Reserve (STOR).

The P344 solution facilitates participation in TERRE and the BM for consumers, either on their own or through an independent aggregator. Unlike traditional power stations, consumer sites are often complex and contain assets capable of participating in balancing activities/products (like TERRE (Replacement Reserve) and the BM) as well other equipment that is inflexible or operates independently of the asset delivering the Balancing Service volumes. 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 double, the CHP output at the Boundary Point. In the P344 solution the VLP would need to know when the pumping change was going to happen and reflect that in the FPN. This can be difficult, as often the VLP only has access to the schedule for the asset providing Balancing Services. Also, the Boundary Point Meter is the responsibility of the Supplier, and therefore an independent VLP often does not have access to the metering data at the boundary. If the VLP creates an inaccurate FPN, they could be liable for non-delivery volumes on Balancing Services volumes that were actually delivered, or conversely, avoid charges they are due to pay for failures which were masked by independent loads.

Allowing VLPs to use more appropriate metering closer to the asset delivering the Balancing Service would mean more consumers with complex sites will be able to more efficiently and effectively participate in TERRE and the BM.

4 Code Specific Matters

Technical Skillsets

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

Reference Documents

No particular reference documents need to be considered.

5 Solution

Proposed Solution

The proposed solution is to amend the BSC to allow Secondary BM Units to be settled at a Settlement quality Meter at a point behind the Boundary Point Meter. It is important that the solution creates checks

to ensure the delivery being measured is 'real' while balancing the proportional 'risk' of these metering systems being used in Settlement.

The solution aims to be as similar as possible to existing Boundary Point metering processes to both ensure the solution is as fair as possible and limit fundamental system changes required.

Metering Standards

Because the metering for Secondary BM Units is being used for Settlement it should adhere to the same standards set out for Boundary Point metering. That means the standards should be based on the BSC Codes of Practice (CoPs), if it is not a direct reference to the CoPs. Learning from the rigidity of the Capacity Market approved metering solutions, metering for Secondary BM Units should also be subject to rules similar to the Metering Dispensation rules covered in BSCP601. This is particularly important for sites where existing Balancing Services metering (for example STOR operational metering) is of an equal or higher accuracy standard than required by the CoPs. In such circumstances it would not make sense to require the site to install new CoP-compliant metering. Because of non-BM Balancing Services and the Capacity Market, high quality sub-metering already exists on sites that could potentially participate in TERRE and the BM in December 2019.

Losses should be treated in a similar way to the method used for Settlement Meters. The Line Loss Factors (LLFs) published by Distribution Network Operators (DNOs) through existing BSC processes should be used for the metering behind the Boundary Point at the correct voltage level for the metering.

Meter Registration and Data

VLPs will need the ability to appoint BSC Qualified Agents, similar to the process by which Qualified Party Agents are appointed at the Boundary Point. Specifically, VLPs would need to appoint a qualified Meter Operator Agent (MOA) and Data Collector (DC). HHDA's will be required to submit HH metered volume data for SVA Metering System Numbers associated with Secondary BM Units to Settlement. Settlement would use this data and the registration data to calculate an aggregated volume for each Secondary BM Unit, in order to facilitate settlement of TERRE Activations and BM instructions. This is a similar process to the one by which HHDA's submit metered data for Metering Systems in Capacity Market Units (CM Units) to the Electricity Market Reform (EMR) settlement process.

To facilitate this, the metering systems behind the Boundary Point would be assigned a 13-digit identifier, similar to the pseudo MPANs some DCs already assign to sub-metering for site monitoring purposes. Like difference metering, the relationships of these sub-metering IDs to the boundary MSID(s) would be recorded. These sub-metering IDs and the associated with the boundary MSID(s) would be stored in a central register maintained by ELEXON. The line loss factors would be assigned at the time of registration and based on the voltage level the metering is installed at.

A change of VLP process, based on the change of Supplier process, but simpler, would be established. A change of VLP process for the Boundary Point Settlement Meters has already been established as part of the P344 solution, so this solution will seek to align the metering change of VLP process timescales with those already established.

Assurance and Independence of Assets

It is important for the legitimacy of consumer participation in Balancing Services that there are appropriate checks in place to ensure the portion of the customer site being metered by the VLP is truly independent of the unmetered portion. An independent metering point is one that captures any consumption that is related to the balancing service delivery, like the electrical load often associated with generator running. For example, metering for a generator would need to capture any parasitic load. Parasitic loads are electrical loads which contribute to the engine's ability to create energy like compressors or oil pumps. Alternatively, on a site that contains two water pumps, turning one off could cause the other to switch on (either because their control systems were directly linked, or because the reduction in water flow could cause the second pump to start). These two pumps would not be independent of each other, and it would not be acceptable to register one of the two as an asset in a Secondary BM Unit (because any action it took would potentially be undone by the other). Both pumps, or neither would need to be included in the Secondary BM Unit.

As part of the metering registration process, VLPs will be asked to obtain and keep evidence (including single line diagrams if appropriate) of the independence of the Balancing Services volumes delivered at the asset level metering point behind the Boundary Point metering. The VLP must be able to produce these records if required for Performance Assurance purposes.

A possible method of verification of independence would be to do a statistical analysis of the impact of the Balancing Services delivered on the Boundary Point metering. While the volume delivered by the Secondary BM Unit will not always be the same as the change on the Boundary Point metering, it should be verifiable through an analysis over several instances of delivery. The monitoring and assurance processes for behind the Boundary Point metering should be similar to that for Boundary Point metering and should be proportional to the effect on the System. Using statistical methods for spot checking as part of the Performance Assurance process could be appropriate. The Workgroup should discuss what, if any, statistical methods are appropriate. It is possible that one, or more, of the methods developed or investigated by the forthcoming Baseline methodology Modification Workgroup could be used.

The [Risk Evaluation Register \(RER\)](#) would be updated to reflect any changes to Settlement Risks. This would then drive changes to the Risk Operating Plan (ROP), which sets out what Performance Assurance Techniques (PATs) can and have been applied to each Settlement Risk identified in the RER.

Metering at the asset level behind the defined Boundary Point should be treated the same as Settlement Metering under the Trading Disputes process.

6 Impacts & Other Considerations

Impacts

Consumers will be impacted as they will be able to participate in TERRE and the BM if they wish to do so, and this Modification removes a barrier to entry for them to participate in these products. Changes will need to be made to the BSC to facilitate this will include:

- A change to VLP process;
- A register of asset metering to be created and maintained by ELEXON;
- Amendments to Settlement data flow processes as new data flows will need to be created for the new metering; and

- Amendments to the Codes of Practice and metering dispensation processes will probably be required, but this should be explored further by the workgroup.

Meter Operator Agents (MOAs) and HH Data Aggregators (DAs) will also be impacted as they will need to be able to install, register and maintain the new Meters and establish relationships with VLPs as opposed to Suppliers. The DTN processes will also be effected as new data flows will need to be established.

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

We do not believe this Modification impacts any current SCR. The proposed solution is built on the approved P344 solution.

Consumer Impacts

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

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 Modification 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 National Grid when balancing the System, thus leading to more efficient and economic balancing actions being procured.

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 effect of the increased competition.

Finally, there is also a positive impact on Objective (e). The TERRE solution must allow for the participation of consumers (or independent aggregators acting on their behalf) in TERRE, which it currently does. However, this proposed change will further reduce any potential (either perceived or due to operational reasons) barriers to entry to participate in balancing products, including TERRE and the BM.

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 BSC Release should therefore be sought following Authority decision, allowing for any lead time for implementation of changes to Systems identified during the Assessment Phase.

As the Proposer, we initially suggest an implementation date of April 2020, to following TERRE go-live, but in consideration of the timescales required to progress this proposal.

9 Legal Text

The Proposer believes that appropriate legal text is best developed as part of the Assessment Procedure of this Modification.

10 Recommendations

Proposer's Recommendation to the BSC Panel

The BSC Panel is invited to:

- Agree that P375 not be progressed as a Self-Governance Modification Proposal; and
- Agree that P375 be sent into the Assessment Procedure for assessment by a Workgroup;