Assessment Report

P455 '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.

The P455 Workgroup initially recommends **approval** of P455

The P455 Workgroup **does not** believe P455 impacts the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC. Elexon, however, believe that P455 **does** require an EBGL consultation.

This Modification is expected to impact:

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

ELEXON

Phase

- Initial Written Assessment
- Definition Procedure
- Assessment Procedure
- Report Phase
- Implementation

Contents

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 the P455 Workgroup's Assessment Report to the BSC Panel. Elexon will present this report to the Panel at its meeting on 14 March 2024. The Panel will consider the Workgroup's recommendations, and will agree an initial view on whether this change should be made. It will then consult on this view before making its final recommendation to the Authority on 11 April 2024.

There are five parts to this document:

- This is the main document. It provides details of the solution, impacts, costs, benefits/drawbacks and proposed implementation approach. It also summarises the Workgroup's key views on the areas set by the Panel in its Terms of Reference, and contains details of the Workgroup's membership and full Terms of Reference.
- Attachment A contains the P455 Proposal Form.
- Attachment B contains the draft redlined changes to the BSC for P455.
- Attachment C contains the draft redlined changes to the Code Subsidiary Documents (CSDs) for P455.
- Attachment D contains the full responses received to the Workgroup's Assessment Procedure Consultation.

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

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Not sure where to start?

We suggest reading the following sections:

- Have 5 minutes? Read section 1
- Have 15 minutes? Read sections 1 and 7
- Have 30 minutes? Read all except section 6
- Have longer? Read all sections and the annexes and attachments.

1 Summary

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 full Settlement metering, 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 (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 customers are connected. This methodology can be used instead of difference metering, but requires the BSC to allow aggregated meter data from meters installed on private networks relating to customers not opting for third party supply to be submitted into Settlement (in lieu of data from Settlement meters installed at the Boundary Point).

The proposed solution was originally limited to connections under the onsite Aggregation method with metering systems that are sub 100kW capacity. This has since been adjusted to sites where aggregated sub meters that are Import only (i.e. demand loads and not generation loads) are limited to sub100kW, to reflect what was originally intended.

Impacts & Costs

We expect this Modification to impact BSCCo, Suppliers, Generators, LDSOs, HHDCs, HHMOAs and the Retail Energy Code (REC).

Costs Estimates			
Organisation	Implementation (£)	On-going (£)	Impacts
Elexon	<£1k	0	Document only, will require management of new central database with no additional cost
Industry	Low	Low	Systems and processes
Total	<£100k	Low	

Impact on EBGL Article 18

The Workgroup and respondents to the Assessment Consultation were not able to identify any impacts on the EBGL Article 18 Terms and Conditions, as the redlining does not impact upon the intent of EBGL Article 18 requirements for a responsible balancing party and focus instead on aggregation of Meters.

However, Elexon have conducted a further review and consider that the changes to Section 2 of BSC Section K require an EBGL consultation for one month.

Implementation

The Workgroup 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.

This Modification needs to be implemented prior to the end of the Sandbox trial and the Derogation Period which ends no later than 25 September 2024.

Recommendation

The P455 Workgroup by majority agreed that P455 better facilitates Applicable BSC Objectives (c) and (e) compared to the existing baseline and should **be approved**.

While the Workgroup and respondents to the Assessment Consultation were not able to identify any impacts on the EBGL Article 18 Terms and Conditions, Elexon conducted a review and consider that the changes to Section 2 of BSC Section K require an EBGL consultation for one month.

The members of the P455 Workgroup recommend that the P455 Modification **should be submitted to the Authority for decision.**

What is the issue?

For ease of reference, in this document the term Private Network Operator (PNO) is used to refer both to a license exempt supplier associated with a Private Network (PN), and an entity who owns and operates the PN itself. While in practise these roles can be fulfilled by one or two parties for every individual PN, the distinction is irrelevant from the perspective of the BSC.

Customers on PNs may be supplied electricity from a PNO who has purchased electricity from a Private Network Supplier. The Private Network Supplier is usually appointed by the PNO.

Following the Court of Justice of the European Union's (ECJ's) ruling in Citiworks AG v Flughafen Leipzig/Halle GmbH (Case C-439/06) [2008] ECR I-03913[2], Customers on PN also have the right to switch to a TPS of their choice. Under the Electricity and Gas (Internal Markets) Regulations 2011 (Statutory Instrument (SI) 2011 No. 2704[3]), PNOs are obligated to facilitate access for TPSs, through an arrangement known as Third Party Access (TPA).

Where one or more customers on a PN opt for a third party supply, corrective action is required to avoid the double counting of metered volumes in Settlement. This is because meter readings for a third party supplied customer that are submitted into Settlement by the TPS Agent will also contribute to the reading of a meter located at the Boundary Point between the PN and local Distribution System (Boundary Point Meter), which is submitted into Settlement and allocated to the energy account of the Private Network Supplier.

The BSC provides ways to avoid the double counting of metered volumes on PNs with third party supply via difference metering and shared SVA metering.

The Proposer believes that these existing options are unsatisfactory when applied to PNs that include domestic and small business customers due to the operational requirements placed on, and the lack of incentive for, TPS to meet such requirements. The Proposer argues that, as a consequence of these issues, there is no functioning TPA solution for domestic and small business customers on PNs, contrary to their legal right.

Historically, poor visibility on how many customers are connected to PNs has caused challenges for industry (for example, in relation to the distribution of government funds to customers via the Energy Bills Support Scheme in 2022).

The lack of visibility is a significant issue since the Proposer estimates as many as 100-300k domestic customers may currently be connected to a PN and unable to switch, across houses of multiple occupancy, caravan parks, social/sheltered housing, and residential build to rent schemes. Furthermore, the Proposer believes that the number of such customers will grow, given growing popularity for PNs as a means to deliver decarbonisation goals.

What is a Third Party Supplier?

A Supplier appointed by a customer on the private network.

What is a Third Party Meter?

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

[2] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62006CJ0439
[3] https://www.legislation.gov.uk/uksi/2011/2704/contents/made

Difference Metering

A difference metering approach involves the deduction of the consumption of the Third Party Meter(s) from the Boundary Point Meter. This approach is applicable whenever one or more (but not all) customers on a PN 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 PN 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 therefore required to establish voluntary, non-standard arrangements to settle their PN 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. The Proposer argues that for individual homeowners or small business customers, it is challenging to switch suppliers because there's minimal financial motivation for potential TPSs to set up the unique arrangements needed. This is mainly due to the relatively small amounts of electricity these customers use, which limits the appeal to potential TPSs to make the necessary effort. Moreover, if a Supplier was to make the effort and pass on the costs of doing so to the customer, the Proposer argues that the customer would face a substantial increase in tariff. It is, therefore, the Proposer's view that domestic and small business customers on PNs are in practise unable to switch to a TPS.

This view has been strengthened by evidence revealed through work undertaken on this code modification, which indicates that difference metering is not used in practise for residential and small business customers. Following the Assessment Procedure Consultation, it has come to light that a major LDSO has never come across a residential or small business premises being supplied on a PN via a difference metering scheme.

Additional to the issues outlined above, it is also the Proposer's view that where differencing metering is to be applied to contexts involving domestic and small business customers on PNs, the potential for there to be more than one TPS supplying customers would mean the approach is inefficient. For example, in a situation where a PN is connected to 100 domestic properties, 50 of which are supplied by the PNO and 50 of which are supplied by 20 different TPSs, all 20 TPSs would need to establish the unique arrangements described above to facilitate the scheme.

Shared SVA Metering

While difference metering is the default expectation for any PN where TPA is required, an alternative method for enabling TPA is Shared SVA Metering.

[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.

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 meters that are not directly settled).

Under this arrangement, an Allocation Schedule must be prepared in accordance with BSCP550 'Shared SVA Meter Arrangement'[5] which details how the consumption data is split between Suppliers[6].

The Proposer argues that similar challenges exist for implementing shared metering on PNs with domestic and small business customers, as exist for difference metering. Given the number of potential TPSs involved in the shared arrangement, similar to the arrangement described above, accurately allocating volumes could be highly complex. Additionally, all TPS involved in a scheme must collaborate to establish the required arrangements.

Consequently, the Proposer argues that the onerous operational requirements placed on TPSs discussed above for difference metering are even more pronounced here with shared metering, thus acting as a significant barrier to domestic and small business customers on PNs being able to switch Suppliers.

Full Settlement Metering

Full settlement arrangements are only applicable if every customer on a PN has opted for third party supply. The arrangements involve installing Settlement Meters for all consumption and generation on the PN, and treating each of those metering points as if they were connected to the Total System[7]. It therefore does not create a scenario that risks the double counting of metered volumes.

Consequently, while it is important to note the existence of this arrangement, **this Modification is focused primarily on PNs with a mix of customers who have opted for a third party supply and customers who are supplied 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[8] by Ofgem on 26 May 2021 in line with the BSC Panel's recommendation. The Derogation commenced on 27 September 2021 and will end no later than 26 September 2024. This is therefore a back-stop date by which this Modification must be implemented.

[5] https://bscdocs.elexon.co.uk/bsc-procedures/bscp550-shared-sva-meter-arrangement

[6] 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.

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

[8] https://www.elexon.co.uk/documents/performance-assurance/derogations/emergent-bsc-sandbox-derogation-26-may-2021/

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.

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 PNs into Settlement. This methodology is being trialled across several of its sites. In an update[9] 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 submitted a Modification Proposal to make an enduring change to the BSC which takes into account learnings from the Sandbox trial.

Desired outcomes

To establish a new methodology for facilitating Third Party Access (TPA) on PNs 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 PNs where TPA is required.

The new methodology will provide better outcomes for domestic and small business customers who may wish to switch from being supplied by a PNO to a Third Party Supplier, and vice versa, while also being more operationally efficient on schemes involving these customers than difference metering.

For example, it will not require Third Party Suppliers to establish new contractual arrangements with HHMOAs and HHDCs whom they have not previously appointed. Instead it will be delivered by the Private Network Supplier and Supplier Agents, potentially working in collaboration with the PNO.

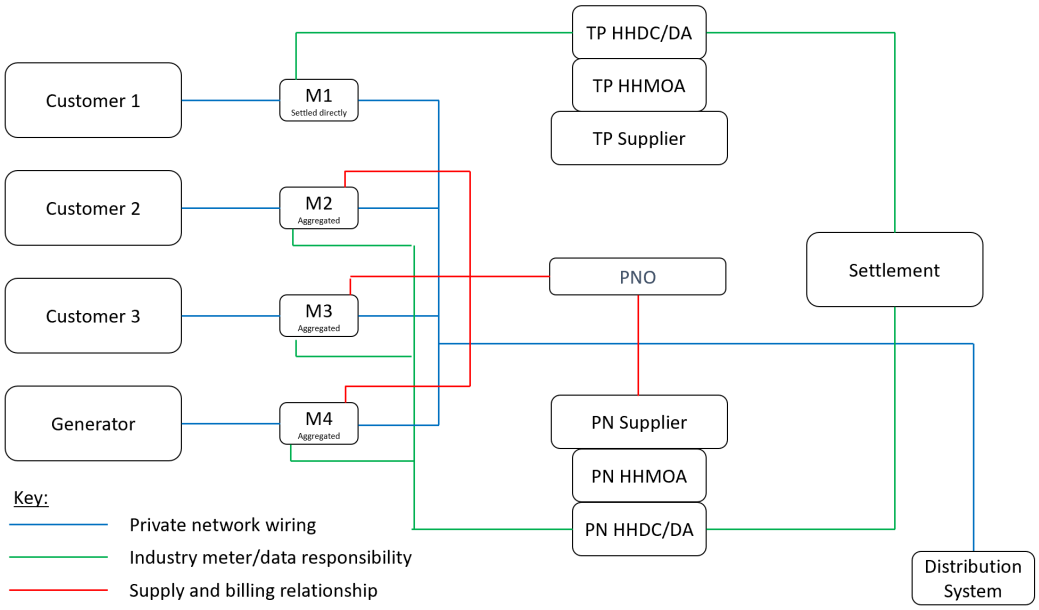
[9] https://www.elexon.co.uk/bsc-and-codes/derogations-from-the-bsc/

Proposed solution

Each customer supplied by the PNO will have their own Settlement standard (i.e. conforming to the relevant Code of Practise) meter, managed by the usual Supplier Agents (i.e. HHMOA and HHDC), with HH data available. This data would be used by the PNO for billing customers.

The proposed solution will enable this data to be **aggregated and submitted into Settlement in lieu of a reading from a 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 PN 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. Customers 1, 2, 3 and an on-site generation source (e.g. solar PV panels[10]) are connected to a PN.
2. Customer 1 is supplied by a TPS. The supplied volumes are metered by Settlement meter M1 and submitted into Settlement by the TPS (working with its agents), independent of any other activities undertaken on the PN.
3. Customers 2 and 3 are supplied by the PNO who uses Settlement standard meters M2 and M3 to bill these customers.
4. The PNO supplies customers 2 and 3 with electricity from the on-site generation source as well as electricity it purchases from the Private Network Supplier, which is imported from the local Distribution System. The generated volumes from the on-site generation source are metered by Settlement standard meter M4.
5. An HHDC appointed by the Private Network Supplier is responsible for using (aggregating) the data from M2, M3 and M4 to produce a net import or net export

[10] i.e. solar photovoltaic panels

figure for every HH period. For example, M4 – (M2 + M3)[11]. This figure is then submitted into Settlement and used by the Private Network Supplier for the purposes of billing the PNO.

6. An HHMOA appointed by the Private Network Supplier is responsible for maintenance of meters M2, M3 and M4.

7. A meter is not required at the boundary between the PN and the Distribution System.

For the avoidance of doubt, in the example given above there are two independent sets of meter data submitted into Settlement. The data from M1 relating to Customer 1, who is third party supplied is submitted directly into Settlement, with no interaction with the other Settlement related activities undertaken on the PN. The data from M2, M3 and M4 is aggregated to produce a net import or net export figure for the rest of the PN, excluding Customer 1, which is also submitted into Settlement.

Operational Requirements

To ensure the above On-Site Aggregation methodology results in accurate Settlement outcomes for PN private networks, procedural arrangements will be established as part of the solution. The Proposer suggests the following:

1. The PNO supplied **Import only meters** will be required to conform to Code of Practice (CoP) 10: The Metering of Energy via Low Voltage Circuits for Settlement Purposes. While ensuring Settlement standard metering is used for On-Site Aggregation schemes, this condition additionally limits participation in an On-site Aggregation scheme to customers whose import loads are below 100kW. As such, the solution is targeted specifically for use by the domestic and small non-domestic customers who have been identified as being unable to use the current TPA industry arrangements.

2. The HHDC appointed by the Private Network Supplier will be responsible for retrieving, aggregating and submitting the necessary data into Settlement, and all standard requirements on HHDC activities (e.g. in relation to data validation and estimation) shall apply. It is the case today that HHDCs may, at their discretion, coordinate with another party who is not an accredited HHDC in the delivery of all or any aspect of their BSC operational requirements, so long as the operating standards required of the HHDC are maintained. In practise therefore, when delivering On-Site Aggregation, the HHDC may choose to coordinate with another party, including the PNO. But in doing so, as the relevant qualified party, they will take on the risk of enforcement action or other relevant penalties if the operating standards required by that qualification are not maintained.

3. The HHMOA appointed by the Private Network Supplier will be responsible for identifying and fixing faults with the On-Site Aggregation meters, and all standard operating requirements on HHMOA activities (e.g. in relation to faults and installation) shall apply. They are also responsible for populating the On-Site Aggregation form and submitting this to the HHDC. Similar industry standard arrangements to those outlined above for HHDCs apply for HHMOAs who may wish to coordinate with another party on delivery of their operational requirements, including the operational requirements involved for an On-Site Aggregation site.

[11] the on-site customer will always consume from the on-site generation source before taking demand from the Distribution Network

4. For each PN where On-Site Aggregation is applied, a test equivalent to a Complex Site Validation Test[12] 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.

5. For customers who are supplied via a Settlement Meter and choose to switch to being supplied by the PNO, the Metering System Identifiers (MSIDs) associated with those customers' existing Settlement Meters will be required to be logically disconnected when the customer switches to the PNO.

6. HHMOAs who are appointed by Private Network Suppliers to On-Site Aggregation schemes will need to inform Elexon when a scheme is set up or altered (for example, when a customer switches in or out of a scheme). Elexon will store this information within a central database that will be accessible to relevant industry parties, enabling monitoring, performance assurance, and general management of schemes using the approach.

Benefits

This Modification should benefit the significant number (estimated by the Proposer to be as many as 100k-300k) of domestic and small business customers (i.e. with Import only meters that are sub 100kW) on PNs. It will do so by reducing the operational requirements and increasing the commercial incentives for potential TPSs to offer these customers a supply. It should therefore be easier for these customers to find TPSs willing to supply their energy[13].

This should make it easier for Suppliers to attract new domestic and small business customers who are connected to a PN and currently supplied by a PNO. This could lead to greater competition and improved outcomes for the market as a whole.

It should have environmental benefits as PNs provide a mechanism for locally generated (renewable) electricity to be generated and supplied to customers. This includes customers who are otherwise unable to benefit from using locally generated renewable electricity due to the nature of the premises they live in. For example, historically most people who live in flats have been unable to benefit from using on-site generated solar electricity.

Integrated with other decarbonisation technologies such as heat pumps, electric vehicle chargers and storage, PNs additionally have potential to reduce capacity strains on the Distribution System and unlock valuable flexibility for the energy system as a whole.

While delivering benefits, growth in PNs also comes with risks for the industry, in particular in relation to the protection of customers of PNOs, who operate outside of the central licensing framework (i.e. they are licence exempt). Introduction of the proposed central database of On-site Aggregation schemes will bring greater visibility of PNs to Ofgem and the wider industry, both improving understanding of the popularity of PNs, and enabling proactive development of relevant regulatory frameworks that may in future be deemed necessary.

[12] See BSCP504, paragraph 3.5.6

[13] 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.

Alternative solution

The P455 Workgroup did not identify any alternative solutions.

Response to the Assessment Consultation

Do you agree with the Workgroup that there are no other potential Alternative Modifications within the scope of P455 which would better facilitate the Applicable			
Yes	**No**	**Neutral/No Comment**	**Other**
6	1	0	0

The majority of the responses were positive that there was no potential alternative solution, especially since the solution has been trialled and tested during the Sandbox Application.

The one negative response received was related to a suggestion that the scope of the modification should be widened to include TPA arrangements for larger (i.e. 100kW+) non-domestic customers, and that this might potentially mean an alternative solution is required.

Based on the consultation responses, the Workgroup (WG) determined that the modification should not be extended to larger customers (discussed further below). Furthermore, on request, the respondent was unable to propose an idea for an alternative solution to On-Site Aggregation, and agreed that the proposed solution was the only one available to address the issue with TPA that has been identified.

Consequently, following consultation, the WG determined that there are no potential alternative modifications to the one proposed.

Legal text

The draft Legal Text and Code Subsidiary Documents (CSDs) to deliver the intent of P455 can be found Attachment B and C.

Responses to the Assessment Consultation

Do you agree with the Workgroup that there are no other potential Alternative Modifications within the scope of P455 which would better facilitate the Applicable			
Yes	**No**	**Neutral/No Comment**	**Other**
6	1	0	0

During the Assessment Procedure Consultation, two typos were identified by the respondents on the Code Subsidiary Document and corrected immediately.

The negative responses on the Legal Text stemmed from two main issues: one due to the typographical errors, and another because a respondent believed the proposed solution was placed in the incorrect Code Subsidiary Document. This respondent suggested that the scheme would be more appropriate under BSCP550. However, BSCP550 deals with splitting energy at the Shared Supplier Volume Allocation (SVA) Metering System, whereas the proposed solution aims to facilitate Third Party Access.

Besides these comments, respondents to the consultation agreed with the Workgroup that the Legal Text would enact the requirements of the Modification as proposed.

4 Impacts & Costs

Estimated implementation costs of P455

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

Costs Estimates			
Organisation	Implementation costs (£)	On-going (£)	Impacts
Elexon	£1k	0	BSC Document changes. Management of central database expected to be email only.
Industry	Low to Medium	Low	Systems and processes. However, participation in the scheme is voluntary
Total	<£100k	Low	

Responses to the Assessment Consultation

How much will it cost your organisation to implement P455?

High	Medium	Low	None	Other
0	0	4	2	1-

The large majority of respondents considered the costs to be zero or low. One Supplier Agent believes it will be able to implement P455 as an extension of the current Complex arrangements as applied to TPO sites, without incurring any extra cost. One Supplier anticipates a slight reduction in overheads by not having to go through the Difference Metering process for customers seeking a Third Party Supply. One LDSO stated that in isolation, they do not anticipate any implementation costs from P455.

The LDSO respondent who raised questions on the details of how the modification would be delivered in practise (see in relation to questions 'Will P455 impact your organisation') did not specify a cost, instead identifying daily operational activities they expected would be needed as a result of P455, and stating that a cost was impossible to determine.

The respondent also claimed that they would see implementation costs due to their expectation that a DCUSA change would need implementing alongside P455. However, this is no longer relevant, since in subsequent discussions with Elexon and the Proposer, the respondent came to agree with the WG view that a DCUSA change is not required to implement P455.

Responses to the Assessment Consultation

What will the ongoing cost of P455 be to your organisation?				
High	**Medium**	**Low**	**None**	**Other**
0	1	3	3	1

The Suppliers and one Distributor did not anticipate any ongoing cost for P455.

The other Distributors anticipated low to medium costs initially, with some complexity remaining in supporting new consumer's choice mechanisms. There are costs expected from supporting the work with external agents and other arrangements in support of the Third Party Suppliers. Since it is hard to predict the amount of MPANs that will adopt the scheme, it is hard to estimate the ongoing costs.

For the Supplier Agents, one agent anticipated potentially significant, though uncertain, increases in operational costs due to the complexity and manual processes involved in managing Shared and Third Party Network sites, another agent expected the impact to be minimal.

P455 impacts

Impact on BSC Parties and Party Agents		
Party/Party Agent	Impact	Estimated 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

Impact on BSC Parties and Party Agents		
Party/Party Agent	Impact	Estimated cost
Licenced 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 operational processes, such as responding to power cuts and issuance of MPANs. In future this may also be relevant for identifying the correct DUoS charges to levy Suppliers related to the site. This is because, while implementing the proposed On-Site Aggregation BSC solution does not require any changes be made to DCUSA, the Proposer has developed a potential modification to DCUSA that could work alongside On-site Aggregation, which is the subject of a second Sandbox trial by Emergent. This is expected to lead to a DCUSA Modification being raised in 2024.	L

Impact on the NETSO	
Impact	Estimated cost
No impacts anticipated	

Impact on BSCCo		
Area of Elexon	Impact	Estimated cost
Metering	Low – management of email database required	N/A

Impact on BSC Systems and process	
BSC System/Process	Impact
No impacts anticipated	

Impact on BSC Agent/service provider contractual arrangements	
BSC Agent/service provider contract	Impact
HHDCs	HHDCs appointed by Private Network Suppliers will be responsible for retrieving, aggregating and submitting the necessary metered data into Settlement for PNO supplied customers and on-site generation sources. They will also need to work with HHMOAs appointed by Private Network Suppliers to establish the data integrity of the individual meters involved and the overall aggregation methodology that is being applied to these meters.

Impact on BSC Agent/service provider contractual arrangements	
BSC Agent/service provider contract	Impact
HHMOAs	HHMOAs appointed by Private Network Suppliers will be responsible for identifying and fixing faults on Settlement standard meters installed on private networks. They will also need to work with HHDCs appointed by Private Network Suppliers to establish the data integrity of the individual meters involved and the overall aggregation methodology that is being applied to these meters.

Responses to the Assessment Consultation

Will P455 impact your organisation?			
High	**Medium**	**Low**	**None**
0	2	6	0

One respondent, a Supplier Agent, identified the potential impact on their organisation as low to medium. On assessment, their response has been categorised as medium above.

A Supplier and several PNOs indicated that the implementation of P455 will have positive impacts on their operations. In each case, these impacts will only apply if the relevant party chooses to implement the solution. The introduction of a new On-Site Aggregation methodology was expected to significantly simplify the process for microgrid customers on PNs who wish to switch to alternative suppliers, making it easier to facilitate such changes. Specifically, ENGIE, as a supplier, expects a minimal impact on its operations but foresees benefits for customers covered by P455 requesting Third Party Supply. They anticipate a reduction in complexity and an increase in efficiency, as the need for the complicated Difference Metering process and coordination with the Boundary Supplier to the Private Network will be eliminated. This streamlined approach under P455 is expected to enhance the overall customer experience by making the supplier switch process smoother and more efficient. One organisation, both an IDNO and PNO, foresaw a medium impact for their organisation, from needing to make measurable and manageable changes to business processes but they welcomed the benefits the modification would bring for their customers.

Other Distributors, including two LDSOs, anticipated impacts from P455 to be low. However, there were some operational concerns from one LDSO who raised a number of questions on the details of how the modification would be delivered in practice. Elexon and the Proposer discussed these concerns in depth with the respondent and addressed them during Workgroup meeting 6 by strengthening proposals related to the establishment of a central database of On-Site Aggregation schemes that would be managed by Elexon.

One Supplier Agent, expected the impact of the modification on their organisation to be low, identifying a) as HHDC, the need to make minor process adjustments to distinguish between the new and existing validation tests, and b) as HHMOA, the need to consider requirements as detailed in REC change R0150. Another Supplier Agent foresaw low to medium impacts for their organisation, raising questions about how the process would work in practise. Again, Elexon and the Proposer discussed these questions in depth with the respondent and addressed them during the Workgroup meeting 6. For both Supplier

Agents, the cited impacts only apply if the relevant party chooses to implement the solution.

Responses to the Assessment Consultation

How long (from the point of approval) would you need to implement P455?
A few months to 1 year

A majority of responses suggested a three month period to implement the solution.

Impacts on BSC Settlement Risks

Elexon assessment on the Impact of P455 on BSC Settlement Risks
There are potential risks to Risk 1 (Registration), 7 (Retrieval), 18 (revenue protection). This is largely due to the threat that unmetered loads are on private network are not identified. This has been reviewed and discussed during the Assessment Procedure. The potential impact is expected to be low, given the frequency of sites and the limitation to being sub-100kW. There is a further risk around Risk 16 (Energisation status), through the disconnection process.

Responses to the Assessment Consultation

Do you agree with the Workgroup's assessment of the impact on the BSC Settlement Risks?			
Yes	No	Neutral/No Comment	Other
6	1	0	0

The majority of the responses agreed with the Workgroup's assessment on the impact on the BSC Settlement Risks. One of the respondents remarked that the requirement for the sub-meters used for the aggregation to be CoP complaint and managed by the boundary point supplier's agents provides assurance on this point.

The negative response (from a Distributor) stated that while the financial impact on the BSC Settlement process might be considered low, the operational effort required to address potential issues could be significant, and highly dependent on the diligence of the parties involved in the daily operation of PNs with On-Site Aggregation applied, in particular the management and implementation of the relevant BSC processes for when a customer moves from being supplied by a PNO to a third party supplier, and vice versa.

This points was addressed by Elexon explaining that the On-Site Aggregation methodology will be subject to the same techniques under the BSC Performance Assurance Framework (PAF), as other methods of facilitating Third Party Supply. A bespoke BSC Audit paper may be created specific to the On-Site Aggregation Method following the implementation of P455.

The Distributor raised a further concern that the risk to settlements might be underestimated, given the unknown volume of customers that could be involved in these revised arrangements.

This point was addressed in Workgroup meeting 6, where the Proposer and Elexon clarified and provided more details into the proposed central database, which will be used to monitor overall uptake as well as delivery quality. The Distributor was satisfied that the database would help ensure appropriate monitoring of the scheme and mitigate their concerns.

Impacts on Codes

Impact on the BSC	
Code Section	Impact
Section K: Classification and Registration of Metering Systems and BM Units	P455 adds 2.9 Registration of On-Site Aggregation SVA Metering Systems
Annex X-2: Technical Glossary	P455 add definition of measurement class to Section K

Impact on BSC Code Subsidiary Documents	
CSD	Impact
BSCP502 'Half Hourly Data Collection for SVA Metering Systems Registered in SMRS'	P455 adds 3.5.7 the On-Site Aggregation Validation Test and On-Site Aggregation Form, 4.9 Guide to Complex Sites and On-Site Aggregation

Impact on MHHS
P455 does not impact the MHHS design or TOM. Any code drafting impact will be dealt with via baselining activity post MHHS milestone M6.

Impact on Core Industry Documents and other documents	
Document	Impact
Ancillary Services Agreements	n/a
Connection and Use of System Code	n/a
Data Transfer Services Agreement	n/a
Distribution Code	n/a
Grid Code	n/a
Retail Energy Code	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; and to produce and submit the On-Site Aggregation Form to the HHDC. As SVA MOAs are governed under the Retail Energy Code (REC), there is in place a REC Code Manager's subsequent change (R0150).

Impact on Core Industry Documents and other documents	
Document	Impact
Supplemental Agreements	n/a
System Operator-Transmission Owner Code	n/a
Transmission Licence	n/a
Use of Interconnector Agreement	n/a

Impact on a Significant Code Review (SCR) or other significant industry change projects
There is no impact on any open SCR. Ofgem confirmed this view on 9 October 2023.

Impact on EBGL Article 18

Impact on EBGL Article 18 terms and conditions
The P455 Workgroup does not believe that this Modification impacts on any of the EBGL Article 18 Terms and Conditions held within the BSC. While the Workgroup or respondents to the Assessment Consultation were not able to identify any impacts on the EBGL Article 18 Terms and Conditions, Elexon conducted a review and consider that changes to Section 2 of Section K will impact EBGL and will require a month long consultation.

Responses to the Assessment Consultation

Do you agree with the Workgroup's assessment that P455 does not impact the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the BSC?

Yes	No	Neutral/No Comment	Other
6	0	1	0

A large majority of the respondents agreed with the Workgroup's assessment that P455 does not impact the EBGL Article 18. One respondent was unsure due to not being aware of what the Article implies.

Impacts on the environment and consumer benefit areas

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 result in lower bills for customers on PN networks who wish to be supplied by TPSs, as TPSs will no longer incur costs as a result of establishing bespoke arrangements in these circumstances. Customers will be more able to choose to be supplied by a PNO who is supplying on-site generated renewable energy, which could lead to lower bills.	**Positive**
3) Reduced environmental damage This Modification will support growth in the use of PNs to support the deployment and financing of decarbonisation technologies for housing and small business customers. PNs involving storage and other means of demand control will also deliver reductions in grid capacity constraints and unlock valuable flexibility for the overall energy system. This will support the transition to a Net Zero emission electricity grid.	**Positive**
4) Improved quality of service This Modification will make switching easier for customers on PNs. The improved competition between suppliers (PNOs and licensed Suppliers) that will result, should result in an improved quality of service for these customers	**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.

Responses to the Assessment Consultation

Do you agree with the Workgroup's assessment of the consumer impacts?			
Yes	**No**	**Neutral/No Comment**	**Other**
7	0	0	0

The large majority of responses were positive regarding the environment and consumer benefits identified by the solution. This included a positive response from the LDSO who raised a number of operational considerations and potential risks for the modification in their overall consultation response. They remarked that for consumers the proposed solution would be a positive improvement to the current arrangements.

Initially, there was one negative response related to the respondent requesting that some technical details of the modification be better explained, and for the consumer benefits to be explained in further detail. Elexon and the Proposer have since met directly with this

respondent to cover these elements and the respondent agreed, during the Workgroup meeting 6, that there are benefits on implementing the solution.

5 Implementation

Recommended Implementation Dates

The Workgroup recommends an Implementation Date for P455 of:

- **29 June 2024** as part of the standard June Release BSC Release if an Authority decision is received on or before 6 June 2024; or
- **5 Working Days** after Authority decision, as part of a special BSC Release.

Responses to the Assessment Consultation

Do you agree with the Workgroup's recommended Implementation Date?			
Yes	**No**	**Neutral/No Comment**	**Other**
6	1	0	0

The majority of the responses agreed with the Workgroup recommendation on the implementation approach.

Initially, there were two respondents that disagreed with the implementation of P455. One was from a Supplier Agent who believed that the Modification should not be approved. However, this respondent also stated in their initial consultation responses that they were unclear on key details about the Modification, including why it is needed, how it achieves its' objectives and how it results in correct volumes of data being submitted to the Settlement Process. As such, these gaps in understanding may have affected their response to the consultation.

Elexon and the Proposer have since met with the respondent to discuss their responses and provide additional clarity on the Modification. The respondent has since modified its responses and now agrees with the proposed solution. The table above reflects the final summarised responses.

The other negative response was from an LDSO respondent who believed that a DCUSA change was required before this Modification could be implemented, and that more detail was needed on how the solution would be implemented in practise. Therefore, they believed the targeted implementation date could not be achieved.

Through subsequent discussions with Elexon and the Proposer, this respondent agreed that a DCUSA solution was not needed to implement the modification, so this element of their response is no longer relevant. The practical questions they raised about how the Modification would be implemented in practise were covered in Workgroup meeting 6.

6 Workgroup's Discussions

The P455 Workgroup met five times on 12 September, 31 October, 22 and 27 November and 12 December 2023 to consider the Terms of Reference. On 20 February 2024, the Workgroup held its sixth meeting, where the Assessment Consultation responses were reviewed and the Workgroup voted for its final views on P455.

The Assessment Procedure Consultation was distributed with the original Terms of Reference presented as questions, rather than reformulating them to reflect the conclusions reached during the Workgroup's discussions. This approach led to elements of confusion among some of those who provided feedback. Elexon responded to this issue by taking the feedback into account, incorporating it into its lessons learned, and adapting its future best practices accordingly.

ToR a) Does the proposed On-Site Aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?

Workgroup discussions

The P455 Proposer started by reviewing the ToR and presenting the methodology for On-Site Aggregation to facilitate Third Party Access on private networks. BSCP502 was reviewed, with particular emphasis on the Difference Metering methodology, and how on-site aggregation achieves the same outcomes mathematically while making it easier for Customers to choose Third Party Suppliers.

A Workgroup member asked if this solution applies to all meter types, including non-half hourly. It was clarified that the Import only Meters involved in the On-Site Aggregation Method are proposed to be Code of Practice (CoP) 10 compliant and would all be operated on a half hourly basis. Plant/Apparatus capable of generation comprised within an On-Site Aggregation Metering System will need to be compliant to the relevant CoP for the generation load. Third party supplied meters would need to be CoP compliant and could be settled half hourly or non-half hourly.

Regarding the management of distribution losses on PNs, the Proposer, with support from Elexon, argued that these were largely irrelevant for the scale of schemes that would be covered by On-Site Aggregation, since the scale of losses involved would be negligible. Furthermore, losses could be managed under the scheme if necessary. Treatment of losses associated with any Third Party Supplied customers would be equivalent to how losses are treated in full settlement schemes. Meanwhile, for meters are enrolled in an On-Site Aggregation, the aggregation calculation could potentially incorporate a calculation to apportion for losses between the various meters if this was considered to be worthwhile.

Outcome

The Workgroup concluded that the aggregated methodology produces the same settlement results as Difference Metering, but using a simplified method that, by not requiring involvement of Third Party Supplied Customers, their Suppliers, or their Suppliers' agents, makes it easy for Customers on PNs to choose Third Party Suppliers.

Responses to the Assessment Consultation

Does the proposed On-Site Aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?			
Yes	No	Neutral/No Comment	Other
6	1	0	0

The majority of the responses were positive since the proposed On-Site Aggregation methodology was viewed as a significant improvement over Difference Metering in terms of achieving accurate settlement outcomes. Its design, supported by the Sandbox Trial evidence, suggests it can effectively address the current limitations and complexities associated with Difference Metering. The respondent who questioned whether On-Site Aggregation would generate accurate settlement outcomes questioned whether risks were introduced by the use of what they called 'privately managed submeters', in particular if PNOs were to play a role in operating the meters. In follow up conversations with the respondent it was clarified that the proposal was for CoP compliant meters to be used, which would be operated by accredited industry parties (i.e. HHMOA/HHDC), in much the same way as occurs for solutions like complex metering. The respondent accepted this was the case and refined their concern to focus on potential risks that could occur if the solution proved to be popular, questioning in particular whether the appointed parties would be able to manage lots of schemes with customers regularly switching between PN supply and third party supply.

In response, at WG meeting 6, Elexon and the Proposer articulated the range of performance assurance mechanisms available to Elexon to ensure the delivery standards of the solution meets with industry requirements, and additionally provided further details on the proposed solution in relation to the creation and maintenance of a central database by Elexon. It was explained that while bringing important visibility to PN schemes to industry for the first time, the database would also enable monitoring of the popularity of the solution and responsive application of Elexon's performance assurance mechanisms in relation to the observed popularity. Furthermore, the observed popularity of the solution via the database would provide an evidence base to support subsequent modifications that may be deemed helpful, for example streamlining the HHMOA and HHDC processes to make the solution more cost efficient to operate at scale. At WG6, the respondent agreed that the proposals for the database significantly mitigated the risks they had been concerned about.

ToR b) What testing should be required to validate the solution is correctly implemented, and should this include an unmetered load tests?

Workgroup discussions

The Proposer presented the findings from Emergent's Sandbox trial of the On-Site Aggregation method, which required a so-called 'proving test' to be conducted, to check for unmetered loads, as these cause adverse and incorrect Settlement decisions. The test was shown to have presented many practical difficulties, due to the requirement for the relevant party to access meters that are registered with Third Party Suppliers, and which it therefore has no responsibility for or rights toward.

The Proposer also argued that Difference metering does not in practice capture existing unmetered loads on the smaller sites that are the focus of the modification, because, since

the solution does not work as a means to facilitate Third Party Access, it is not used in the industry. On this basis, the Proposer argued it was wrong to require the On-Site Aggregation method to achieve an outcome that is not required of other settlement processes.

Outcome

The Workgroup concluded that, P455 should not have to solve instances of existing unmetered loads. The proposed test was agreed to be prohibitively costly while providing negligible gain. It was further noted that no other site validation test within the BSC requires parties to access data from meters for which they are not responsible and have no rights toward. Consequently, a test comparable in scope to a Complex Site Validation Test was believed to be sufficient and appropriate to test the On-Site Aggregation Method and should be applied to P455.

The Aggregation Method is not proposed to apply to large I and C schemes and so it was noted that the risk of unmetered loads could still be picked up in larger Metering Systems where difference metering is applied more often and correctly.

Responses to the Assessment Consultation

This was an open text question asking what testing should be required to validate the solution is correctly implemented, and should this include an unmetered load tests. The large majority of the responses agreed with the Workgroup's position that a physical unmetered loads test should not be required due to access restrictions and physical challenges of carrying out such tests. Distributors and PNOs expect to co-ordinate with a HH MOP to assess sites (as before) with complex sites, including unmetered load tests – where relevant.

One respondent suggested an annual test be undertaken similar to the proving test that was required of Emergent during the Sandbox period. However, the way the consultation was written is likely to have made it unclear to the respondent that the Workgroup had already considered and decided against the option. The Workgroup examined different questions around tests for validating the accuracy of the On-Site Aggregation solution and determined that it was inappropriate to require a test that involved full summation of all meters on a PNO (including PNO sub-meters and TPS meters) since this was above and beyond the testing requirement for comparable solutions in the BSC, and would be a prohibitively costly requirement to implement.

The Distributor who raised a number of questions about the Modification throughout their response, may have misunderstood the intention of the solution. Instead of replying about what testing should be required for ensuring the accuracy of settlement data on single On-Site Aggregation sites, they argued for comprehensive end to end testing for the proposed modification arrangements, across all types of customers who could be connected on any TPA sites.

In response, it was noted by Elexon and the Proposer that Modifications that enable similar solutions in the market (e.g. complex metering, shared metering) are rarely if ever tested in depth in the field before implementation. In this case, P455 has already had a greater degree of testing that is typical, since the solution has been trialled during the Emergent's Sandbox scheme.

ToR c) Is it right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters, given private

network operators are responsible for these meters on a day-to-day basis, and given the move to new arrangements under MHHS?

Workgroup discussions

The Proposer argued that this was the most straightforward arrangement for the industry to adopt, and should be uncontroversial.

In relation to MHHS, the proposer noted that Ofgem has confirmed that P455 is exempt from the Significant Code Review (SCR). It was asked if P455 will have impacts on the MHHS migration, but it was explained by Elexon that the P455 solution is simpler than the Difference Metering and would be simple to migrate.

A WG member asked if P455 will force Private Network Owners (PNO) to join the BSC. It was clarified that no new roles are proposed under this solution and to the degree that PNOs are involved in implementing schemes, it will necessarily be through collaboration with registered Suppliers and their qualified Supplier Agents who must ensure industry processes are adhered to

Outcome

The Workgroup agreed that it is right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters.

Responses to the Assessment Consultation

Is it right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters, given private network operators are responsible for these meters on a day-to-day basis, and given the move to new arrangements under MHHS?			
Yes	**No**	**Neutral/No Comment**	**Other**
6	1	0	0

The majority of the responses agreed that the PN Supplier's HHDC and HHMOA should be responsible for the PN meters, especially considering their expertise and the fact they must ensure adhere to industry processes, by nature of their qualifications.

Initially, there were two respondents that disagreed. One did so because (as they stated) they did not understand the question. After having a discussion with Elexon and the Proposer, the respondent was able to understand the question and has modified their answer.

The other respondent, the Distributor who made various challenges to the proposed Modification, believed it might be more effective for a single entity to oversee meter data and operations aspects to minimize the risk of errors that could impact settlement accuracy. However, given that the standard industry practice is to have a separate agent responsible for meter operations (HHMO) and data (HHDC), as is reflected in P455 Solution, it is not clear why this scheme should be managed differently.

The Workgroup agreed that there could be an argument for introducing a new BSC role for PNOs, but deemed this was premature given the small number of known operators today and the unknown future uptake of the solution. The existence of the proposed central database will bring greater visibility to the existence of private networks serving domestic customer than what exists today, as well as to the PNOs who operate those scheme. Thus

the database was seen as an important tool to support future decision making on whether it is appropriate to create a new BSC role for PNOs through a future modification.

ToR d) Is it right that the sub-meters should conform to CoP10 standards?

Workgroup discussions

Elexon explained that the meters involved in an On-Site Aggregation scheme will be required to be compliant to a relevant Code of Practice.

The original solution set out that all meters involved in an On-Site Aggregation should be CoP10 complaint. It was explained that this was chosen to achieve the dual purpose of ensuring the meters are industry standard (i.e. CoP compliant) while limiting participation in an On-Site Aggregation to those customers (i.e. domestic and small business) who have been shown not to be able to use difference metering.

However, after being discussed, it was decided that only the Import only meters involved in an On-Site Aggregation should be limited to CoP10. The Workgroup agreed that meters for generation equipment like solar PV and batteries (which are not final-consumption) should not need to conform to CoP10 because that would unduly limit their capacity to 100kW, and therefore may not be the most appropriate metering category. Plant/Apparatus capable of generation comprised within an on-site aggregation Metering System should instead be compliant to the relevant CoP.

It was noted that the use of Smart Metering Equipment Technical Specifications (SMETS) Meters, which have been adopted by the Data Communications Company (DCC), is allowed in the on-site aggregation Metering System. These SMETS Meters meet the requirements of CoP10. However, when doing so, it will be important to inform the HHDC about which Meters have been adopted by the DCC. This is to ensure that the HHDC does not try to access the raw data from these specific Meters, which is done via the On-Site Aggregation Form.

Outcome

The Workgroup agreed with limiting P455 to **Import only** sub-meters that are CoP10 compliant whilst the rest of the apparatus will need to be complaint to the relevant CoP for that apparatus.

Responses to the Assessment Consultation

Is it right that the sub-meters should conform to COP10 standards?			
Yes	**No**	**Neutral/No Comment**	**Other**
7	0	0	0

The responses agreed with the Workgroup decision of limiting the import only sub-meters to the CoP10 standards, and the other apparatus to the relevant CoP.

A response highlighted that there was a difference between the original ToR question (i.e. what was included in the consultation) and what was agreed with the Workgroup. The respondent correctly pointed out that the consultation question did not reflect the outcome

of the WGs. Elexon noted the confusion and agreed to ensure WG discussions were reflected in the consultation questions in future cases.

ToR e) 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 his central register? Do PNOs/DNOs have all the necessary data to manage schemes?

Workgroup discussions

The Proposer identified the need for a data solution for industry to know with confidence which TPS meters are associated with which On-site Aggregation schemes. This includes LDSOs, who will need to validate a customer who wants Third Party Supply is connected to a PN with On-site Aggregation applied, before issuing an MPAN. These parties may also find such information helpful when investigating potential unauthorised loads. A central repository of PNOs who are using On-Site Aggregation achieves this.

Additionally, the Propose argued such a database would help the industry gain better visibility on PNs and PNOs, as well as enable popularity of On-Site Aggregation to be tracked.

Outcome

Similar to the Complex Site Supplementary Information Form, Elexon created an On-Site Aggregation Metering System Form. This form will be required to be sent to BSCCo by the MOA so that we can create the central repository. This will need to be included in the REC redlining

Responses to the Assessment Consultation

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 his central register? Do PNOs/DNOs have all the necessary data to manage schemes?			
Yes	**No**	**Neutral/No Comment**	**Other**
6	0	1	0

The majority of the respondents agreed on the need to create a central database of sites where On-Site Aggregation is applied. It was highlighted that this central repository would be beneficial for transparency, research and the analysis of the scheme.

From those who supported the creation of the central database, one noted that PNO's are still expected to maintain accurate and timeous asset registers for their own reasons, making the data available as required to facilitate settlements issues within the confines of data protection regulations.

The neutral response had concerns regarding the accuracy of the database, the on-going costs and the purpose of it, but would be in favour if there is a clear use/low cost/easy to maintain use case. These issues were discussed in depth during WG meeting 6, which covered details on how the database would work in practise.

ToR f) Is there an impact on BSC Metering Dispensations?

Workgroup discussions

Elexon explained that the BSC Settlement CoPs require Metering Equipment to be located at the point of connection to the Total System (Defined Metering Point).

Currently where Metering Equipment is located away from the Designated Metering Point (DMP) then a Metering Dispensation is required; either generic (D/380) or site specific. The only method of facilitating Third Party Access that currently requires a Metering Dispensation is difference metering. This is because the Metering Equipment associated with the Third Party Customer's MSID(s) is located away from the DMP at the asset.

However under the full Settlement solution, a Metering Dispensation is not required as all the entry and exits points of the Licence Exempt Network (i.e. PN) are metered. This effectively moves the DMP to the point of connection to the LEN as opposed to the Total System.

The On-Site Aggregation method more closely resembles the full Settlement solution as each aggregated customer has a CoP compliant meter, included within the overarching On-site Aggregation MPAN, and each Third Party Supply customer is also independently metered. For this reason it is suggested that a Metering Dispensation is not required for the MSIDs related to the On-Site Aggregation method.

Outcome

The Workgroup concluded that there are no impacts on BSC Metering Dispensations.

Responses to the Assessment Consultation

Is there an impact on BSC Metering Dispensations?			
Yes	No	Neutral/No Comment	Other
1	5	1	0

Most of the respondents agreed with what was discussed during the Workgroup that Metering Dispensations are not required as all the entry and exits points of the Licence Exempt Network (i.e. PN) are metered.

The respondent who said there would be an impact on Metering Dispensations, did not expand on why they believed this was the case, just stating they expected more would be required. They had not attended the WG meetings, and so this may have had an effect on their interpretation of the requirements.

ToR g) Is this proposal independent from any DCUSA change?

Workgroup discussions

The potential need for a DCUSA code change has been explored extensively with DCUSA and various DNOs. Through this process it has been confirmed that as there are no provisions for managing TPA sites in DCUSA there is nothing to be changed as a result of the On-Site Aggregation modification.

Furthermore, it was identified that the On-Site Aggregation methodology will actually reduce some requirements for change to DCUSA, since it will go some way to solving how to allocate fixed DUoS costs on sites with TPA, which was the subject of failed DCUSA change DCP328, and is the focus of a new DCUSA Workgroup process. Specifically, the absence of need for a boundary meter for On-Site Aggregation means that the measurement class and DCUSA banding for an On-site Aggregation site are determined from the On-Site Aggregation meter data, which means the residual DUoS charges for a scheme are allocated correctly, and do not adjusting through a DCUSA process. Note, a process is still needed to ensure non-residual fixed DUoS charges are correctly allocated.

While not explicitly linked to DCUSA, for the avoidance of doubt, the On-Site Aggregation methodology does not impact or modify the existing allocation of responsibilities for tackling Unauthorised/Unregistered Supplies. Where these are currently under the Distribution Business' remit as an unregistered supply, they will continue to be so. To the degree this is relevant, this includes a premise on a PN that didn't have a registered TPA MPAN of its own and that was not part of the PNO's summation (i.e. it does not become a Revenue Protection issue for the Supplier of the Boundary/Landlord MPAN).

Outcome

The Workgroup agreed that P455 is independent from any DCUSA change. Since there was no further concerns regarding the potential DCUSA impacts, this question was removed from the Consultation.

ToR h) Is a Cost-Benefit Analysis required?

Workgroup discussions

The Workgroup view was that a Cost-Benefit analysis was not required for P455. This is because the implementation and ongoing costs for the change are expected to be minimal, particularly since utilisation of the solution by industry parties is voluntary.

Nonetheless, the Workgroup discussed that Ofgem may want it to help make assess a decision regarding P455.

Outcome

The Proposer and Elexon have engaged with Ofgem to see if they will need a Cost-Benefit analysis undertaken to make their decision. It has not been required at this point.

Responses to the Assessment Consultation

Is a Cost-Benefit Analysis required?			
Yes	No	Neutral/No Comment	Other
2	5	0	0

The majority of respondents agreed with the WG that a CBA is not needed.

The respondents that disagreed with the Workgroup decision that a CBA was not needed believed that the analysis would help understand the benefits of the Modification, given MHHS is being introduced.

ToR i) Is it right that the scheme is limited to sub-100kW sites?

Workgroup discussions

While the proposed solution stated that the scheme be limited to sub-100kW 'sites', the Workgroup discussed that the summation of all Metering Equipment under the on-site aggregation Metering System is highly likely to exceed 100kW and so a 100kW limit was not appropriate. The Proposer accepted that the original wording gave the wrong impression and that the original intention was to use the limit on meter type to limit the types of customer who can participate in an On-Site Aggregation, not the overall size of a scheme. The limit was clarified to apply to meters that participate in an On-Site Aggregation scheme (further refined to those meters that are import only, as explained above).

The 100kW meter limit was chosen as the problem this Modification seeks to address is specific to domestic and small business customers who are captured under this limit.

Business customers with a load that exceeds 100kW will continue to be able to participate in a difference metering or shared metering arrangement. The Proposer is unaware of any reports of customers of this type for whom the difference and shared metering arrangements have not worked.

Outcome

The Workgroup agreed that it is not the scheme that is limited to 100kW, but the Import only Metering Equipment comprised within the on-site aggregation Metering System. It was discussed that if evidence is found of a larger (100kW+) customer on a PN who wants TPA and could benefit using On-Site Aggregation this will bolster the case for expanding the solution to larger customers through a subsequent Modification.

Responses to the Assessment Consultation

Is it right that the scheme is limited to sub-100kW sites?			
Yes	No	Neutral/No Comment	Other
2	5	0	0

The responses to this question seem unclear, reflecting that the actual wording on the question stated the original ToR for the Modification and not the outcome of the WG discussions and decision. As such, a majority of respondents responded 'No', meaning a 100kW limit should not be set at 'site' level, while agreeing with the WG that a 100kW should be placed on the meters of customers (i.e. import only meters) who participate in an On-Site Aggregation scheme).

In general the respondents agreed that placing the CoP10 meter requirement on the import only meters in an On-Site Aggregation scheme would act to keep the scheme limited to smaller consumers as intended, while batteries and other generating apparatus not be captured by this limit, and so could have a higher load.

A distributor that disagreed with the Workgroup decision believed the scheme should not be limited to sub-100kW sites. As explained above, the goal of the Proposer in raising the Modification is to improve outcomes for domestic and small business customers, and so

larger customers fall outside the scope of this Modification. Nonetheless, the case for expanding the solution to larger customers was discussed by the WG, particularly in WG6.

In addition to there being no evidence for larger customers being unable to use difference or shared metering for enabling TPA, it was discussed how the theoretical basis for the problems identified with the existing TPA processes for domestic and small business customers does not extend to larger customers. Larger customers are more able to establish difference metering arrangements than smaller customers because they have greater leverage with suppliers than smaller customers, because of their larger supply volumes. Also, unlike domestic and small business customers, they require as standard a half hourly settled tariff, meaning an HHDC and HHMOA, who can be enrolled in a difference metering arrangement, must be appointed as standard by their TPS.

As such, it was determined that there is currently no strong case for expanding the solution to larger customers.

However, considering the opportunity for On-Site Aggregation to help address the issue of how fixed DUoS charges are applied on PN sites with TPA (as described above), it was discussed that there may in time be an argument to expand the solution to larger non-domestic customers. Particularly if larger non-domestic customers on PNs are identified who are struggling to implement difference metering, or who would welcome use of On-Site Aggregation it if lowers their costs.

Moreover, it was noted that implementation of On-Site Aggregation could help increase visibility within industry of larger non-domestic customers on PNs, as well as the domestic and small business customers who are a focus of the solution. This may lead to identification of larger non-domestic customers who are poorly served by the existing TPA arrangements and require expansion of On-Site Aggregation (or implementation of an alternative solution if one is developed). By contrast, if On-Site Aggregation is not implemented, the number and nature of customers who are connected to private networks and supplied by PNOs will remain largely invisible to industry.

As such, while determining to retain the proposed focus of P455 on domestic and small business customers, the Workgroup noted that it will be possible for a follow up modification to seek to expand the On-Site Aggregation solution to larger customers at a later date, if this was deemed helpful or necessary.

ToR j) Is it right that the MSIDs of Customers of a PN should be de-energised instead of logically disconnected, in order to minimise barriers to the Customer subsequently choosing a third party supply? Are there other ways in which the need to swap customers meters when they move in and out of schemes could be reduced/avoided?

Workgroup discussions

The Proposer started by explaining the differences between de-energisation and disconnection.

De-energisation means de-energisation in relation to any Boundary Point or Systems Connection Point (or the Plant or Apparatus connected to any System at such a point) the movement of any isolator, breaker or switch or the removal of any fuse whereby no electricity can flow at such point to and from a System; and "de-energised" shall be construed accordingly. Once complete, the MSID is expected to be re-energised.

Disconnection implies the total removal of an MSID from industry systems and removal of registration data from industry systems.

For a Customer with an existing MSID who chooses to be supplied by a PN, the correct process today is a logical disconnection, such that the MSID is removed from industry systems, while the physical electrical connection to Customers property is left intact.

The Workgroup then considered whether de-energisation might be better for the Customer rather than logical disconnection, where the Customer must request creation of a new MPAN to move to a Third Party Supply arrangement. However, since we expect the physical meters associated with the MSID to be removed if such a customer joins an On-Site Aggregation, de-energisation was expected to create confusion within industry, since there is no meter left in place that can simply be de-energised.

Outcome

The Workgroup agreed that logical disconnection seems to be the best procedure to follow.

Responses to the Assessment Consultation

Is it right that the MSIDs of Customers of a PN should be de-energised instead of logically disconnected, in order to minimise barriers to the Customer subsequently choosing a third party supply? Are there other ways in which the need to swap customers meters when they move in and out of schemes could be reduced/avoided?			
Yes	No	Neutral/No Comment	Other
1	4	1	1

The majority of the responses agreed with the Workgroup's position that a logical disconnection is more appropriate. One respondent backed up their response by explaining that when a TPS takes over a site within a PNO's domain, it is expected to involve a complete disconnection of the existing registered supply and a replacement of the metering equipment (a meter swap). This process ensures accurate Metering Technical Details (MTD) for the site under the new TPS. However, there is no certainty that the TPS will maintain the existing meter setup, which means that the processes of de-energisation and re-energisation might offer limited advantages and could result in inaccurate data in some cases.

ToR k) Is it right for the solution not to be captured under the complex site arrangements within BSC?

Workgroup discussions

Elexon explained that a Metering System is defined as Complex where the primary Meter Technical Details flow is insufficient to allow the HHDC to correctly interpret and process the metered data for Settlement purposes.

In almost all cases a Complex Site is concerned with the differencing of one or more Meters from another (X-Y). Under BSCP502 On-Site Aggregation is very similar to a process called off-site totalisation which the BSCP makes explicitly clear should **not** be considered Complex. The Workgroup discussed different implementation examples under

totalisation and its interaction with the On-Site Aggregation method, and both work under P455.

Outcome

The Workgroup agreed that the On-Site Aggregation method should not be considered a Complex Site, and that implementation notes will be added to the P455 documentation.

Responses to the Assessment Consultation

Is it right for the solution not to be captured under the complex site arrangements within BSC?			
Yes	No	Neutral/No Comment	Other
6	1	0	0

The majority of the responses agreed with the Workgroup that the On-Site Aggregation method should not be considered under the Complex Sites arrangements.

As one of the respondents explained, On-Site Aggregation is a different and more appropriate solution for domestic and small business customers.

The response that disagreed did so on the basis that they believed adding the On-Site Aggregation method to the Complex Sites would provide a higher level of scrutiny. This point was discussed during the engagement between Elexon, the respondent and the Proposer and explained as part of the Workgroup meeting 6. It was explained that the testing and compliance requirements for On-Site Aggregation sites are the same standard as required for Complex Sites, and so the level of scrutiny would be the same. With this ToR, the intention was to simply corroborate if the proposed methodology should be classify as a Complex Site, not to determine levels of scrutiny related to its implementation.

ToR l) Is a physical boundary meter required to implement the solution, and should it be?

Workgroup discussions

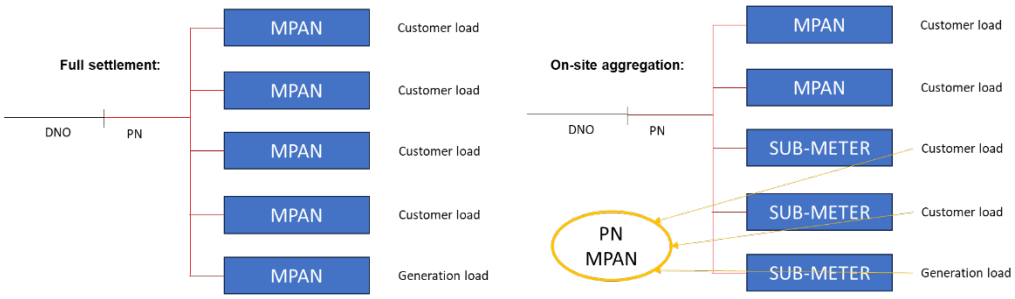
The Proposer explained why he does not believe a boundary meter is required after having consulted with several DNOs and reviewed the BSC with Elexon.

Definitions within the BSC were shown to allow implementation of the solution without a boundary meter, since each exit/entry from the PN will have a metering point, which will be associated with an MPAN (i.e. for the PN as a whole).

Furthermore, a PN with on-site aggregation applied is metered in the same way as a PN with full settlement applied. The only difference is the PN meters are aggregated to make the ‘PN MPANs’ (i.e. import and export).

An implication from not having a physical boundary meter was identified for how the measurement class of the On-Site Aggregation is set. Generally there would be no change since the Measurement Classes are set in relation to the MPAN data. But Measurement Classes E and G are differentiated by physical Meter type (i.e. Current Transformer and Whole Current respectively). To accommodate this for On-site Aggregation, where there is no single physical meter associated with an MPAN, sites with On-site Aggregation applied

would be differentiated between Measurement Classes E and G in relation to a maximum demand limit of 69kW, reflecting the point at which a CT Meter would need to be installed instead of whole current. Having reviewed this process with several DNOs, the Proposer concluded this was a simple and straightforward method for allocating measurement class to the PN aggregation MPANs.



Outcome

The Workgroup agreed that a physical boundary meter is not required, since the calculations required to fulfil the aggregation methodology do not use data from a boundary meter.

Responses to the Assessment Consultation

Is a physical boundary meter required to implement the solution, and should it be?			
Yes	**No**	**Neutral/No Comment**	**Other**
2	5	0	0

The majority of the responses were aligned with the Workgroup's views that a boundary meter is not required.

Those respondents that disagreed did so believing it is needed to determine if the correct units are being recorded for any TPA site.

ToR m) What are the arguments for and against creation of a new market role for PNOs (e.g. access to industry data access; market competition)?

Workgroup discussions

The Workgroup discussed how P455 was proposed to be delivered by existing accredited industry parties (i.e. HHDC/HHMOA). These parties may choose to work with another party/ies, including a PNO, on the delivery of their requirements, so long as the relevant standards are achieved. This was considered to be a robust design for implementing the solution, without need to formalise a role for PNOs.

It was noted that if the solution proved to be popular, in time there could be an argument for a new industry role for PNOs, but that this could be looked at later on, if deemed helpful or necessary. For now, the creation of a new market role for PNOs therefore seems unnecessary and would cause a larger amount of work and delay to implementation.

Outcome

The Workgroup agreed that there should not be a new market role for PNOs.

Responses to the Assessment Consultation

This was an open text question.

The majority of the respondents believed that the creation of a new market role for this scheme is out of scope due to time constraints.

It was noted that one of the main aims for this Modification is to increase competition. One respondent suggested that creating a new market role would inhibit competition, increase costs, increase delays and introduce unwarranted complexity to the market.

One of the respondents believed a new market role was needed to ensure that the industry has better visibility of PNO. However, this visibility will be achieved by the On-Site Aggregation database that will be maintained by Elexon. The respondent accepted this was the case during the discussions in WG meeting 6.

7 Workgroup's Conclusions

The Workgroup provided its final views on the P455 Proposed Modification against the Applicable BSC Objectives during Workgroup meeting 6 on 20 February 2024.

The Workgroup unanimously believe that P455 Modification would overall better facilitate the Applicable BSC Objectives compared with the existing baseline and so should be approved.

One of the Voting Members had a slightly different view based on his unfamiliarity with the BSC Objectives. After the Workgroup clarified the aim of the objectives, they were in agreement with the Proposer's views.

Members' views against each of the Applicable BSC Objectives are summarised below:

Does P455 better facilitate the Applicable BSC Objectives?		
Obj	Proposer's Views	Other Workgroup Members' Views[14]
(a)	• Neutral	• Neutral
(b)	• Neutral	• Neutral
(c)	• **Positive**	• **Positive (unanimous)**
(d)	• Neutral	• Neutral
(e)	• **Positive**	• **Positive (unanimous)**
(f)	• Neutral	• Neutral
(g)	• Neutral	• Neutral

The Proposer and Workgroup believe that P455 is positive against the baseline and should therefore be **approved**.

The P455 Proposer believes that the Modification better facilitates Applicable Objectives (c) and (e).

Applicable BSC 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 Proposer believes that the proposed Modification improves access to TPSs for small 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.

The Workgroup unanimously agreed with this view.

Applicable BSC Objective (e) - Compliance with the Electricity Regulation and any relevant legally binding decision of the European

[14] Shows the different views expressed by the other Workgroup members – not all members necessarily agreed with all of these views.

What are the Applicable BSC Objectives?

(a) The efficient discharge by the Transmission Company of the obligations imposed upon it by the Transmission Licence

(b) The efficient, economic and co-ordinated operation of the National Electricity Transmission System

(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

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

(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]

(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

(g) Compliance with the Transmission Losses Principle

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).

The Workgroup unanimously agreed with this view.

Response to the Assessment Consultation

Do you agree with the Workgroup's initial unanimous view that P455 does better facilitate the Applicable BSC Objectives than the current baseline?			
Yes	**No**	**Neutral/No Comment**	**Other**
6	1	0	0

Responses were largely supportive, especially regarding BSC Objective (c). It was recognised that the P455 solution is expected to enhance competition within the electricity generation and supply sectors, focusing specifically on improving conditions for domestic and small non-domestic customers.

As explained above, the response that disagreed with the Workgroup's views argued that due to the solution only dealing with a small part of the TPA arrangements it does not better facilitate any of the BSC Objectives. Also, the respondent argued Objective (d) could be negatively impacted if utilised by a large number of customers, since it could create significant additional work for the BSC and existing industry parties.

As discussed above, the On-Site Aggregation methodology is a voluntary scheme, which should not increase non-participating industry parties' workload. Also, it is not within the scope of the scheme to cover larger sites, since those can be treated as part of the Complex Sites arrangements.

After Workgroup meeting 6, the respondent that stated that, even while concerns regarding the scalability of the scheme remained, he agreed that something needed to be done on TPA, that the proposed P455 Modification was the only solution currently available, and that the proposed central database mitigated some of the risks related to scaling that they felt existed.

Self-Governance

The Proposer and Workgroup agreed that P455 should not be progressed as a Self-Governance Modification, on the basis that it should be considered by the Authority in the context of other DCUSA and MHHS consequential changes.

EBGL Article 18 Terms and Conditions

The Workgroup initially assessed that P455 would not impact EBGL Article 18 Terms and Conditions. Elexon legal counsel has since stated that addition of a paragraph to Section 2

of Section K means potential impacts on the EBGL Article 18 Terms and Conditions should be consulted on.

8 Recommendations

The P455 Workgroup invites the Panel to:

- **AGREE** that the P455:
    - **DOES** better facilitate Applicable BSC Objective (c);
    - **DOES** better facilitate Applicable BSC Objective (e);
- **AGREE** an initial view that P455 **should not** be treated as a Self-Governance Modification;
- **AGREE** that P455 **DOES** impact the EBGL Article 18 terms and conditions held within the BSC;
- **AGREE** that P455 is neutral against the EBGL objectives as it does not impact requirements for becoming a responsible balancing party;
- **AGREE** an initial recommendation to the Authority that P455 should be **approved**;
- **AGREE** an initial Implementation Date for P455 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.
- **AGREE** the draft Legal Text;
- **AGREE** the draft amendments to the Code Subsidiary Documents;
- **AGREE** that P455 is submitted to the Report Phase; and
- **NOTE** that Elexon will issue the P455 Draft Modification Report (including the draft BSC Legal Text) for a one month consultation that will also constitute an EBGL Consultation and will present the results to the Panel at its meeting on 09 May 2024.

Appendix 1: Workgroup Details

Workgroup's Terms of Reference

Specific areas set by the BSC Panel in the P455 Terms of Reference	Conclusion
a) Does the proposed On-Site Aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)?	The conclusion was that the aggregated methodology produces the same settlement results as Difference Metering, but using a simplified method that, by not requiring involvement of Third Party Supplied Customers, their Suppliers, or their Suppliers' agents, makes it easy for Customers to choose Third Party Suppliers.
b) What testing should be required to validate the solution is correctly implemented, and should this include an unmetered load tests?	The conclusion was that, in addition to the proposed test being extremely costly to implement for negligible gain, since Difference metering does not solve instances of existing unmetered loads, P455 should not have to solve them either. A site comparable in scope to a Complex Site Validation Test was argued to be sufficient to test the On-Site Aggregation Method and should be applied to P455. The Aggregation Method is not only proposed to apply to large I and C and so it was noted that the risk of unmetered loads could still be picked up in larger Metering Systems where difference metering is applied more often and correctly.
c) Is it right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters, given private network operators are responsible for these meters on a day-to-day basis, and given the move to new arrangements under MHHS?	The Workgroup agreed that it is right that the boundary meter HHDC and HHMOA are responsible for operations related to the sub-meters.
d) Is it right that the sub-meters should conform to COP10 standards?	The Workgroup agreed with limiting the P455 to Import only sub-meters CoP10 compliant.

Specific areas set by the BSC Panel in the P455 Terms of Reference	Conclusion
e) 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 his central register? Do PNOs/DNOs have all the necessary data to manage schemes?	The WG concluded this form was required, Similar to the Complex Site Supplementary Information Form, Elexon created an On-Site Aggregation Metering System Form. This form will be required to be sent to BSCCo by the MOA so that we can create the central repository. A copy of is within the Attachment C.
f) Is there an impact on BSC Metering Dispensations?	The Workgroup concluded that there are no impacts on BSC Metering Dispensations.
g) Is this proposal independent from any DCUSA change?	The Workgroup concluded that P455 is independent from any DCUSA change.
h) Is a Cost-Benefit Analysis required?	The WG believe a NBA is not required. The Proposer and Elexon are engaging with Ofgem to see if they need a Cost-Benefit analysis for their decision.
i) Is it right that the scheme is limited to sub-100kW sites?	The Workgroup agreed that it is not the scheme that is limited to 100kW, but the Import only Metering Equipment comprised within the On-Site Aggregation Metering System.
j) Is it right that the MSIDs of Customers of a PN should be de-energised instead of logically disconnected, in order to minimise barriers to the Customer subsequently choosing a third party supply? Are there other ways in which the need to swap customers meters when they move in and out of schemes could be reduced/avoided?	The Workgroup agreed that logical disconnection seems to be the best procedure to follow.
k) Is it right for the solution not to be captured under the complex site arrangements within BSC?	The Workgroup agreed that the On-Site Aggregation method should not be considered a Complex Site, and that implementation notes will be added to the P455 documentation.
l) Is a physical boundary meter required to implement the solution, and should it be?	The Workgroup agreed that a physical boundary meter is not required.
m) What are the arguments for and against creation of a new market role for PNOs (e.g. access to industry data access; market competition)?	The Workgroup agreed that there should not be a new market role for PNOs.

Assessment Procedure timetable

P455 Assessment Timetable	
Event	Date
Panel submits P455 to Assessment Procedure	8 June 2023
Workgroup Meeting 1	12 September 2023
Workgroup Meeting 2	31 October 2023
Workgroup Meeting 3	22 November 2023
Workgroup Meeting 4	27 November 2023
Workgroup Meeting 5	12 December 2023
Assessment Procedure Consultation	15 December 2023 – 19 January 2024
Workgroup Meeting 6	20 February 2024
Panel considers Workgroup's Assessment Report	14 March 2024

Workgroup membership and attendance

P451 Workgroup Attendance							
Name	Organisation	12 Sep 23	31 Oct 23	22 Nov23	27 Nov 23	12 Dec 23	20 Feb 24
Non-voting members							
Ivar Macsween	Elexon (Chair)	✓	✓	n/a	n/a	n/a	n/a
Patrick Matthewson	Elexon (Chair)	n/a	n/a	✓	✓	✓	✓
Cecilia Portabales	Elexon (Lead analyst)	✓	✓	✓	✓	✘	✓
Jacob Snowden	Elexon (Lead analyst)	n/a	n/a	n/a	n/a	✓	n/a
Christopher Day	Elexon (Subject Matter Expert)	✓	✓	✓	✓	✓	✓
Lee Walker	Elexon (Market Design)	✓	✓	✓	✓	✓	✓
Rosalind Archer	Elexon (Lead lawyer)	✓	✓	✓	✓	✓	n/a
Voting Members							
Reg Platt	Emergent Energy (Proposer)	✓	✓	✓	✓	✓	✓
Andrew Colley	SSE plc	✓	✓	✓	✓	✓	✓
Gary Watts	Gateshead Council	✓	✓	✓	✓	✓	✓
James Page	Joju Solar	✓	✓	✓	✓	✓	✓
Marcus Wood	Clean Energy Prospector Ltd.	✘	✓	✓	✓	✓	✓

P451 Workgroup Attendance							
Name	Organisation	12 Sep 23	31 Oct 23	22 Nov23	27 Nov 23	12 Dec 23	20 Feb 24
Nik Willis	Stark	✓	✓	✓	✓	✓	✓
George Donoghue	SNRG	✓	✓	✓	✓	✓	✓
Non-voting Participants							
Alex Travell	BUUK	✓	✓	✗	✓	✗	✗
Brian Boswell	Energy Solutions Ltd	✓	✓	✓	✓	✗	✗
Emily Waters	BUUK	✗	✓	✗	✗	✓	✗
James Hardy	REC	✗	✗	✓	✓	✓	✓
Jenny Rawlinson	BUUK	✗	✗	✓	✓	✓	✓
Matthew Hall	MHHS Programme	✗	✓	✓	✓	✗	✗