Designation Request and Initial Written Assessment

‘On-Site Aggregation as a method to facilitate Third Party Access’

This Modification seeks to establish a more cost effective and efficient method for delivering Third Party Access on private networks that include domestic and small business customers. It does so by enabling aggregated meter data from sub meters on private networks to be submitted into Settlement in lieu of data from Settlement meters installed at the Boundary Point.

Elexon recommends Emergent Energy is designated as a Third Party Proposer for the attached Modification Proposal

Elexon recommends that this Modification is progressed to the Assessment Procedure for an assessment by a Workgroup

Elexon does not consider it likely that this Modification will impact the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC

This Modification is expected to impact:

- Suppliers
- Generators
- Half Hourly Data Collectors (HHDCs)
- Half Hourly Market Operator Agents (HHMOAs)
- Licence Distribution System Operators (LDSOs)

ELEXON

Phase

Initial Written Assessment

Definition Procedure

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About This Document

You can find the definitions of the terms and acronyms used in this document in the BSC Glossary[1].

This document is an assessment of a request by a non-BSC Party to be designated by the BSC Panel to raise a specific Modification Proposal.

Elexon will present this designation request and the associated Modification Proposal to the Panel on 8 June 2023. The Panel will consider the recommendations and decide whether to designate the Third Party Applicant and if so, this document will form the Modification Proposal's Initial Written Assessment (IWA) and the Panel will agree how to progress the Modification Proposal.

There are 4 parts to this document:

- This is the main document. It provides details of the Designation Request and the associated Modification Proposal, an assessment of the potential impacts and a recommendation of how the Modification should progress, including the Workgroup's proposed membership and Terms of Reference.
- Attachment A contains the Designation Request Form.
- Attachment B contains the Modification Proposal Form.
- Attachment C contains the Third Party Designation Letter.

[1] https://www.elexon.co.uk/glossary/?show=all

Contact

Kayleigh Neal

020 7380 4175

BSC.change@elexon.co.uk

Kayleigh.neal@elexon.co.uk

Not sure where to start?

We suggest reading the following sections:

- Have 5 minutes? Read section 1
- Have 15 minutes? Read sections 1, 4, 5 and 6
- Have 30 minutes? Read all sections
- Have longer? Read all sections and the annexes and attachments.

1 Summary

Designation Request

Emergent Energy is requesting Designation to raise this Modification Proposal. They have designed and developed the solution which they are trialling live in the market via the BSC Sandbox. This Modification takes into account the successes and learnings from the Sandbox trial, as well as Emergent Energy's unique data and insights relating to its practical implementation. Emergent is interested and motivated to address the issue in the BSC because it negatively impacts its business.

Why change?

Where one or more customers on a private wire network (henceforth private network) opt for a third party supply, corrective action is required to avoid the double counting of metered volumes in Settlement.
The BSC provides ways to avoid the double counting of metered volumes on private networks via difference metering option and shared SVA metering.

The Proposer believes that these existing options are unsatisfactory when applied to private networks that include domestic and small business (i.e. sub 100kW) customers. This is due to the operational requirements placed on, and the lack of incentive for, Third Party Suppliers (TPSs) to meet such requirements.

Solution

The solution proposes a new 'on-site aggregation' methodology for facilitating Third Party Access on private networks to which domestic and small business (i.e. sub 100kW) customers are connected. This methodology can be used instead of difference metering, but requires the BSC to allow aggregated meter data from sub-meters (relating to customers not opting for third party supply) on private networks to be submitted into Settlement (in lieu of data from Settlement meters installed at the Boundary Point).

Impacts and costs

We expect this Modification to impact BSCCo, Suppliers, Generators, LDSOs, HHDCs and HHMOAs. Costs and further impacts on market participants will be determined as part of the Assessment Procedure.

Implementation

This Modification will need to be implemented prior to the end of the Derogation Period which ends no later than 25 September 2024.

The Proposer and Elexon recommend an Implementation Date of:

- 29 June 2024 as part of the standard June 2024 BSC Release if an Authority decision is received on or before 6 June 2024; or

What is a Private Wire Network?

A private wire network is a term used to describe a Licence Exempt Network (LEN).

A LEN is a network which distributes power without the need for an electricity distribution licence. They can be connected to or stand apart from the public network (comprising the distribution and transmission networks). Operators of these networks (otherwise known as distribution exemption holders) must satisfy themselves that they can operate within the framework provided for by the Electricity (Class Exemptions from the Requirement for a Licence) Order 2001 and appropriate provisions of the Electricity Act 1989, particularly Schedule 2ZA which sets out the duties of distribution exemption holders.

- 5 working days after Authority decision (though no earlier than 4 July 2024), as part of a special BSC Release if an Authority decision is received after 6 June 2024.

Recommendation

The Panel is invited to designate Emergent Energy to raise this Modification and agree that it is submitted to the Assessment Phase for assessment by a Workgroup.

2 Designation Request

How does the designation process work?

This is the third designation request that Elexon has received following the implementation of P370 'Allow the Panel to designate non-BSC Parties to raise Modification' in April 2019. We therefore think that it is beneficial to include a brief summary of the process.

Non-BSC Parties can ask the Panel to designate them to raise a specific Modification Proposal. Industry are notified of a designation request in advance of the Panel meeting where the Panel will decide whether or not to designate. The request is presented to the Panel, along with the proposed Modification.

In considering the application, the Panel may:

- before designating a person as a Third Party Proposer, conduct such consultation with BSC Parties and interested third parties as it considers necessary;
- refuse to accept an application for designation as a Third Party Proposer, in which case we shall provide the Third Party Applicant with the Panel's reasons for such refusal and notify industry of the decision; and
- approve the request, in which case the Third Party Proposer shall be treated as a Proposer under Section F of the BSC, and we shall notify industry of the decision.

BSC Parties and the Third Party Applicant may appeal the Panel decision to Ofgem.

Designation Request

The designation request was submitted by Emergent Energy on 31 May 2023 and can be found in Attachment A.

Rationale for requesting designation as a Third Party Proposer

Emergent Energy believes that it is best placed to raise this Modification Proposal. They have designed and developed the solution which is being trialled live in the market via the BSC Sandbox. Following the trials success, they believe that an enduring change to the BSC is necessary. Emergent Energy has unique data and insights relating to its practical implementation as well as substantial experience of exploring and testing alternative methods and solutions in liaison with Elexon and Ofgem prior to the Sandbox trial.

This includes attempts to apply difference metering and a novel 'feed-through' metering arrangement based on allowable configurations for Complex Sites[2]. They have also explored an option to include provisions within P379 'Multiple Supplier through Meter Splitting' but this Modification was ultimately withdrawn by the Proposer.

[2] A 'Complex Site' means; any site that requires a 'Complex Site Supplementary Information Form' to enable the HHDC to interpret the standing and dynamic Metered Data relating to SVA MSs for Settlement purposes to be provided to the HHDC in addition to the D0268 Half Hourly Meter Technical Details.

Reasons why the Third Party Applicant believes that they have an interest in the Code

The issue that this Modification seeks to address negatively impacts Emergent Energy's business model. In developing private network schemes, their goal is to offer benefits to customers versus competing offers on price and service. They therefore consider it essential that customers on private networks are free to choose whether to be supplied by the Supplier associated with the private network or by an alternative Third Party Supplier of their choice.

As a Private Network Operator (PNO), Emergent Energy has an obligation (discussed below) to facilitate access to Third Party Suppliers (TPSs) on its private network(s). This proposed Modification argues that PNOs (who are non-BSC Parties) should have a greater role to play in delivering arrangements to support Third Party Access within the BSC. Emergent Energy's proposed solution seeks to achieve this in such a way that benefits BSC Parties (i.e. Third Party Suppliers and Supplier Agents) and small business and domestic customers on private networks.

3 Why Change?

What is the issue?

Customers on private networks may be supplied electricity from the Boundary Point Supplier. The Boundary Point Supplier is usually appointed by the PNO.

Customers on private networks also have the right to switch to a Third Party Supplier of their choice. Under the Electricity and Gas (Internal Markets) Regulations 2011 (Statutory Instrument (SI) 2011 No. 2704), PNOs are obligated to facilitate access to TPSs.

Where one or more customers on a private network opt for a third party supply, corrective action is required to avoid the double counting of metered volumes in Settlement. This is because Third Party Meter readings submitted into Settlement by the TPS Agent also contribute to the aggregate Boundary Point Meter reading submitted into Settlement and allocated to the energy account of the Boundary Point Supplier.

The BSC provides ways to avoid the double counting of metered volumes on private network via difference metering and shared SVA metering.

The Proposer believes that these existing options are unsatisfactory when applied to private networks that include domestic and small business customers[3] due to the operational requirements placed on, and the lack of incentive for, TPS to meet such requirements.

Difference Metering

A difference metering approach involves the deduction of the consumption through the Third Party Meter(s) from the Boundary Point Meter. This approach is applicable whenever one or more (but not all) customers on a private network have a Settlement Meter with a TPS[4].

The operational requirements placed on TPSs enabling them to participate in difference metering arrangements are as follows:

a) A TPS on a private network must appoint the same HHMOA and HHDC as the Boundary Point Supplier. This requires coordination between appointed TPSs and the Boundary Point Supplier. It may also result in TPSs having to establish new contractual arrangements with HHMOAs and HHDCs of whom they have not previously appointed.

b) Accurate Settlement requires allocations among Suppliers to be done on a Half-Hourly (HH) basis for difference metering. HH Settlement of domestic and small business customers is not currently mandated or standard practice. TPSs are

What is a Boundary Point?

a point at which any Plant or Apparatus not forming part of the Total System is connected to the Total System.

What is a Boundary Point Supplier?

the Supplier with responsibility for flows of electricity from (or to) the licenced distribution network

What is a Third Party Supplier?

A Supplier appointed by a customer on the private network.

What is a Boundary Point Meter?

A BSC Code of Practice (CoP) compliant Metering System located at the Boundary Point.

What is a Third Party Meter?

a Settlement Meter installed for the customer on the private network.

[3] The Proposer argues that this issue is felt most prominently in new build housing schemes which is the main focus for private network development currently in the market. Notably, customers move into a home which is supplied by the private network by default, and face barriers to switching away.

[4] BSCP502 'Half Hourly Data Collection for SVA Metering Systems Registered in SMRS' (section 4.9.3) and the Retail Energy Code (REC) Metering Operations Schedule recognises this approach as a Complex Site, which allows a differencing algorithm to be implemented in Settlement.

therefore required to establish voluntary, non-standard arrangements to settle their private network customers on a HH basis.

Under the Electricity and Gas (Internal Markets) Regulations 2011, the responsibility for finding a TPS who will participate in difference metering arrangements sits with the customer. This can be very difficult for individual domestic or small business customers to achieve as there is little commercial incentive for Suppliers to establish the bespoke arrangements required, given the relatively low electricity supply volumes that would likely result. It is therefore the Proposer's view that domestic and small business customers face substantial barriers to being able to switch to a Supplier of their choice.

It is also the Proposer's view that inefficiencies arise in the differencing metering approach when there is more than one TPS supplying customers on a private network. For example, where a private network is connected to 100 domestic properties, 50 of which are supplied by a license exempt Supplier appointed by the PNO and 50 of which are supplied by 20 different TPSs, all 20 TPSs must establish the bespoke arrangements mentioned above to facilitate the scheme.

Shared SVA Metering

Suppliers may establish a Shared SVA Metering Arrangement in which Meter readings recorded at the Boundary Point are apportioned between Suppliers (for example, based on readings from non-Settlement Meters on a private network).

Under this arrangement, an Allocation Schedule must be prepared in accordance with BSCP550 'Shared SVA Meter Arrangement' which details how the consumption data is split between Suppliers[5].

The Proposer argues that given the number of potential TPSs involved in the shared arrangement, accurately allocating volumes can be complex. Therefore, the operational requirements placed on TPSs discussed above (which act as a barrier to domestic and small business customers on private networks being able to switch Suppliers) are even more pronounced here.

Full Settlement Metering

Full settlement arrangements are only applicable if every customer on a private network has opted for third party supply. The arrangements involve installing Settlement Meters for all consumption and generation on the private network, and treating each of those metering points as if they were connected to the Total System[6]. It therefore does not create a scenario that risks the double counting of metered volumes.

[5] In line with Section K2.5.4, where the Shared SVA Meter Arrangement is made by two or more Suppliers, the Suppliers shall agree which of them is to act as primary Supplier for the purposes of the Code, failing which the Panel shall nominate one of them to act as primary Supplier. The Primary Supplier shall ensure that an Allocation Schedule and the associated rules for application and maintenance of the Allocation Schedule are established and submitted in accordance with BSCP550.

[6] The BSC refers to a private network with full Settlement arrangements in place as an 'Associated Distribution System'. Metering Systems on an Associated Distribution System are treated in the same way as any other site connected to the Total System and are subject to the normal LDSO Use of System (UoS) charges. This means that customers connected to the private network cannot benefit from netting against on-site (renewable)

Nonetheless, while it is important to note the existence of this arrangement, this Modification is focused primarily on private networks with a mix of customers who have opted for a third party supply and customers who are supplied by the Boundary Point Supplier appointed by the PNO.

Background

Prior to this Modification Proposal, Emergent Energy submitted a Derogation Request to use the BSC Sandbox to trial their proposed solution to the issue outlined above. The request was approved by Ofgem on 26 May 2021 in line with the BSC Panel's recommendation. The Derogation commenced on 29 September 2021 and will end no later than 25 September 2024. This Modification will need to be implemented prior to this end date.

Emergent Energy's proposed solution – which is described in more detail in section 3 – involves a new on-site aggregation methodology for submitting metered data from private networks into Settlement. This methodology is being trialled across several of its sites. In an update provided in February 2023, Emergent Energy highlighted that the new methodology has proven to be successful in delivering equivalent Settlement results to the existing methodology of difference metering.

Emergent Energy has now submitted a Modification Proposal to make an enduring change to the BSC which takes into account learnings from the Sandbox trial. The Modification is being proposed for Assessment by a Workgroup where further evidence from the trial will be presented.

Desired outcomes

To establish a new methodology for facilitating Third Party Access on private networks to which domestic and small business customers (i.e. sub 100kW customers) are connected. The new method will be one that can be used instead of difference metering, which is the current default method for private networks where Third Party Access is required.

The new methodology will be more operationally efficient than difference metering and provide better outcomes for domestic and small business customers who may wish to switch from their Boundary Point Supplier to a Third Party Supplier (and vice versa).

For example, it will not require TPSs to establish new contractual arrangements with HHMOAs and HHDCs of whom they have not previously appointed. Instead it will be delivered by the PNO in collaboration with the Boundary Point Supplier and Supplier Agents.

generation, and would have to pay system charges for that generation even though they are not using the Total System.

What is a Derogation Request?

Innovators may want to trial an activity or arrangement, in a live market environment, that wouldn't normally be allowed by the BSC rules. Through the BSC Sandbox they can seek a temporary BSC Derogation from having to comply with one or more of these rules.

For each application, Elexon assesses the risks and impacts of the requested derogation on behalf of the BSC Panel. The Panel makes a recommendation to Ofgem. Ofgem makes the final decision.

The maximum Derogation Period permitted by the BSC is three years. This comprises two years maximum for the Trial Period where the applicant tests their innovation, and any additional Transition Period during which they exit from the Derogation.

A BSC Modification Proposal to implement a permanent rule change may be submitted during the Transition Period.

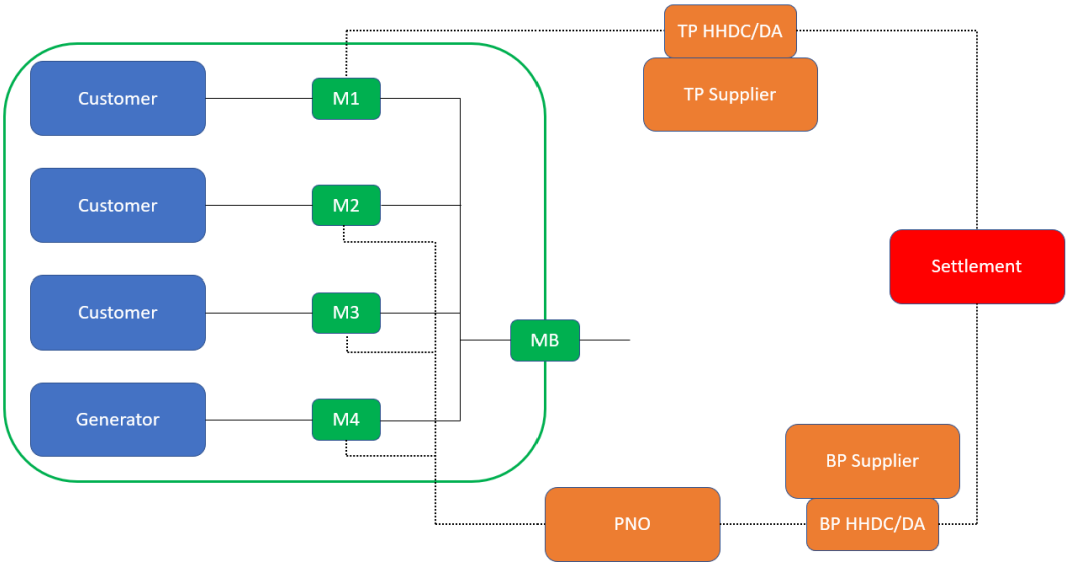
4 Solution

Proposed solution

Each customer supplied by the private network's Boundary Point Supplier has their own non-settlement (sub) meter with HH data available. This data is used for retail billing.

The proposed solution will enable this data to be aggregated and submitted into Settlement in lieu of the reading from the site's Boundary Point Meter. This volume will therefore not include the volumes supplied by the TPSs. Volumes for third party supplied customers on the private network will be settled directly by the TPS (HH or Non-HH as per the discretion of the TPS), avoiding any double counting of Settlement volumes than can result from third party supplied arrangements.

It will also account for on-site generation as per the diagram below.



In this example:

1. Customer 1 (top) is supplied by a TPS. The supplied volumes are metered by Settlement meter M1 and submitted into Settlement by the TPS.

2. Customers 2 and 3 are supplied by the PNO (or an entity associated with the PNO) who uses non-Settlement (sub-meters) M2 and M3 to bill these customers.

3. The PNO supplies electricity from an on-site generation source (e.g. solar PV panels[7]) to customers 2 and 3, as well as electricity imported from the Distribution Network (grid). The generated volumes from the on-site generation source are metered by non-Settlement (sub-meter) M4.

4. The PNO uses this data from M2, M3 and M4 to produce a net import or net export figure for every HH period. For example, M4 – (M2 + M3)[8]. This figure is then submitted into Settlement in place of the readings from the Boundary Point Meter (MB).

[7] i.e. solar photovoltaic panels
[8] the onsite customer will always consume from the on-site generation source before taking demand from the Distribution Network

Operational Requirements

To ensure the above onsite aggregation methodology results in accurate Settlement outcomes for private networks, procedural arrangements will need to be established as part of the solution. The Proposer suggests the following:

1. The private network sub-meters will be required to conform to Code of Practice (CoP) 10: The Metering of Energy via Low Voltage Circuits for Settlement Purposes.

2. The HHDC associated with the PNO will be responsible for retrieving, aggregating and submitting the necessary data and into Settlement. The HHDC may, at their discretion, choose to coordinate with a PNO to fulfil the requirements, so long as the operating standards required of HHDCs are maintained. The standard requirements on HHDC activities (e.g. in relation to data validation and estimation) shall apply.

3. It will be the HHMOA associated with the PNO who is responsible to identifying and fixing faults on the private network sub-meters. The HHMOA may choose to coordinate with a PNO to fulfil the requirements, so long as the operating standards required of HHMOAs are maintained. The standard requirements on HHMOA activities (e.g. in relation to faults and installation) shall apply.

4. For each private network that adopts this approach, a test akin to a Complex Site Validation Test[9] will be required to ensure that the aggregation methodology is being applied correctly. This will require the HHDC and HHMOA to establish the data integrity of the individual meters involved and the overall aggregation methodology that is being applied to these meters. This point is discussed further in section 4).

5. The solution will be restricted to private networks with TPS Metering Systems and that are sub 100kW capacity.

6. Metering System Identifiers (MSIDs)[10] of private network customers supplied by the PNO (or an associate) will be required to be de-energised and not logically disconnected. While logical disconnections typically happen under the current arrangements, this results in customers having to request a new MSID if they wish to switch to a TPS. By leaving the MSID in a de-energised state, the MSID can simply be reinstated when the customer switches to a TPS.

Benefits

This Modification will benefit domestic and small business customers (sub 100kW) on private networks. It will do so by reducing the operational requirements on potential TPSs which enable them to take part in private network arrangements where difference metering is or would be used. It should therefore be easier for these customers to find TPSs willing to supply their energy[11]. It should also be easier for Suppliers to attract new domestic and small business customers who are connected to a private network and are currently being supplied by the Boundary Point Supplier (meaning greater competition which can lead to improved outcomes for the market as a whole).

[9] See BSCP504, paragraph 3.5.6
[10] also known as Metering Point Administration Numbers (MPANs)
[11] This is particularly relevant given today's focus on new build housing, where private networks can be established at the point of construction. Customers who move into new build homes are often a customer of the PNO by default.

It will have environmental benefits as private networks provide a mechanism for locally generated (renewable) electricity to be generated and supplied to customers. On site renewable generation (e.g. solar PV) remains an option for private networks operating under the proposed methodology.
Integrated with other decarbonisation technologies such as heat pumps, electric vehicle chargers and storage, private networks have potential to reduce capacity strains on the Distribution Network and unlock value flexibility for the overall energy system.

Applicable BSC Objectives

The Proposer believes that this Modification will better facilitate Applicable BSC Objectives (c), (d) and (e).

Objective (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

The proposed Modification improves access to TPSs for customers on private networks. Removing this barrier therefore supports increased competition between TPSs. It also improves the overall viability of private networks, increasing market competition from PNOs and Boundary Point Suppliers who may be associated with PNOs.

Objective (d) - Promoting efficiency in the implementation of the balancing and settlement arrangements

As above, the facilitation of TPS arrangements on private networks with domestic and small business customers will no longer require erroneous operational activities to be undertaken by TPSs. Instead, the required activities are undertaken by the Boundary Point Supplier and Supplier Agents, working in coordination with the PNO, who are already accessing and processing the relevant data as part of their day to day activity.

Objective (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]

The Proposer believes that, due to a legally binding decision of the European Commission, domestic and small business customers on private networks have the legal right to switch Supplier. Currently, this is not being effectively facilitated by the BSC. The legal right for customers to access a TPS arrangements was established in the UK via Schedule 2ZA to the Electricity Act 1989, which implemented the position as clarified in the EU's Third Package of internal EU electricity market measures in Directive 2009/72/EC (Electricity Directive).

Implementation approach

This Modification will need to be implemented prior to the end of the Derogation Period which occurs no later than 25 September 2024 to avoid Emergent's sandbox arrangements having to revert to the current compliance baseline.

In light of this, the Proposer and Elexon recommend an Implementation Date of:

- 29 June 2024 as part of the standard June 2024 BSC Release if an Authority decision is received on or before 6 June 2024; or
- 5 working days after Authority decision (though no earlier than 4 July 2024), as part of a special BSC Release if an Authority decision is received after 6 June 2024.

5 Areas to Consider

In this section we highlight areas which we believe the Panel should consider when making its decision on how to progress this Modification Proposal, and which a Workgroup should consider as part of its assessment of this Modification. We recommend that the areas below form the basis of a Workgroup's Terms of Reference, supplemented with any further areas specified by the Panel.

Areas to consider

The table below summarises the areas we believe a Modification Workgroup should consider as part of its assessment of this Modification:

Areas to Consider (specific)
Does the proposed on-site aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?
Should the proposed on-site aggregation methodology be required to conduct unmetered load tests?
Should there be a requirement for Elexon to maintain a central database of sites where on-site aggregation is applied? Do the benefits of maintaining a central register outweigh the costs of creating and maintaining this central register?

Areas to Consider (standard)
How will this Modification impact the BSC Settlement Risks?
What changes are needed to BSC documents, systems and processes to support this Modification and what are the related costs and lead times? When will any required changes to subsidiary documents be developed and consulted on?
Are there any Alternative Modifications?
Should this Modification be progressed as a Self-Governance Modification?
Does this Modification better facilitate the Applicable BSC Objectives than the current baseline?
Does this Modification impact the EBGL provisions held within the BSC, and if so, what is the impact on the EBGL Objectives?

Unmetered Load Tests

The Proposer recommends that for sites where on-site aggregation is in place, the relevant parties will be required to fulfil a test akin to a Complex Site Validation Test. The relevant HHDC and HHMOA will work together to establish the data integrity of the individual meters involved in the aggregation calculations, and the overall aggregation calculations that are being applied to these meters themselves.

Elexon has raised that this approach will fail to capture unmetered loads that may exist on a private network, something which is accounted for by difference metering. Emergent Energy noted that, while the stated purpose of difference metering is to facilitate third party access on private networks, this methodology indirectly captures any unmetered loads of private networks. The unmetered loads are captured within the loads derived from the Boundary Point Meter.

Consequently, Emergent Energy were required to undertake a test to demonstrate that unmetered loads did not exist on the sites enrolled onto their BSC Sandbox trial.

The Proposer's view is that the 'unmetered loads' test should not be an enduring requirement of the solution for the following reasons:

1. While difference metering offers the theoretical benefit of capturing unmetered loads on private networks, it does not occur in practice. This is because, for the reasons outlined above, difference metering is not an effective solution for PNOs or PNO customers. If an unmetered load is present on an existing network, there is little reason for a PNO scheme to be established that would see difference metering applied and the unmetered load captured.

2. The industry should not rely on difference metering, or an alternative solution aimed at facilitating Third Party Access on private networks, to capture unmetered loads. There are standard industry procedures in place for minimising and addressing unmetered loads. The existence or otherwise of such loads on a private network points to the failure of these other processes. If the industry is concerned about unmetered loads, it should re-examine why the existing processes for managing these loads of ineffective.

3. The idea that difference metering captures unmetered loads on a site is unrelated to the relative superiority of the proposed on-site aggregation methodology compared to difference metering for delivering TPS on private networks involving domestic and small business customers.

4. Emergent Energy's Sandbox trial has identified that the costs associated with unmetered load tests on existing private networks with TPS can be very high. This is because the PNO does not have direct access to metered data from the third party supplied customers. On large schemes, the only way to accurately meter third party supplied customers' loads is to install new meter infrastructure, which is cost prohibitive. The only alternative is to temporarily disconnect the electrical supply to these customers while the test is undertaken, which is an unacceptable level of disruption. Further details (and evidence) from the Sandbox trial will be presented to the Workgroup during the Assessment Phase.

Requirement for Elexon to maintain a central database of sites where on-site aggregation is applied

Emergent Energy does not believe that this is necessary, but note that it is something the Workgroup may wish to consider. Discussions could focus on:

- the data that should be included in any notification to Elexon;
- any potential commercial confidentiality or operational issues (e.g. how to keep data up to date on a scheme that may see varying levels of customer switching); and
- whether the costs of creating and maintaining a register outweigh the benefits of having one available.

6 Likely Impacts and costs

Costs will be assessed during the Assessment Procedure. However, for those roles we believe will be impacted, we have indicated in the impacts section whether we believe the costs are likely to be high, medium or low based on the following categories:

- High: >£1 million
- Medium: £100-1000k
- Low: <£100k

Impact on BSC Parties and Party Agents		
Party/Party Agent	Potential Impact	Potential cost
Supplier	Suppliers will need to be aware of the new On-Site Aggregation methodology and be able to support it should they choose to partner with PNOs who implement it.	L
Generator	If an independent generator partners with a PNO offering on Site aggregation they will need to understand the methodology and how it interacts with any other subsidies they may receive. This impact relates primarily to non-BSC (independent) Generators, but due to their interaction with the BSC in this scenario, it is important to capture here.	L
Licensed Distribution System Operator (LDSO)	LDSOs will need to be aware if an on-site aggregation methodology is being used on a particular site as this may impact the DUoS charges levied on Suppliers to the site. The specific charging methodology LDSOs should apply in the event of a scheme being in place is the subject of a second Sandbox trial by Emergent, which is expected to lead to a DCUSA Modification being raised in 2024.The current working assumption is that the BSC Modification and potential DCUSA Modification are independent. If the DCUSA Modification is not implemented, this will not materially impact the BSC Modification.	L

Impact on the NETSO	
Potential Impact	Potential cost
No impact anticipated	

Impact on BSCCo		
Area of Elexon	Potential Impact	Potential cost
No impact anticipated		

Impact on BSC Settlement Risks
Impact on Settlement Risks will be considered during the Assessment Procedure[12]

Impact on BSC Systems and processes	
BSC System/Process	Potential Impact
No impact anticipated	

Impact on BSC Agent/service provider contractual arrangements	
BSC Agent/service provider contract	Potential Impact
HHDCs	HHDCs associated with the PNO's Supplier will be responsible for retrieving, aggregating and submitting the necessary metered data into Settlement for Boundary Point Supplied customers and on-site generation sources. They will also need to work with HHMOAs associated with the PNO's Supplier to establish the data integrity of the individual meters involved and the overall aggregation methodology that is being applied to these meters.
HHMOAs	HHMOAs associated with the PNO's Supplier will be responsible for identifying and fixing faults on private network sub-meters. They will also need to work with associated with the PNO's Supplier to establish the data integrity of the individual meters involved and the overall aggregation methodology that is being applied to these meters.

Impact on Code	
Code Section	Potential Impact
Section L: Metering	Section L will need to be updated to reflect the solution.

Impact on MHHS
The impact on MHHS will be considered during the Assessment Procedure. Elexon's initial view is that the new data service requirements will need to be added to the relevant data service BSCPs.

[12] A risk assessment was previously carried out by Elexon as part of Emergent Energy's derogation request. This can be found here and will be used, in part, to inform the assessment on Settlement Risks and whether these risks apply to the Modification.

Impact on EBGL Article 18 terms and conditions
Elexon believes it is unlikely that this Modification will impact any of the EBGL Article 18 Terms and Conditions held within the BSC, but will assess and verify this with the industry Workgroup as part of the Assessment Phase.

Impact on Code Subsidiary Documents	
CSD	Potential Impact
BSP502 'Half Hourly Data Collection for SVA Metering Systems Registered in SMRS'	BSCP502 will need to be updated to reflect the solution. This will be drafted during the Assessment Procedure.

Impact on other Configurable Items	
Configurable Item	Potential Impact
No impact anticipated.	

Impact on Core Industry Documents and other documents	
Document	Potential Impact
Retail Energy Code (REC)	This Modification proposes to place a requirement on the SVA MOA appointed by the Boundary Point Supplier to rectify any faults found with the sub meters used in the on-site aggregation methodology. As SVA MOAs are governed under the Retail Energy Code (REC), we believe that this SVA MOA specific requirement will need to be delivered as a REC Change.

Impact on a Significant Code Review (SCR) or other significant industry change projects
Elexon requested that Ofgem treat this Modification as a SCR exempt Modification on 1 June 2023.

Impact of the Modification on the environment and consumer benefit areas:	
Consumer benefit area	Identified impact
1) Improved safety and reliability No impact	Neutral
2) Lower bills than would otherwise be the case This Modification should lower bills for customers on private networks who wish to be supplied by TPSs. TPSs will no longer incur costs as a result of establishing bespoke arrangements in these circumstances.	**Positive**
3) Reduced environmental damage This Modification will support growth in the use of private networks to support the financing of decarbonisation technologies for housing and small business customers. Private networks involving storage and other means of demand control will also deliver reductions in grid capacity constraints and unlock value flexibility. This will support the overall transition to a Net Zero emission electricity grid.	**Positive**
4) Improved quality of service This Modification will make switching easier for customers on private networks.	**Positive**
5) Benefits for society as a whole This Modification will result in benefits for society by supporting innovation in the delivery of statutory Net Zero targets and creating jobs.	**Positive**

What are the consumer benefit areas?

1) Will this change mean that the energy system can operate more safely and reliably now and in the future in a way that benefits end consumers?

2) Will this change lower consumers' bills by controlling, reducing, and optimising spend, for example on balancing and operating the system?

3) Will this proposal support:

i) new providers and technologies?

ii) a move to hydrogen or lower greenhouse gases?

iii) the journey toward statutory net-zero targets?

iv) decarbonisation?

4) Will this change improve the quality of service for some or all end consumers. Improved service quality ultimately benefits the end consumer due to interactions in the value chains across the industry being more seamless, efficient and effective.

5) Are there any other identified changes to society, such as jobs or the economy.

7 Proposed Progression

Next steps

Elexon recommend that the Panel designate Emergent Energy as the Third Party Proposer of this Modification.

The Proposer and Elexon recommend that this Modification is progressed to the Assessment Procedure for an assessment by a Workgroup.

We propose the first Workgroup is held in late June 2023, subject to the Panel's agreement to progress this Modification into the Assessment Procedure and forming a quorate Workgroup.

Workgroup membership

Elexon is seeking Workgroup members with expertise in:

- Private distribution networks
- Third Party Access
- Complex site processes and metering operations
- Settlement

Timetable

Proposed Progression Timetable	
Event	Date
Present Initial Written Assessment to Panel	8 June 2023
Workgroup Meeting 1	W/C 19 or 26 June or 3 July 2023
Workgroup 2 – 5	July 2023 – October 2023
Assessment Procedure Consultation (15 WDs)	16 October 2023 – 3 November 2023
Workgroup Meeting 6	W/C 13 November 2023
Present Assessment Report to Panel	14 December 2023
Report Phase Consultation (12 WDs)	18 December 2023 – 5 January 2024
Present Draft Modification Report to Panel – late paper and subject to RC responses	11 January 2024
Issue Final Modification Report to Authority	17 January 2024

8 Recommendations

We invite the Panel to:

- **DESIGNATE** Emergent Energy to raise the attached Modification Proposal;
- **AGREE** that this Modification progresses to the Assessment Procedure;
- **AGREE** the proposed Assessment Procedure timetable;
- **AGREE** the proposed membership for the Modification Workgroup; and
- **AGREE** the Workgroup's Terms of Reference.

Designation Request Form - BSCP40/07	Request Number *(mandatory by BSCCo)*

Title of proposed Modification

On-Site Aggregation as a method to facilitate Third Party Access

Rationale for Requesting Designation

The proposed On-Site Aggregation method for facilitating Third Party Access on private networks was designed and developed by Emergent Energy as a solution to issues that we identified with the practical implementation of difference metering (i.e. a BSC procedure for facilitating Third Party Access) in residential settings.

The method forms the basis of the BSC Sandbox derogation that was awarded to Emergent in September 2021[1]. This has enabled us to trial the method and generate evidence relating to the technical workability of the solution. Through the delivery of a number of trial schemes, we now have the evidence we need to progress with a Modification.

The initial period for which the Sandbox derogations are in place ends on Sep 21 2023. At this point, if a Modification has been raised, the Sandbox trial period will be extended by a year, allowing time for the Modification to be assessed, approved and implemented. To avoid a gap between the end of the trial period and the implementation of the Modification, which would force us to discontinue our current trial schemes, we wish to raise the Modification now.

We are therefore requesting designation to raise a Modification to make an enduring change to the BSC which takes into account the successes and learnings from the Sandbox trial. We are best placed to raise this Modification as we hold unique data and insights into questions and issues related to the practical implementation of the proposed solution obtained during its trial.

We also have unparalleled knowledge into the reasons why this new solution is required for facilitating Third Party Access, given our substantial experience in exploring and testing alternative methods on live projects, undertaken in close liaison with Elexon and Ofgem prior to the award of the Sandbox derogation.

This includes attempts to apply the established industry procedure of difference metering and a novel 'feed-through' metering arrangement based on allowable configurations outlined in the complex site arrangements. Also explored was the option to include provisions within the P379 'Multiple Supplier through Meter Splitting' Modification that was proposed but ultimately withdrawn by the Proposer.

Within licensing regulation, responsibility for enabling Third Party Access lies with private network operators. The On-Site Aggregation method's design is significant for extending this responsibility such that private network operators have a role to play in delivering the arrangements required to support Third Party Access within the BSC.

In doing so, it reduces the burden of responsibility on third party supplied customers. Under the current arrangements these customers must identify a Supplier willing to establish bespoke arrangements for their supply, whereby the Third Party Supplier will use the same meter agents as the relevant Boundary Point Supplier, and settle the supply half hourly. Under the proposed solution third party supplied customers can sign up to any standard tariff offered by a relevant Supplier in the usual way, thus ensuring they are in no way penalised (whether due to hassle they incur, or disadvantageous commercial tariff terms) because their supply happens to be connected to a private network.

Moreover, it also reduces the burden of delivery responsibility on BSC accredited parties (i.e. the Third Party Supplier Agents), by tangentially introducing them for private network operators, who are currently not BSC Parties. Emergent Energy being one such private network operator.

[1] https://www.ofgem.gov.uk/publications/regulatory-sandbox-repository

The central role of private network operators in the delivery of the solution is reflected in the design of the derogations that were awarded to Emergent via the Sandbox scheme. While the derogations themselves apply to BSC parties, the party who controls the application of the derogations is Emergent. The derogations apply to BSC parties who are notified to Elexon/Ofgem by Emergent as participants in an Emergent scheme.

Given this context, we believe Emergent is the party best placed to raise and progress a Modification for the On-Site Aggregation methodology.

There is no strong rationale or incentive for burdening a BSC party to raise the Modification, albeit the Modification will enable any BSC Party to make use of these new arrangements. Overall, it will be far more efficient for Emergent to raise the Modification.

Reasons why Applicant has an interest in the Code/issue

Emergent specifically is motivated to address the issue because it negatively impacts our business. In developing and operating private network schemes, our goal is to offer customers benefits versus competing offers in terms of price and service. In so doing, we believe it essential that our customers are free to choose to be supplied by the private network or by an alternative supplier of their choice, and we do not in any way want to benefit purely from customers being 'tied in' to our schemes and unable to switch away.

From a market perspective, difference metering has issues which impact customers on private networks by preventing them from choosing to be supplied by a Third Party Supplier. This is an important issue of consumer harm that must be addressed. Emergent Energy is primarily focused on the social housing sector. This issue is felt most prominently in new build schemes which is the main focus for private network development currently in the market. Notably, customers move into a home which is by default supplied by the private network, and face barriers to switch away.

In retrofit settings, a different challenge is presented. If a private network is built for existing homes, for example within a block of flats, and not all of the residents wish to sign up, then as well as Settlement being inaccurate, the private network incurs a loss. This results in a stark choice for a private network developer and/or the building owner: force all of the residents to sign up or abandon the project.

Thus the absence of the proposed Modification has a detrimental impact on Emergent and our clients. Specifically, it restricts our ability to develop schemes in existing homes which may benefit end customers and the energy industry as a whole, due to the decarbonisation and system flexibility outcomes our schemes can deliver, as well as our own commercial ambitions.

Additional Details which may support the application *(Optional by originator)*

Further information and documentation relating to the derogation awarded to Emergent Energy, including the Ofgem approval letter, can be found here.

Proposer Name

Reg Platt

Organisation

Emergent Energy Systems Ltd.

Email Address

reg.platt@emergent.energy

Telephone Number
07877 684312
Date: 31 May 2023

BSC Modification Proposal Form	At what stage is this document in the process?
# Modification Title: On-Site Aggregation as a method to facilitate Third Party Access	01 Modification 02 Workgroup Report 03 Draft Modification Report 04 Final Modification Report

Purpose of Modification:

This Modification seeks to establish a more cost effective and efficient method for delivering Third Party Access on Private Wire Networks that include domestic and small business customers. It does so by enabling aggregated meter data from Private Wire Network sub-meters to be submitted into Settlement in lieu of data from Settlement Meters installed at the boundary between Private Wire Networks and local Distribution Systems.

Is this Modification likely to impact any of the European Electricity Balancing Guideline (EBGL) Article 18 Terms and Conditions held within the BSC?

☐ Yes ☒ No

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 by the Proposer to the BSC Panel on 8 June 2023. The Panel will consider the Proposer's recommendation and determine how best to progress the Modification.

High Impact:

None

Medium Impact:

1. Suppliers
2. Generators
3. Half-Hourly Data Collectors (HHDCs)
4. Half-Hourly Meter Operator Agents (HHMOAs)

Low Impact:

5. Licence Distribution System Operators (LDSOs)

Contents

Timetable

The Proposer recommends the following timetable:

Initial consideration by Panel	8 June 2023
Initial consideration by Workgroup	W/C 19 or 26 June or 3 July 2023
Workgroup 2 – 5	July 2023 – October 2023
Assessment Procedure Consultation	16 October - 03 November 2023
Workgroup 6	W/C 13 November 2023
Workgroup Report presented to Panel	14 December 2023
Report Phase Consultation	18 December 2023 – 5 January 2024
Draft Modification Report presented to Panel	11 January 2024
Final Modification Report submitted to Authority	17 January 2024

Any questions?

Contact:
Kayleigh Neal

kayleigh.neal@elexon.co.uk

0207 380 4175

Proposer:
Reg Platt

Proposer's representative:
N/A

reg.platt@emergent.energy

07877 684312

1 Why Change?

What is the issue?

Customers on private wire networks (PWN; also known as private distribution networks) may be supplied by a Supplier (assumed to be license exempt) associated with the private network operator (PNO), but also have the right to switch their supply to any other Supplier. Under the Electricity and Gas (Internal Markets) Regulations 2011 the PNO has an obligation to facilitate this access to Third Party Suppliers (TPSs).

Where Third Party Supply occurs on a PWN, Settlement issues are created because the import/export volumes for any Third Party Supplied Customer flow across the Boundary Point to the PWN. Consequently, without corrective action the TPS volumes will be double counted in settlement (i.e. once at a Third Party Supplied Customer's meter, and once at the Boundary Point Meter to the PWN).

To facilitate Third Party Supply (while ensuring the accuracy of Settlement), BSC processes are required that appropriately allocate volumes to all Suppliers associated with a PWN. The BSC can currently facilitate this allocation via three methods - difference metering, shared metering, and full settlement options – but each are unsatisfactory when applied to PWNs that include domestic and small business customers.

Issues with difference metering:

Differencing arrangements involve all TPSs on a PWN entering an agreement with the Supplier Agents of the Boundary Point Supplier, such that the Agents can subtract half hourly volumes for Third Party Supplied Customers from the Half Hourly Boundary Point Meter volumes, thus achieving accurate allocations for the Boundary Point Meter and avoiding double-counting of volumes within Settlement.

The problems with this approach stem from the significant operational requirements it places on TPS to facilitate the scheme. These are:

1. To participate in a difference metering arrangement, a TPS on a PWN must appoint the same Half Hourly Meter Operator (HHMOA) and Half Hourly Data Collector (HHDC) as the BPS. This requires co-ordination between the TPS and BPS in order for the TPS to know the identity of the relevant parties. It can also mean the TPS having to establish new contractual arrangements with a HHMOA and HHDC whom they have not previously appointed.
2. For accurate settlement volumes to be calculated for a PWN, allocations among Suppliers must be done on a half hourly basis. In the case of difference metering, this means that a TPS must settle their PWN Customers on a half hourly basis. Today, half hourly Settlement of domestic and small business Customers is not mandated or standard practise. Therefore the TPSs must establish voluntary, non-standard arrangements for difference metering whereby they settle their PWN Customers half hourly.

Two issues arise from placing these operational requirements on TPS in order to facilitate difference metering:

1. The solution is operationally onerous and inefficient. Consider a PWN connected to 100 domestic properties, where fifty properties are supplied by a license exempt Supplier associated with the PNO, while the remaining fifty properties are supplied by twenty different TPSs. All twenty of those TPS must establish the bespoke arrangements required to facilitate the scheme. And for any new PWN scheme, an entirely new set of arrangements may be required.
2. Under the Electricity and Gas (Internal Markets) Regulations 2011, responsibility for finding a TPS who will participate in the differencing arrangements falls with the Third Party Supplied

Customer. In practise, this is extremely hard for an individual domestic or small business Customer to organise. There is little commercial incentive for a Supplier to proactively support these Customers by establishing the bespoke arrangements that are required, given the relatively low electricity supply volumes that would result. In practise, therefore, domestic and small business customers face substantial barriers to being able to freely switch to a Supplier of their choice, as is their legal right,

As is described below, the proposed 'On-site aggregation' solution entirely eliminates the existing operational requirements on TPSs. In doing so the proposed solution is far more efficient and significantly reduces switching barriers to domestic and small business Customers on PWNs.

Issues with shared metering:

Under shared metering, the operational requirements placed upon TPSs are even more onerous than those under difference metering.

In difference metering Third Party Suppliers are settled against volumes read at the meters of Third Party Supplied Customers, and these volumes are subtracted from the Boundary Point meter volumes to arrive at accurate Settlement volumes for the BPS.

By contrast, in shared metering the Boundary Point meter volumes are shared between the BPS and TPSs on a scheme, potentially through use of volumes from non-Settlement sub-meters used for the purposes of metering and billing Third Party Supplied Customers.

While the difference is subtle, the result is that all TPSs on a scheme must enter into a contract with the BPS that establishes how a scheme will be operated and how volumes will be allocated, including how data from sub-meters will be retrieved and utilised. Given the number of potential TPSs on any single scheme, the arrangements involved for accurately allocating volumes can be highly complicated.

As a result, the two main problems described above for difference metering that result from placing operational requirements on TPSs (i.e. operational inefficiency, and the requirements acting as a barrier to domestic and small business customers on PWNs being able to freely switch) are even more pronounced for shared metering schemes.

Issues with full Settlement metering:

Under the Full Settlement scenario, Settlement meters are installed for all consumption and generation points on a PWN, with each of those metering points treated as if they were connected to the total system, and the PWN treated as an 'Associated Distribution Network'.

The approach means that volumes from on-site generation and consumption cannot be 'netted' behind the Boundary Point meter, as is the case on a PWN. This results in a loss of benefits to Customers who would like to be supplied with electricity from on-site renewables connected to a PWN. It also eliminates the role for a PNO and/or a license exempt supplier associated with the PNO who may wish to offer this benefit to Customers.

As a consequence, the approach is not attractive to implement for either Customers or PNOs and difference metering is the default option for PWNs where Third Party Access is required, bringing with it all the various issues described above.

Desired outcomes

To establish a new method for facilitating Third Party Supply on Private Wire Networks to which domestic and small business Customers (i.e. sub-100kW Customers) are connected, which can be used instead of difference metering.

The proposed solution does not require TPSs to actively participate in the operation of a scheme (unlike difference metering where, for example, TPSs must set up arrangements with Supplier Agents it does not necessarily have contracts with) and is expected to be delivered by PNOs working in collaboration with the BPS and the appointed Agents of the BPS.

In doing so, the proposed solution intends to establish a solution which, versus difference metering, is both more operationally efficient, and results in better outcomes for Customers who may wish to switch between a license exempt supplier associated with a PNO and a potential TPS, and vice versa.

2 Solution

Proposed Solution

General solution:

As part of the day to day operation of a PWN, each generation and demand point on the PWN will generally be metered by a PNO (or an associate of the PNO such as a license exempt supplier) using non-Settlement ('sub') metering for the purpose of customer billing.

Under the proposed Modification, half hourly data from these PWN meters will be aggregated to determine the net import and export volumes for the PWN as a whole. In lieu of readings from the PWN's Boundary Point Meter (i.e. the meter located where the PWN meets the DNO Network), these calculated volumes will be transmitted to and used by the BPS for the purpose of billing the PNO for imports and exports to the PWN, and within Settlement.

The solution will avoid the double counting of Settlement volumes that can result from Third Party Supply arrangements being established on PWNs. The on-site aggregation methodology and associated BSC procedures will ensure that Settlement volumes for the PWN are accurate. Meanwhile volumes for any Third Party Supplied Customers on the PWN will be settled directly by the TPS, half hourly or non-half hourly as per the discretion of the TPS.

By requiring no operational interaction between TPSs and the BPS or BPS' Agents to achieve accurate Settlement outcomes, the proposed solution avoids the issues with difference metering that have been described above.

On-site aggregation methodology:

The Modification will introduce a new methodology for processing meter data in order to determine accurate Settlement volumes for PWNs with Third Party Supply, based on the aggregation of data from PWN sub-meters.

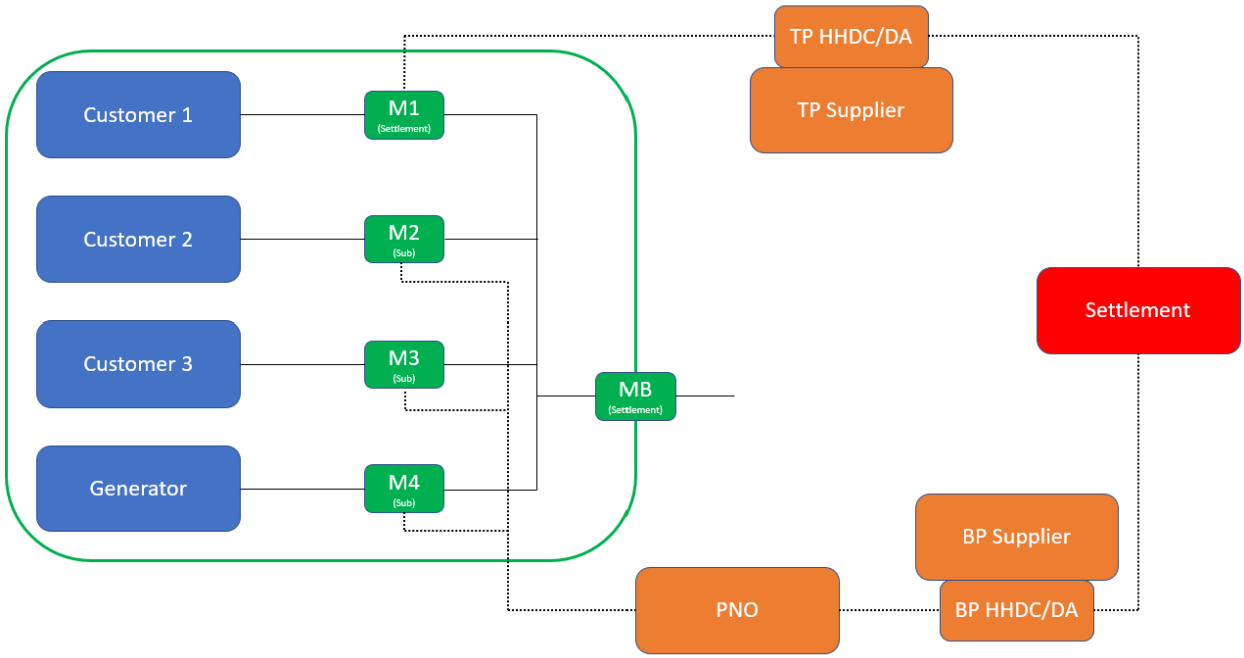
The arrangement is simple in principle and has been demonstrated to be effective at delivering identical Settlement outcomes to sites where difference metering is installed via trials undertaken by Emergent Energy under a BSC Sandbox scheme that commenced in September 2021. Evidence from these trials will be presented as part of the Workgroup process for progressing the Modification.

The below description and schematic illustrates how the scheme will work:

- Customer 1 is supplied by a Third Party Supplier. The supplied volumes are metered by Settlement meter M1, and settled in the usual way.
- Customers 2 and 3 are supplied by the PNO (or an entity associated with the PNO), who uses sub-meters (non-Settlement) M2 and M3 for the purposes of billing the Customers. The PNO supplies electricity from an on-site generation source (e.g. solar PV) to Customers 2 and 3, as

well as electricity imported from the grid. The generation (export) volumes from the on-site generation source are metered by sub-meter (non-Settlement) M4.

- The import meter reading (as metered at MB) to the PWN as a whole includes the volumes for Customer 1, as well as the import volumes that the PNO supplies to Customers 2 and 3. If these readings were submitted into Settlement, Customer 1's volumes would be double counted and Settlement would be inaccurate.
- Instead, (in this example) the PNO aggregates the data from sub-meters M2, M3, M4 to produce a net import or generation (export) figure in every half hourly period. This aggregated, net figure is then submitted into Settlement in place of the readings from MB.



Specific operational details:

To ensure the on-site aggregation methodology results in accurate Settlement outcomes for PWNs, a number of procedural arrangements for the solution will be established. To minimise costs required to establish the solution through alterations to the BSC or BSC party systems, the proposed arrangements make use of existing BSC arrangements where possible:

1. The PWN sub-meters will be required to conform to CoP 10 standards.
2. Responsibility for retrieving, aggregating and submitting into Settlement data from the PWN sub-meters will fall to the HHDC who is appointed to the Boundary Point Meter by the BPS (albeit the HHDC may, at their discretion, choose to coordinate with a PNO to fulfil the requirements, so long as the operating standards required of HHDCs are maintained). The usual requirements on HHDC activities (e.g. in relation to data validation and estimation) will apply.
3. Responsibility for identifying faults on the PWN sub-meters and for fixing them will fall to the HHMOA who is appointed to the Boundary Point Meter by the BPS (albeit the HHMOA may, at their discretion, choose to coordinate with a PNO to fulfil the requirements, so long as the operating standards required of HHMOAs are maintained). The usual requirements on HHMOA activities (e.g. in relation to faults and installation) will apply.
4. When a scheme is established a test akin to a Complex Site Validation Test will be required, to ensure the aggregation methodology is being applied correctly. This will involve the HHDC and HHMOA on a scheme coordinating to establish the data integrity of individual meters involved in a

scheme, and the overall aggregation methodology that is being applied to these meters. (See further details below)

5. The solution will be restricted to Third Party Supplied metering systems on PWNs that are sub-100kW capacity. Such meters with greater than 100kW capacity will be required to participate in a scheme through difference metering.
6. Metering System Identifiers (MSIDs; also known as Metering System Administration Numbers i.e. MPANs) of Customers on a PWN who are supplied by the PNO (or an associate) will be required to be de-energised and not logically disconnected. While logical disconnection is typically applied in this scenario today, this results in these Customers having to request a new MPAN if they wish to switch to a TPS, thus acting as a barrier to switching. By leaving the MPAN in a de-energised state, the MPAN can simply be reinstated when the Customer switches to a TPS.

For consideration by a Code Modification Workgroup:

In developing the proposed solution, we have considered and rejected two potential operational requirements. A Workgroup established to discuss the Modification may wish to discuss these options:

1. Unmetered loads test

As above, we have proposed that for sites where On-Site Aggregation is in place, the relevant parties will be required to fulfil a test akin to a Complex Site Validation Test, whereby the relevant HHDC and HHMOA will coordinate to establish the data integrity of individual meters involved in a scheme, and the overall aggregation methodology that is being applied to these meters.

Elexon has raised that this approach will fail to capture unmetered loads that may exist on a PWN, and that this creates a difference in outcomes between the proposed solution and difference metering. Indeed, while the stated purpose of difference metering is to facilitate third party supply on PWNs, the methodology does also indirectly capture any unmetered loads on PWNs (these are captured within the loads that are derived for the Boundary Point Meter).

In recognition of this gap, as part of the Sandbox award that enabled Emergent to demonstrate the solution live in market, Emergent was required to undertake a test (a ‘proving test’) to demonstrate that unmetered loads did not exist on schemes that were enrolled in the demonstration.

Our view is that this ‘unmetered loads’ test should not be an enduring requirement of the solution, for four reasons:

i. While difference metering offers the theoretical benefit of capturing unmetered loads on PWNs, it does not occur in practise because, for reasons outlined above, difference metering is not an effective solution for PNOs or PNO customers. Therefore if an unmetered load is present on an existing network, there is little reason for a PNO scheme to be established that would see difference metering applied and the unmetered load captured.
ii. The industry should not be relying upon difference metering, or an alternative solution aimed at facilitating Third Party Supply on PWNs, to capture unmetered loads. There are standard industry procedures in place for minimising and addressing unmetered loads. The existence or otherwise of such loads on a network points to the failure of these other processes, rather than having direct relevance to difference metering or the proposed alternative. If the industry is concerned about unmetered loads, it should re-examine why the existing processes for managing these loads are ineffective.
iii. Through trials delivered under the Sandbox scheme we have identified that the costs involved in undertaking an unmetered load test on an existing PWN site with Third Party Supply, and disruption caused to Customers, can be very high. This arises because a PNO does not have direct access to meter data from the Third Party Supplied Customers. On larger schemes the

only way to accurately meter Third Party Supplied Customer loads is to install new meter infrastructure, which is cost prohibitive. Consequently, to fulfil the requirements of an unmetered load test, the only alternative is to temporarily disconnect the electrical supply to these Customers while the test is undertaken, which is an unacceptable level of disruption. (The details on the trials carried out under the Sandbox scheme will be presented to the Workgroup).

iv. The fact that difference metering happens to capture unmetered loads on a site is unrelated to the relative superiority of the proposed on-site aggregation methodology Vs difference metering for delivering Third Party Supply on PWNs involving domestic and small business customers.

2. Requirement for Elexon to maintain a central database of sites where on-site aggregation is applied

We do not believe this is necessary but the Workgroup may wish to consider pros and cons. Issues to be considered include: what data should be included in any notification to Elexon and, do the benefits of maintaining a central register outweigh the costs of creating and maintaining this central register? In deliberating these questions, consideration should be given to commercial confidentiality issues as well as operational issues. Particularly since the goal of the Modification is to enable customers to more easily switch between being supplied by a PNO and a TPS, which may result in scheme details needing to be regularly updated.

Benefits

PWNs are set to play an increasingly significant role in the domestic and small non-domestic electricity market. In doing so they offer the potential to unlock significant value to Customers and the industry at large. However, without action to improve the operation of PWNs, growth in their use also poses risks to Customers. Proactive market reform, including the proposed Modification, is necessary to both ensure quality of outcomes for Customers on PWNs, while unlocking the value to Customers and the industry that the approach offers.

Growing market interest in the potential to use PWNs in the domestic and small non-domestic sectors is primarily because PWNs provide a mechanism for locally generated solar electricity to be sold to these Customers. This can both improve financial returns for solar PV installations that must be installed as part of the transition to net zero, and widen access to solar PV to Customers who cannot have an installation on their rooftop, which can lead to lower bills.

Integrated with other decarbonisation technologies including heat pumps, electric vehicle chargers, and storage, PWNs further hold the potential to reduce capacity strains on distribution networks and unlock valuable flexibility for the overall energy system.

Today a primary focus of market activity is new build housing, where PWNs can be established at the point of construction. Typically, in such schemes Customers who move into the newly built homes are by default a Customer of the PNO (or a license exempt supplier associated with the PNO). If the proposed Modification is not implemented, it will be to the detriment of these Customers.

The current difference metering arrangements place on Customers the responsibility for finding a TPS who will enter into the bespoke arrangements that are required. In practise this is extremely hard for domestic and small non-domestic Customers to achieve, since they can only offer a potential TPS a small electrical supply load for the effort involved. As a result, while difference metering theoretically provides a means for these Customers to switch, in practise they can essentially be locked into the default supply arrangements with the PNO and unable to switch to a different Supplier, as is their legal right.

Another group of Customers who will be worse off without implementation of the proposed Modification are Customers who live in blocks of flats. Such Customers have traditionally not been able to access the benefits of solar PV generated on-site due to restrictive metering and wiring arrangements. PWNs enable the value of solar PV to be shared between the residents in a block of flats. However, the challenges of establishing differencing arrangements on PWNs reduce the attractiveness of such schemes to both PNOs and Customers. Without the proposed Modification, Customers who live in blocks of flats will continue to struggle to access the benefits of solar PV.

The proposed Modification will make it easier for domestic and small non-domestic customers who are connected to PWNs to be supplied by TPSs if they wish. At the same time, it will make it easier for Suppliers to sign up domestic and small non-domestic customers who are currently being supplied by an exempt supplier over a PWN. This will create greater competition and lead to improved outcomes for Customers and the market as a whole.

The proposed Modification will also improve overall industry efficiency, because it is a more efficient mechanism than difference metering for facilitating Third Party Supply. This is because it removes all operational requirements on Third Party Suppliers. Instead, the required activities are undertaken by the Boundary Point Supplier and the Boundary Point Supplier Agents, working in coordination with PNOs, who are already accessing and processing the relevant data as part of their day to day activity.

Taken together, the Modification holds the potential to deliver substantial benefits to consumers and the industry at large, with minimal impact on the current operation of the electricity system and with minimal changes to the BSC.

3 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
© 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	**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]	**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

BSC Objective (c) is better facilitated because the proposed Modification improves access to Third Party Suppliers for Customers on private networks, thus supporting increased competition between Suppliers. At the same time the proposed Modification improves the overall viability of PWNs, thus increasing market competition from PNOs and suppliers associated with PNOs.

BSC Objective (d) is better facilitated by the proposed Modification because the facilitation of Third Party Supply arrangements on PWNs including domestic and small business customers will no longer require operational activities to be undertaken by Third Party Suppliers. Instead, all required activities can be undertaken by the Boundary Point Supplier and the Boundary Point Supplier Agents, working in coordination with PNOs, who are already accessing and processing the relevant data as part of their day to day activity.

BSC Objective (e) is better facilitated because, due to a relevant legally binding decision of the European Commission, domestic and small business Customers on PWNs have the legal right to switch supplier but as things stand this right is not being effectively facilitated by the BSC. While difference metering theoretically enables such switching to occur, because it is up to the Customer to find a Supplier who will establish the bespoke arrangements necessary for a Third Party Supply arrangement, in practise these Customer can be prevented from being able to switch. The legal right for Customers to access a Third Party Supply arrangement was established in the UK via Schedule 2ZA to the Electricity Act 1989, which implemented the position as clarified in the EU's Third Package of internal EU electricity market measures in Directive 2009/72/EC (Electricity Directive).

4 Potential Impacts

Impacts on Core Industry Documents

Impacted Core Industry Documents			
☐Ancillary Services Document	☐Connection and Use of System Code	☐Data Transfer Services Agreement	☐Use of Interconnector Agreement
☒Retail Energy Code	☐ Transmission License	☐System Operator Transmission Owner Code	☐Supplemental Agreements
☐Distribution Code	☐Grid Code	☐ Other (please specify)	

This Modification is proposing to place a requirement on the SVA MOA appointed by the "Boundary Point Supplier" to rectify any faults found with the sub Meters involved in the on-site aggregation. As SVA MOAs are governed under the Retail Energy Code we believe that this SVA HHMOA specific requirement will need to be delivered as a REC Change.

Impacts on BSC Systems

Impacted Systems				
☐CRA	☐CDCA	☐PARMS	☐SAA	☐BMRS
☐EAC/AA	☐FAA	☐TAAMT	☐NHHDA	☐SVAA
☐ECVAA	☐ECVAA Web Service	☐Elexon Portal	☐Other (Please specify)	

We do not expect the solution to impact on BSC systems. This Modification will only require changes to BSC documentation.

Impacts on BSC Parties

Impacted Parties			
☒Supplier	☐Interconnector User	☐Non Physical Trader	☒Generator
☒Licensed Distribution System Operator	☐National Electricity Transmission System Operator	☐Virtual Lead Party	☐Other (Please specify)

The proposed Modification places no mandatory obligations on industry participants. Participation in implementation of the solution is entirely voluntary.

At the individual party level, Suppliers who are acting as Third Party Suppliers on PWNs will no longer need to participate in difference metering arrangements. Suppliers who supply the boundary point meter of a PWN will be able to instruct their Agents to facilitate implementation of an on-site aggregation solution on the scheme.

LDSOs will need to be aware if an on-site aggregation solution is applied to particular site, as this may impact the DUOS charges levied on Suppliers to the site. The specific charging methodology LDSOs should apply in the event of a scheme being in place is the subject of a second Sandbox trial by Emergent, which is expected to lead to a DCUSA Modification being raised in 2024.

If an independent Generator partners with a PNO offering on site aggregation they will need to understand the proposed methodology and how it interacts with any other subsidies they may receive.

Impacts on consumers and the environment

Impact of the Modification on consumer benefit areas:	
Consumer benefit area	Identified impact
Improved safety and reliability	Neutral
Lower bills than would otherwise be the case The proposed change will result in lower bills for Customers on PWNs who wish to be supplied by TPS because the TPS will no longer need to establish bespoke arrangements for the Customers. It will also result in growth in PWNs where on-site renewables could be used to lower bills for Customers who do want to be supplied by a PNO or affiliated party.	**Positive**
Reduced environmental damage It will support growth in the use of PWNs to cost-effectively deploy decarbonisation technologies for housing and small business customers. Increased prevalence of PWNs involving storage and other means of demand control will also deliver reductions in grid capacity constraints and unlock value flexibility, supporting the overall transition to a net zero emission electricity grid.	**Positive**
Improved quality of service It will result in improved ease of switching for Customers on PWNs.	**Positive**
Benefits for society as a whole. It will result in benefits to UK Plc by supporting innovation in the delivery of statutory net zero targets, creating jobs.	**Positive**

Legal Text Changes

This Modification will impact BSC Section L 'Metering' and BSC Procedure (BSCP) 502 'Half Hourly Data Collection for SVA Metering Systems Registered in SMRS'.

5 Governance

Self-Governance

☒ **Not Self-Governance –** A Modification that, if implemented:	
☐ materially impacts the Code's governance or modification procedures	☐ materially impacts sustainable development, safety or security of supply, or management of market or network emergencies
☒ materially impacts competition	☒ materially impacts existing or future electricity consumers
☐ materially impacts the operation of national electricity Transmission System	☐ is likely to discriminate between different classes of Parties
☐ involves any amendments to the EBGL Article 18 Terms and Conditions related to Balancing; except to the extent required to correct an error or as a result of a factual change	
☐ **Self-Governance –** A Modification that, if implemented:	
Does not materially impact on any of the Self-Governance criteria provided above	

This Modification Proposal should not be treated as Self-Governance. It materially impacts competition by promoting increased competition between Suppliers as described above. It also materially impacts existing or future electricity consumers by providing a more efficient route for customers on PWNs to switch, and for providing a more effective route for customers to participate in renewable energy schemes on PWNs.

Progression route

☒ **Submit to assessment by a Workgroup** –:A Modification Proposal which:	
does not meet any criteria to progress via any other route.	
☐ **Direct to Report Phase** – A Modification Proposal whose solution is typically:	
☐ of a minor or inconsequential nature	☐ deemed self-evident
☐ **Fast Track Self-Governance** – A Modification Proposal which meets the Self-Governance Criteria and:	
is required to correct an error in the Code as a result of a factual change including but not limited to:	
☐ updating names or addresses listed in the Code	☐ correcting minor typographical errors
☐ correcting formatting and consistency errors, such as paragraph numbering	☐ updating out of date references to other documents or paragraphs
☐ **Urgent –** A Modification Proposal which is linked to an imminent issue or current issue that if not urgently addressed may cause:	
☐ a significant commercial impact on Parties, Consumers or stakeholder(s)	☐ a Party to be in breach of any relevant legal requirements.
☐ a significant impact on the safety and security of the electricity and/or gas systems	

This Modification should be assessed by an industry Workgroup to ensure that the most effective solution is designed. It does not meet the criteria to progress via any other route.

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

None identified. Elexon will request that Ofgem treat this Modification as a SCR exempt Modification on 1 June 2023.

Does this Modification impact any of the EBGL Article 18 Terms and Conditions held within the BSC?

We believe it is unlikely that this Modification will impact any of the EBGL Article 18 Terms and Conditions held within the BSC, but will assess and verify this with the industry Workgroup as part of its assessment phase.

Implementation approach

The timings for implementation of this change are related to the timings for the Sandbox trial under which Emergent has been able to test and demonstrate the proposed solution. Assuming the proposed Modification is raised before 26 September 2023, the trial can continue until no later than 26 September 2024, while this Modification is processed.

To ensure seamless transition from the temporary provisions permitted under the Sandbox to the provisions expected to be introduced for industry by this code modification, if Ofgem reaches a decision in time for the June 2024 standard BSC release, we recommend that this Modification be enacted then. If a decision is not reached in time for the June 2024 standard BSC release, we recommend that this Modification is implemented 5WDs following Ofgem's decision.

ELEXON

To:

Elexon Limited as the Balancing
and Settlement Code (the "BSC")
Company ("BSCCo")

350 Euston Rd
London
NW1 3AW

31 May 2023

Application to be designated by the Panel as a Third Party Proposer pursuant to Section F2.1.A.1 of the Balancing and Settlement Code

By writing this letter, and submitting a Designation Request Form and a draft Modification Proposal Form we are applying to be designated as a Third Party Proposer under the Section F (Modification Procedures) of the BSC.

Unless otherwise stated, or the context otherwise requires, any capitalised term in this letter shall have the meaning given to it in the BSC.

We acknowledge that we have obtained a copy of the latest versions of Section B (The Panel), Section C (BSCCo and its Subsidiaries), Section F and Section H (General) and Section X-1 (General Glossary) of the BSC as well as BSC Procedure 40 from the BSC Website.

In consideration of BSCCo and/or the Panel considering our application to be designated as a Third Party Proposer, we hereby agree with each of you that we shall be bound by:

a) the terms of Section B1, B3 and B4.6 (the Panel); Section C1 and C3 (BSCCo and its Subsidiaries), Section F (Modification Procedures) and Section H7.1, H8 and H9 (General) of the BSC; and
b) the terms of BSC Procedure 40, for the purposes of our application to be designated as a Third Party Proposer and the consideration of our modification proposal under the Modification Procedures as if we were a party to the BSC for the purposes of those Sections and BSC Procedures.

We acknowledge and agree that:

a) during our application to be appointed as a Third Party Proposer the provisions of paragraph 2.1A of Section F (Modification Procedures) of the BSC provide a right of appeal to the Authority should the Panel reject our application and that should our application be rejected our sole and exclusive remedy will be to refer the matter for determination to the Authority in accordance with that paragraph and we accept that its determination will be final, conclusive and binding; and

b) we will not make any claim in damages or any other claim of a financial nature against Elexon Limited or any Panel Member and we hereby waive (to the fullest extent permitted by law) any such claim against Elexon Limited or any Panel Member and release each from any such liability in respect of any breach by Elexon Limited or the Panel of any provision of the Code or in tort (including negligence) or otherwise.

Nothing in this letter shall exclude or limit liability for death or personal injury resulting from negligence by Elexon Limited or any Panel Member or resulting from fraudulent misrepresentation.

This letter shall expire following the later of:

a) the final determination (whether by the Panel or the Authority) that we have not been designated as a Third Party Proposer;

b) the withdrawal of the Modification Proposal proposed by us; or

c) the final determination (whether by the Panel or the Authority) as to whether the Modification Proposal proposed by us should be approved or rejected.

This letter shall be governed by, and construed in all respects in accordance with, the laws of England and Wales.

Yours faithfully,

……..

Signed by Richard (Reg) Platt being a Director and signing this letter for and on behalf of Emergent Energy Systems Ltd.