

P455 Digital Meeting Etiquette

- Welcome to the P455 Workgroup meeting 4 – we'll start shortly
- No video please to conserve bandwidth
- Please stay on mute unless you need to talk – use IM if you can't break through
- Talk – pause – talk
- Lots of us are working remotely – be mindful of background noise and connection speeds

Slido Guidance

- We would love to gather your thoughts using Slido as we move through today's session. We hope this is an engaging experience.
- Everyone should be able to vote and answer questions live during the presentation using Slido

Requirements:

- Internet access
- Web browser
- Participants can join at slido.com with **#3643315**

Joining as a participant?

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ELEXION

**P455 'On-Site Aggregation as a method to
facilitate Third Party Access'**

Meeting 4

27 November 2023

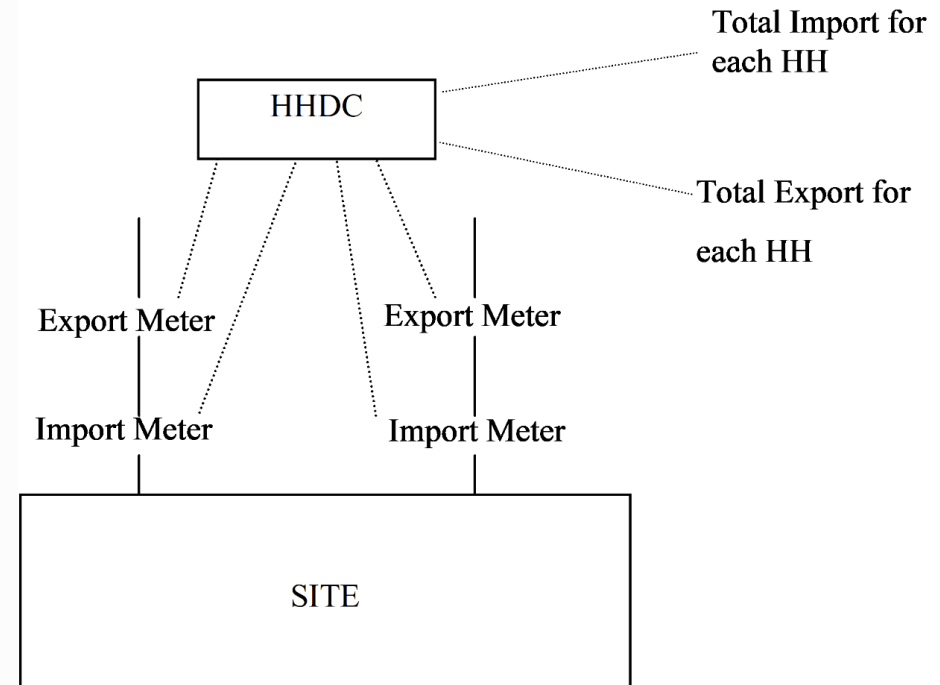
Meeting Agenda

| Agenda Item | Lead |
|---|--|
| 1. Welcome and meeting objectives | Patrick Matthewson (Elexon) – Chair |
| 2. An exploration of implementation details | Reg Platt (Emergent) - Proposer |
| 3. ToR Status Review | Cecilia Portabales (Elexon) – Lead Analyst |
| 4. Views on BSC Applicable Objectives | Patrick Matthewson |
| 6. Next steps | Cecilia Portabales |
| 7. Meeting close | Patrick Matthewson |

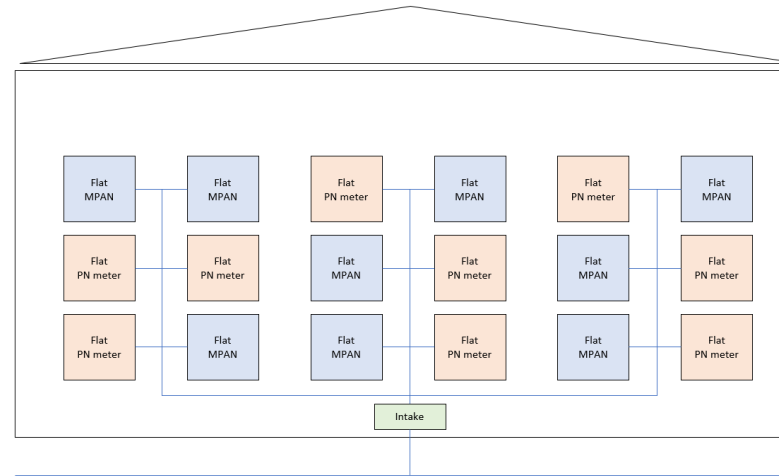


AN EXPLORATION OF IMPLEMENTATION DETAILS

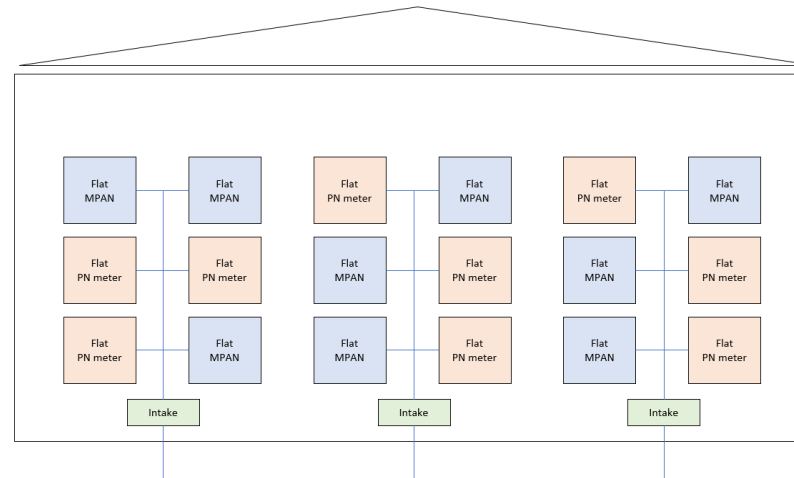
- The similarity of the aggregation methodology to 'totalisation' was discussed in WG3
- Totalisation, as shown right, can include scenarios where a site has multiple feeders, but one set of MSIDs (i.e. for import and export)
- I wanted to explore the relevance of this idea to the aggregation methodology



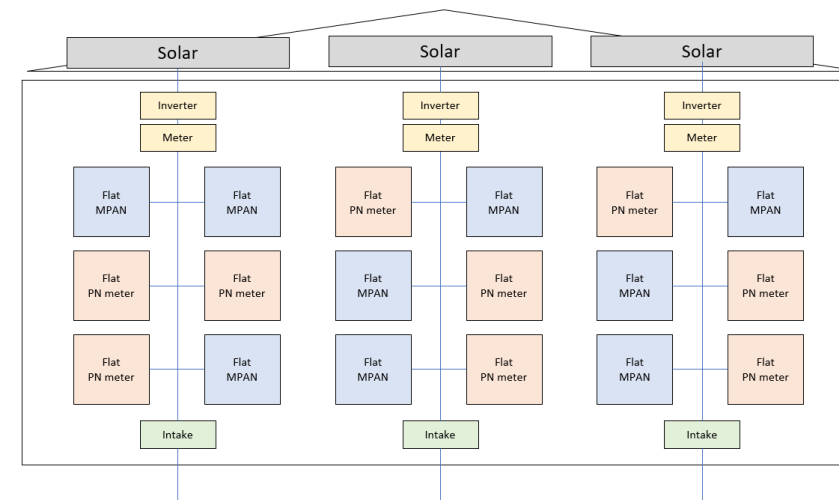
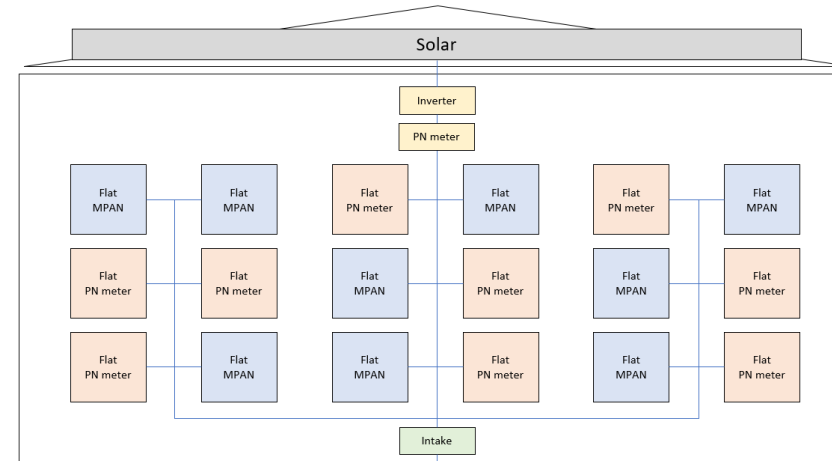
- Some buildings have a single DNO intake



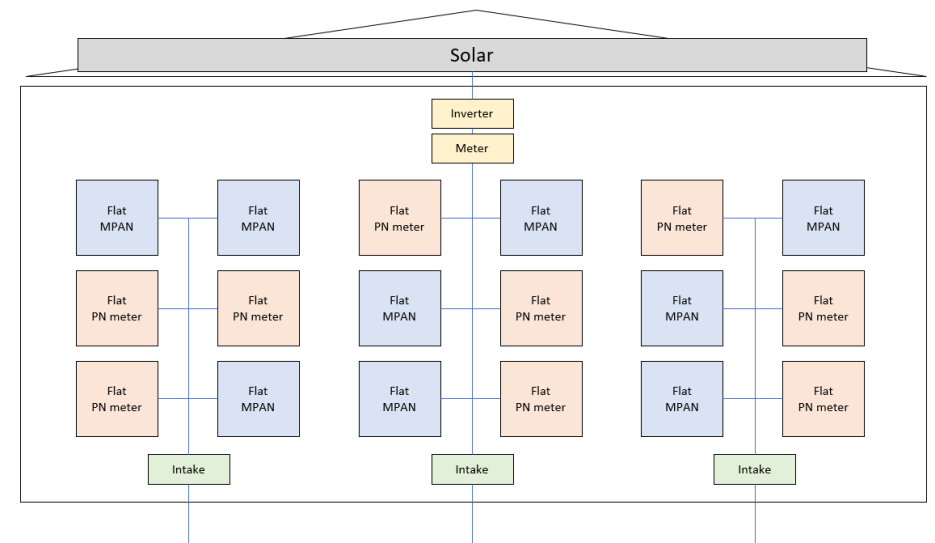
- Some buildings have multiple DNO intakes



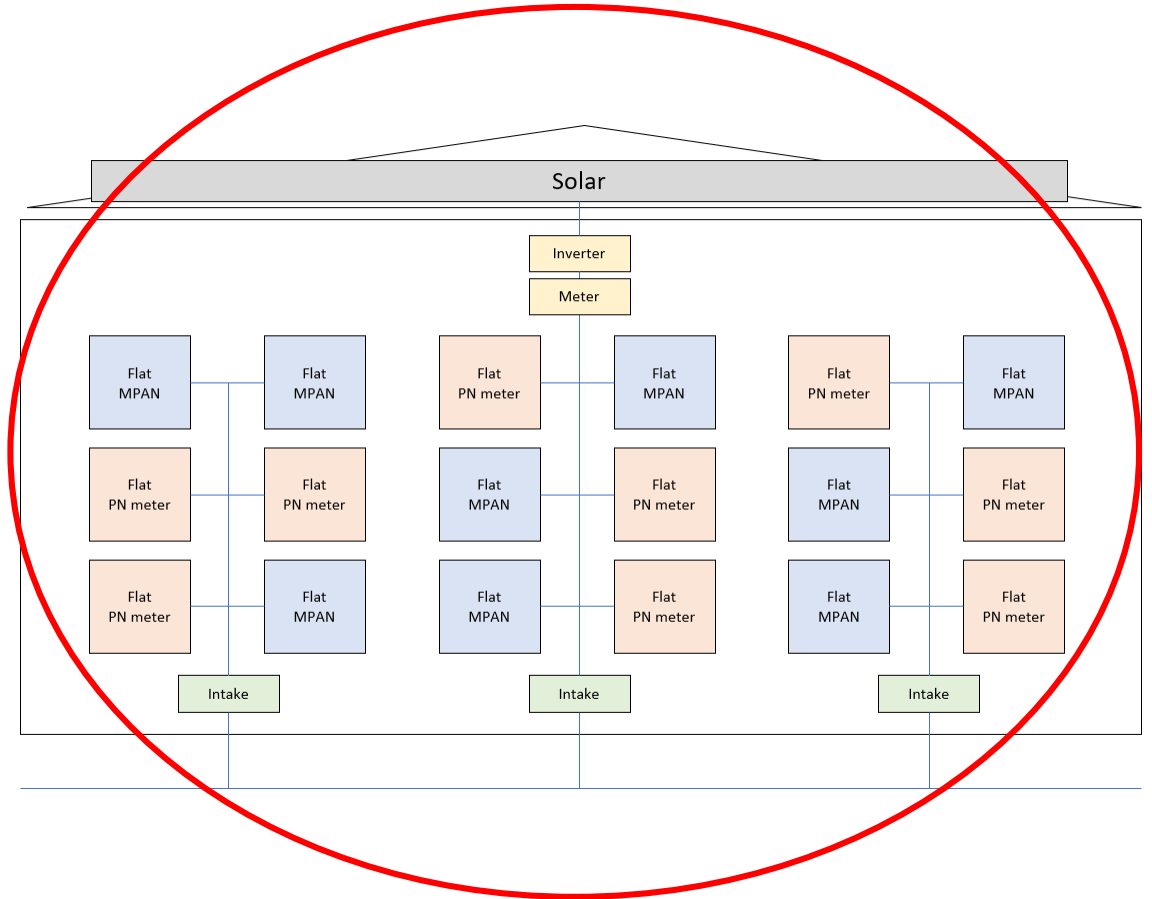
- The aggregation methodology applies to a PN – i.e. a license exempt network with a connection point to the Distribution System (DNO/IDNO).
- In the top example, there is therefore clearly just one ‘aggregation MPAN’ for the whole building.
- In the below example, my assumption was there would need to be 3 ‘aggregation MPANs’ for the building, one for each intake/PN.
- As a result, to supply the PNs on the below example, a solar system might need to be divided into 3 separate systems, with individual inverters and meters.



- BSC Objective (d), a focus for this mod, is to promote efficiency in the implementation of the balancing and settlement arrangements.
- For a single building with multiple intakes/PNs, being required to divide a solar system into multiple systems for the purposes of settlement seems unnecessarily costly and inefficient.
- If dividing the solar system was not required (see right), by reducing the amount of hardware required, the costs of installing a scheme can be reduced, resulting in lower bills for customers and lower decarbonisation costs for UK PLC.
- Given the example for totalisation above, and with reference to existing DNO practices, we have therefore examined whether dividing the solar system is necessary, and our understanding is it is not.
- We intend to detail relevant information from the following slides as implementation notes, alongside the BSC changes.

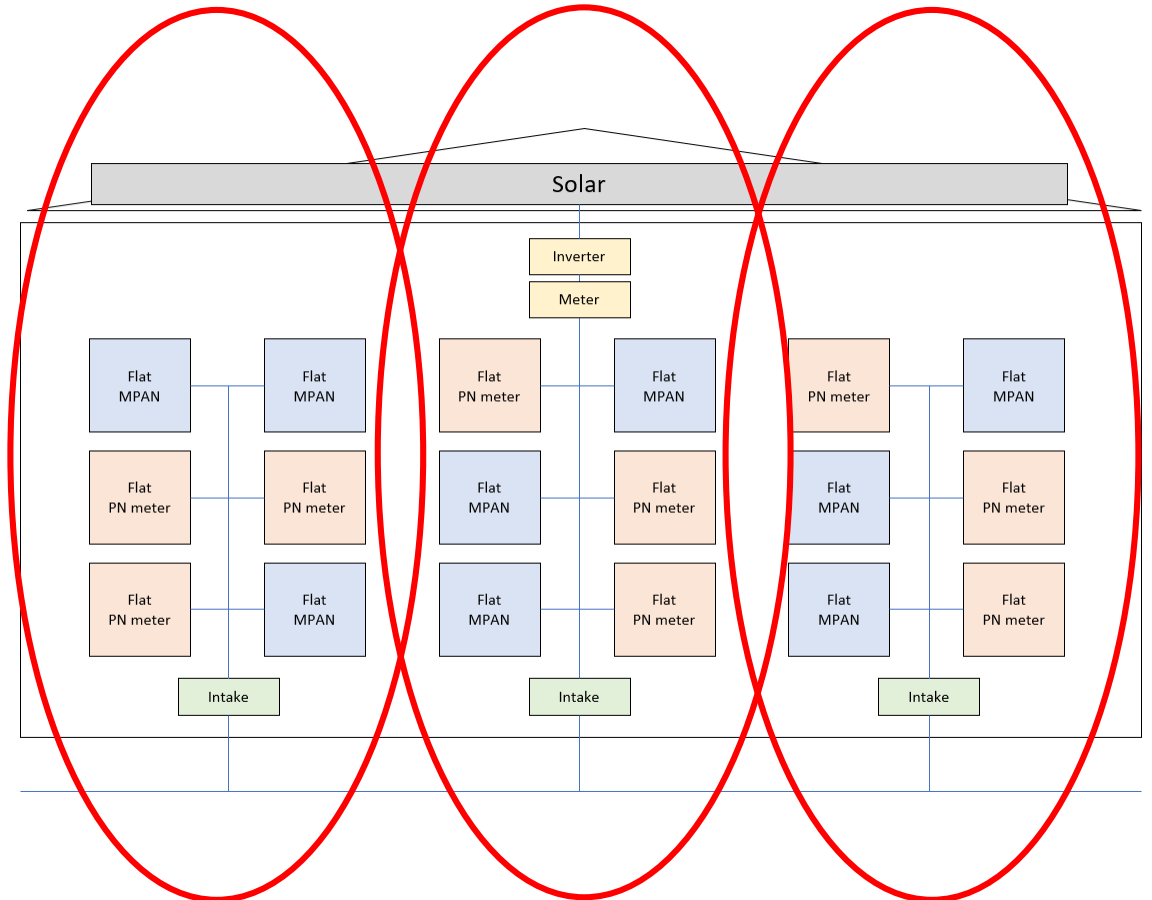


- On single buildings that are MPAN metered at the boundary, while some DNOs require a single MPAN per intake, others are happy for a single MPAN to cover the building.
- In part, this appears linked to the fact that data linking individual intakes to properties within buildings is poor / difficult to access. So DNOs will often work at the scale of a building.
- Where one MPAN was applied for a building, regardless of intakes, there would only need to be one aggregation MPAN, and therefore only one point of solar connection to the building PN.



**IMPLEMENTATION OPTION 1:
ONE AGGREGATION MPAN
PER BUILDING**

- Where a building has multiple aggregation MPANs (perhaps due to DNO policy) it is still possible to limit the amount of hardware installed through a relatively simple adjustment to the aggregation methodology, akin to totalisation.
- Essentially, instead of dividing a solar system output physically, using extra inverters and meters, we can divide it through the maths.
- The result for settlement is the same.

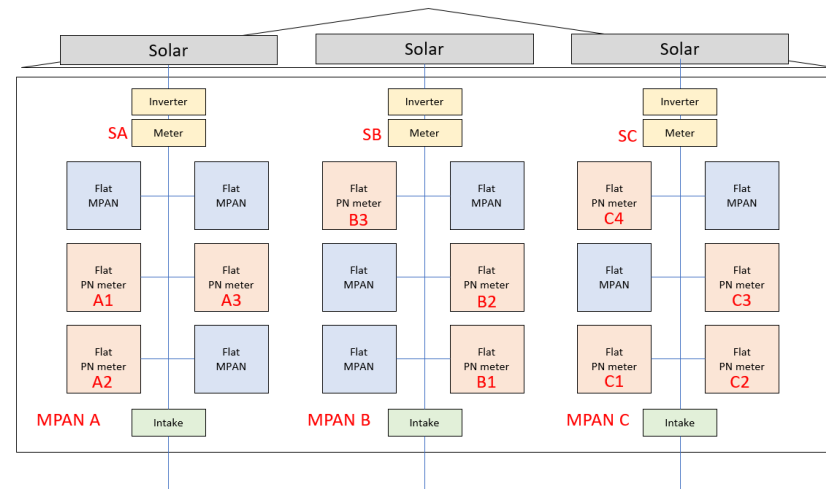


**IMPLEMENTATION OPTION 2:
THREE AGGREGATION MPANS
PER BUILDING**

Example 1



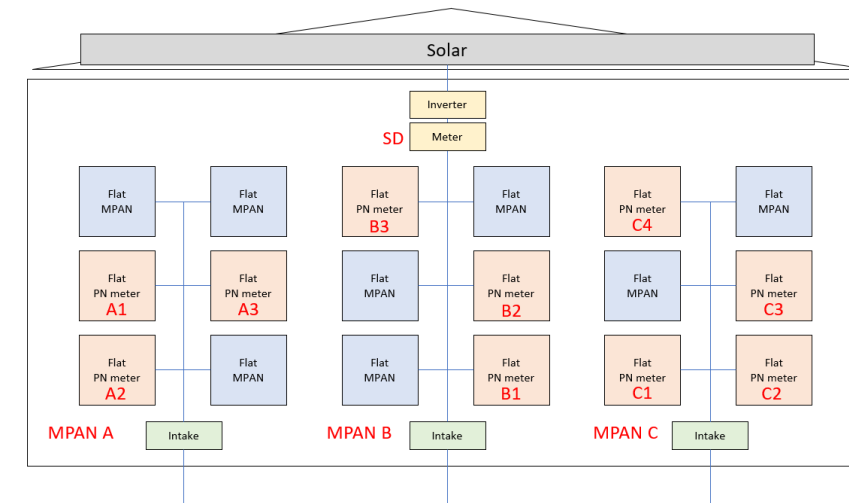
Basic aggregation calculation =
all PN export loads - all PN import loads



Below assumes SA, SB and SC evenly sized

MPAN A = $SA - (A1 + A2 + A3)$ $10 - (2 + 8 + 1) = 1$ Import
MPAN B = $SB - (B1 + B2 + B3)$ $10 - (4 + 1 + 0) = 5$ export
MPAN C = $SC - (C1 + C2 + C3 + C4)$ $10 - (5 + 7 + 4) = 6$ Import

Adapted aggregation calculation =
export load allocation per PN - all
PN import loads



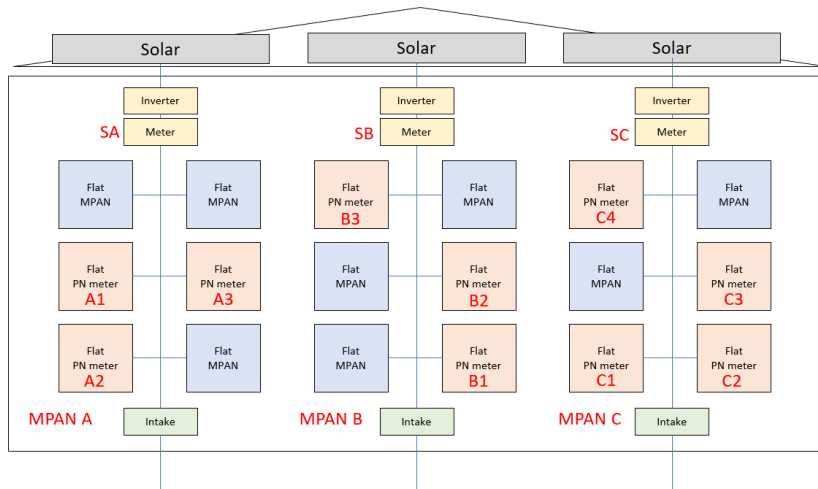
Below the metered solar output (the aggregate output from the figure on the left) is divided evenly between the MPANs.

MPAN A = $(SD/3) - (A1 + A2 + A3)$ $(30/3) - (2 + 8 + 1) = 1$ Import
MPAN B = $(SD/3) - (B1 + B2 + B3)$ $(30/3) - (4 + 1 + 0) = 5$ export
MPAN C = $(SD/3) - (C1 + C2 + C3 + C4)$ $(30/3) - (5 + 7 + 4) = 6$ Import

Example 2



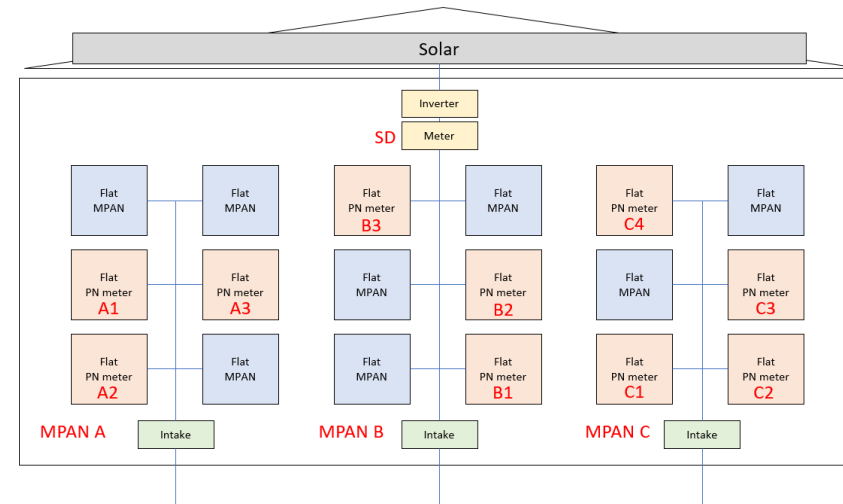
Basic aggregation calculation =
all PN export loads - all PN import loads



Below assumes SA, SB and SC differently sized

$$\begin{aligned} \text{MPAN A} &= \text{SA} - (\text{A1} + \text{A2} + \text{A3}) & 5 - (2 + 8 + 1) &= 6 \text{ Import} \\ \text{MPAN B} &= \text{SB} - (\text{B1} + \text{B2} + \text{B3}) & 10 - (4 + 1 + 0) &= 5 \text{ export} \\ \text{MPAN C} &= \text{SC} - (\text{C1} + \text{C2} + \text{C3} + \text{C4}) & 15 - (5 + 7 + 4) &= 1 \text{ export} \end{aligned}$$

Adapted aggregation calculation =
export load allocation per PN - all
PN import loads



Below the metered solar output (the aggregate output from the figure on the left) is divided differently between the MPANs based on an allocation schedule.

$$\begin{aligned} \text{MPAN A} &= (\text{SD}/6) - (\text{A1} + \text{A2} + \text{A3}) & (30/6) - (2 + 8 + 1) &= 6 \text{ Import} \\ \text{MPAN B} &= (\text{SD}/3) - (\text{B1} + \text{B2} + \text{B3}) & (30/3) - (4 + 1 + 0) &= 5 \text{ export} \\ \text{MPAN C} &= (\text{SD}/2) - (\text{C1} + \text{C2} + \text{C3} + \text{C4}) & (30/2) - (5 + 7 + 4) &= 1 \text{ export} \end{aligned}$$

- We believe no changes are needed to the proposed aggregation methodology to support the above examples.
- But to ensure there is clarity for industry, and avoid disagreements, we intend to detail relevant information from above as implementation notes, alongside the BSC changes.



TOR STATUS REVIEW

P455 specific Terms of Reference

| ToR | Details | Status | How? |
|-----|---|--------|------|
| a) | Does the proposed on-site aggregation methodology result in accurate settlement outcomes (particularly in relation to difference metering)? | ✓ | |
| b) | What testing should be required to validate the solution is correctly implemented, and should this include an unmetered load tests? | ✓ | |
| 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? | ✓ | |
| d) | Is it right that the sub-meters should conform to COP10 standards? | ✓ | |
| 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? | ✓ | |
| f) | Is there an impact on BSC Metering Dispensations? | ✓ | |
| g) | Is this proposal independent from any DCUSA change? | ✓ | |

P455 specific Terms of Reference

| ToR | Details | Status | How? |
|-----|--|--------|------|
| h) | Is a Cost-Benefit Analysis required? | | |
| i) | Is it right that the scheme is limited to sub-100kW sites? | ✓ | |
| 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? | ✓ | |
| k) | Is it right for the solution not to be captured under the complex site arrangements within BSC? | ✓ | |
| l) | Is a physical boundary meter required to implement the solution, and should it be? | ✓ | |
| 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)? | | |

P455 standard Terms of Reference

We will go through this ToR during the December meeting

| ToR | Details | Status | How? |
|-----|--|--------|---|
| n) | How will P455 impact the BSC Settlement Risks? | | |
| o) | What changes are needed to BSC documents, systems and processes to support P455 and what are the related costs and lead times? When will any required changes to subsidiary documents be developed and consulted on? | | |
| p) | Are there any Alternative Modifications? | | |
| q) | Should P455 be progressed as a Self-Governance Modification? | | No. Since P455 materially impact the BSC, an Authority decision is required |
| r) | Does P455 better facilitate the Applicable BSC Objectives than the current baseline? | | |
| s) | Does P455 impact the EBGL provisions held within the BSC, and if so, what is the impact on the EBGL Objectives? | | No |
| t) | Does P455 impact MHHS? | | Yes. A Change Request is needed. |



INITIAL WORKGROUP VIEWS AGAINST APPLICABLE BSC OBJECTIVES

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

- P455 improves access to TPSs for customers on private networks. Removing this barrier 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.

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P455 WG views against Applicable BSC Objective c)

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

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

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P455 WG views against Applicable BSC Objective d)

① Start presenting to display the poll results on this slide.

Objective (e) – Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency [for the Co-operation of Energy Regulators]

- Due to a legally binding decision of the European Commission, domestic and small business customers on PN 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)

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P455 WG views against Applicable BSC Objective e)

① Start presenting to display the poll results on this slide.



NEXT STEPS

Progression plan

| Event | Date |
|---|-------------------------------------|
| Present IWA to Panel | 8 June 2023 |
| Workgroup meeting 1 – Background and introduction to the process. Why is a new solution needed? | 12 September 2023 |
| Workgroup meeting 2 – Does the new solution work? Evidence from Emergent’s Sandbox | 31 October 2023 |
| Workgroup meeting 3 – How will the solution work in detail? Validate the proposed solution | 22 November 2023 |
| Workgroup meeting 4 – Remaining ToR | 27 November 2023 |
| Workgroup meeting 5 – Review of legal text and standard ToR | 12 December 2023 |
| Assessment Procedure Consultation (15 WDs) | 13 December 2023 – 10 January 2024 |
| Workgroup meeting 6 | January 2024 |
| Present Assessment Report to Panel | February 2024 |
| Report Phase Consultation | 12 February 2024 – 23 February 2024 |
| Present Draft Modification Report to Panel | March 2024 |
| Issue Final Modification Report to Authority | March 2024 |

ELEXON

THANK YOU

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27 November 2023