# P441 Digital Meeting Etiquette

- Welcome to the P441 Workgroup meeting 2 – 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

# P441 ‘Creation of Complex Site Classes’

Meeting 2

6 December 2022

# Meeting Agenda

Objectives for this meeting:

- Reconvene the P441 Workgroup
- Consider the P441 Terms of Reference c), d), e) and f)
- Consider any potential solution(s) which may require further development for discussion at future meetings
- Confirm the next steps

| Agenda Item | Lead |
|---|---|
| 1. Welcome and meeting objectives | Keren Kelly (Elexon) – Chair |
| 2. Actions and Recap of Workgroup meeting 1 | Stanley Dikeocha (Elexon) – Lead Analyst |
| 3. Terms of Reference (ToR) | Stanley Dikeocha |
| 4. ToR C ‘What MSIDs need to be registered for each Complex Site Class?’ | John Lucas (Elexon) – Design Authority |
| 5. Impact of Class 5 Complex Sites on Network and BSC Charges | John Lucas & Joseph Henry (NGESO) |
| 6. Class 5 Complex Site – Notification to Elexon | Christopher Day (Elexon) - Subject Matter Expert |
| 7. Class 5 Complex Site – Central Register | Christopher Day |
| 8. Next steps | Stanley Dikeocha |
| 9. Meeting close | Keren Kelly |

# ACTION AND RECAP OF WORKGROUP 1

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## Action and Recap of Workgroup 1

- Explained the background, issue and potential solution for P441
  - Recommended by the Issue 88 WG
  - Ambiguity around when a Complex Site Class can be used
  - Create six classes and formalise the process around when to use each Complex Site Class

- Discussed and initially agreed that P441 **should not be** treated as a Self-Governance Modification (i.e. submitted to Ofgem for decision)

- Discussed and agreed the scope of P441 and the criteria for each Complex Site Class, noting the following suggestions from Workgroup members:
  - Consider aligning the definition of “site” under P441 with the definition in existing class exemptions; and
  - Including “storage and embedded generation” as a criteria for all Classes

- Discussed the impact of Class 5 Sites on Network Charges and BSC Charges, noting:
  - Seek views from LDSOs on the existing **DUoS charge** recovery mechanism with Suppliers;
  - Netting was welcomed on **BSUoS charges**. Clarity required on how LDSO provide data to NGESO for TNUoS charges
  - Continue the discussion on Distribution Line Loss Factors under the ToR c

# Action and Recap of Workgroup 1

| Responsible | Action | Outcome |
|---|---|---|
| Elexon | Update the criteria for all classes to include storage and embedded generation. | We have updated the criteria for each Class |
| Elexon | Contact LDSO/ENA and confirm their view on the proposed arrangement for DUoS charging | Initial feedback from some DNOs:<br>- Crossover between DCUSA Change DCP 328 and P441 for DUoS charging on private networks where associated MPAN has been created. |
| NGESO and Elexon | Confirm the TNUoS Charging arrangements between NGESO and LDSOs | Update to provided at the Second WG meeting. |



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# TERMS OF REFERENCE

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# P441 specific Terms of Reference

| ToR | Details |
|---|---|
| a) | Are the six classes identified by the Issue 88 Group correct? |
| b) | Define the criteria a site must meet to qualify for each Complex Site Class? |
| **c)** | **What MSIDs need to be registered for each Complex Site Class?** |
| **d)** | **What form should a central register of Class 5 Complex Sites take?** |
| **e)** | **How should the notification process of a Class 5 Complex Site operate?** |
| **f)** | **What impact do Class 5 Complex Sites have on Network Charges and BSC Charges?** |
| g) | Will the site arrangements be forward looking and not retrospective? |
| h) | What should be considered as "Local" and "primary" substations? |
| i) | What impact will P441 have on MHHS Programme? |



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# P441 standard Terms of Reference

| ToR | Details |
|---|---|
| j) | How will P441 impact the BSC Settlement Risks? |
| k) | What changes are needed to BSC documents, systems and processes to support P441 and what are the related costs and lead times? When will any required changes to subsidiary documents be developed and consulted on? |
| l) | Are there any Alternative Modifications? |
| m) | Should P441 be progressed as a Self-Governance Modification? |
| n) | Does P441 better facilitate the Applicable BSC Objectives than the current baseline? |
| o) | Does P441 impact the EBGL provisions held within the BSC, and if so, what is the impact on the EBGL Objectives? |
| p) | What other industry Codes are impacted by P441 |

# WHAT MSIDS NEED TO BE REGISTERED FOR EACH COMPLEX SITE CLASS?

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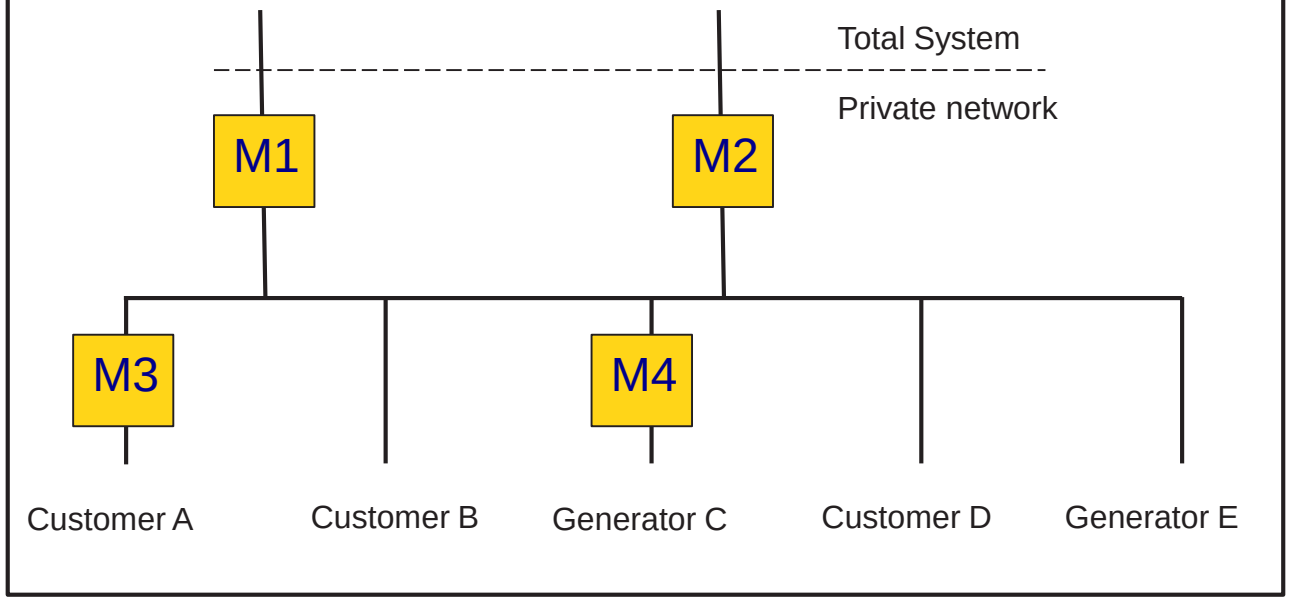
# Metering System Ids (MSIDs) for Class 1 and 2 Complex Sites

This is already documented in BSCP502 section 4.9.3.

Class 1 and 2 are used for private networks where some (but not all) customers have Settlement Meters and appoint their own Suppliers.

Class 1 is Import only, Class 2 Import and Export:

***Example of a Class 2 Complex Site***




***Note: this example is slightly more complicated than the one in BSCP502, because it shows a site with two Boundary Points.***

In this example:

- Customer A has an Import meter (and access to the Supply market)
- Generator C has an Import/Export meter (and access to the Supply market)
- Other customers and generators do not have Settlement meters, and buy (or sell) power from (or to) the Boundary Point Supplier

In this example, five MSIDs are required:

- Import MSID for Customer A
- Import MSID and Export MSID for Generator C
- Import MSID and Export MSID for net flows at the Boundary.
- HHDC uses differencing to calculate net flow at the Boundary, and allocates to either Import MSID or Export MSID:

  Net Flow at Boundary = (M1.AE – M1.AI) +

  (M2.AE – M2.AI) – (–M3.AI) – (M4.AE – M1.A4)

# Metering System Ids (MSIDs) for Class 3 and 4 Complex Sites

Class 3 and 4 Complex Sites are cases where power flows recorded on Boundary Point meters are not caused by demand or generation on the site. BSCP502 has a number of examples:

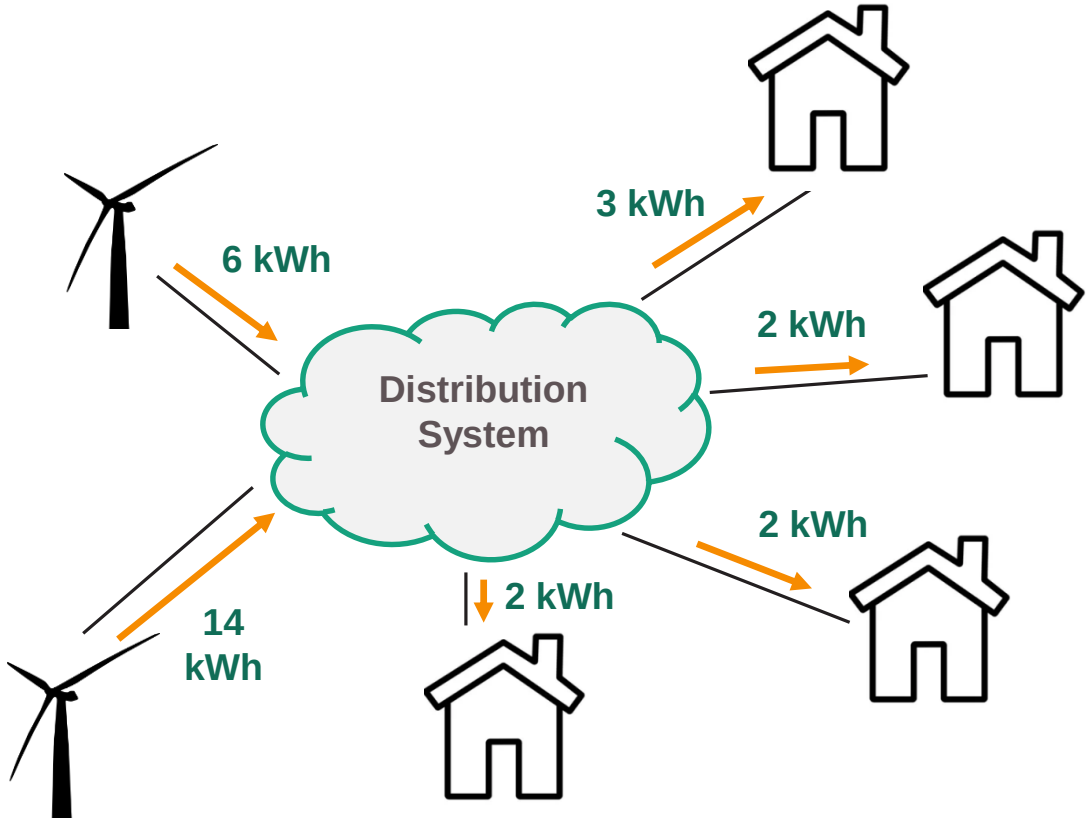
- Feed-Through Sites at the Same Voltage with no Embedded Generation (BSCP502 4.9.4)
- Feed Through Sites at Different Voltages (BSCP502 4.9.5)
- Feed-Through Sites with Embedded Generation (BSCP502 4.9.6)
- Network Flows Impacting Settlement Meters (BSCP502 4.9.8)

Examples without embedded generation are Class 3; those with embedded generation are Class 4.

No further work proposed, as the above examples give sufficient clarity on MSID registration.

# Example of a Class 5 Complex Site

- A Class 5 Complex Site (unlike Classes 1-4) allows netting of Import and Export at separate Boundary Points
- For example, the diagram shows a Class 5 Complex Site with 20 kWh of Export, and 9 kWh of Import. But only the net 11 kWh of Export goes into Settlement.
- This means Contract for Difference (CFD) and Capacity Market (CM) levies are not charged on the 9 kWh of Import. For this reason, the Issue 88 Workgroup concluded that Class 5 Complex sites should only be used to net exempt supply (not licensed Supply)
- How are MSIDs registered in this example?
- How can gross data still be provided for charging purposes?




*Example of a Class 2 Complex Site*



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# Registration Option 1: One Import MSID and one Export MSID

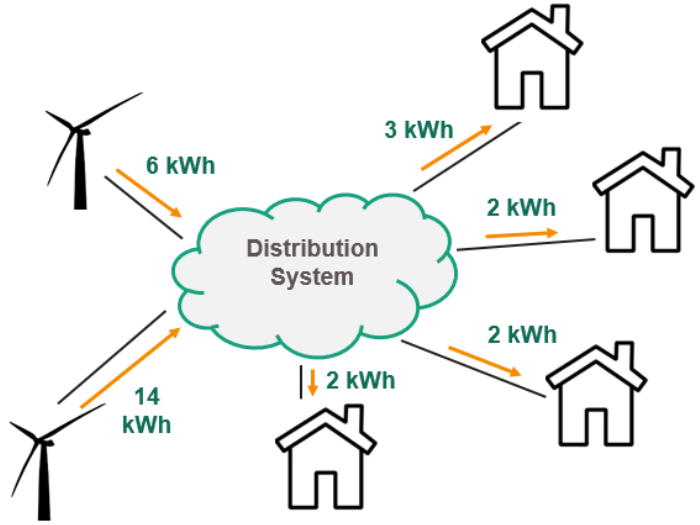
In this option, the entire Complex Site has one Import MSID and one Export MSID

Individual customers and generators don't have their own MSIDs (i.e. logically disconnect their MSID when they join the scheme)

HHDC calculates net Import or Export, and allocates to Import MSID or Export MSID

This option is similar to offsite totalisation, but with netting of Import and Export. But it seems highly problematic:

- Customers no longer have their own MSIDs, which may prevent them from leaving the scheme
- With a single MSID Pair representing many different customers, the DNO will no longer have visibility of the individual customer sites




*Example of a Class 2 Complex Site*



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# Registration Option 2: Customers and Generators Retain their MSIDs

In this option, the Customers and Generators retain their own MSIDs:

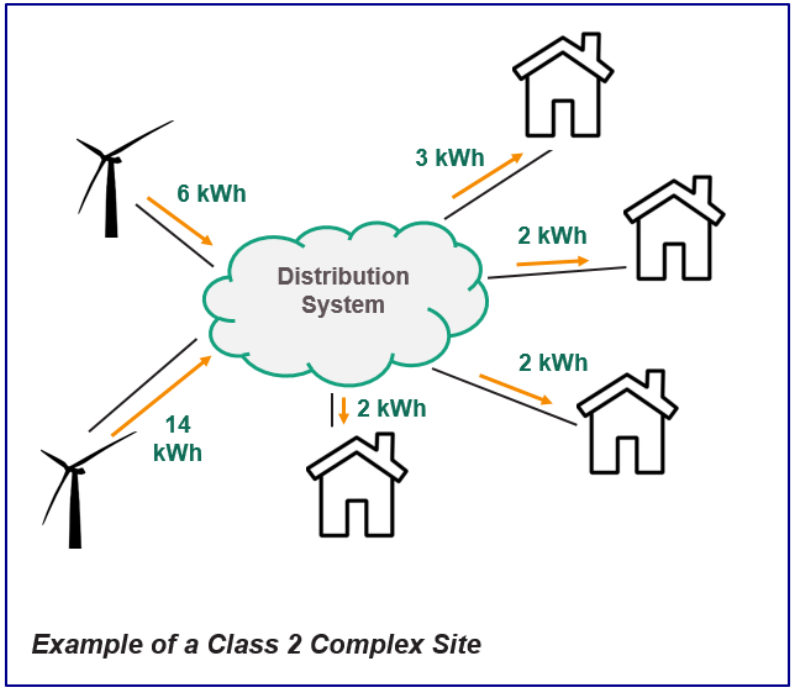
- Each customer has an Import MSID
- Each generator has an Import MSID and Export MSID

HHDC calculates net Import or Export, and allocates between MSIDs:

- In our example, there is a net Export of 11 kWh, which must be allocated between the two Export MSIDs
- If there was a net Import, it would have to be allocated between the 4 customer Import MSIDs

How should the HHDC allocate the net volume between MSIDs? This could be mandated in the rules (e.g. *pro rata*), or left up to Supplier and HHDC

This model could potentially work with different customers having different Suppliers (but same HHDC)




*Example of a Class 2 Complex Site*



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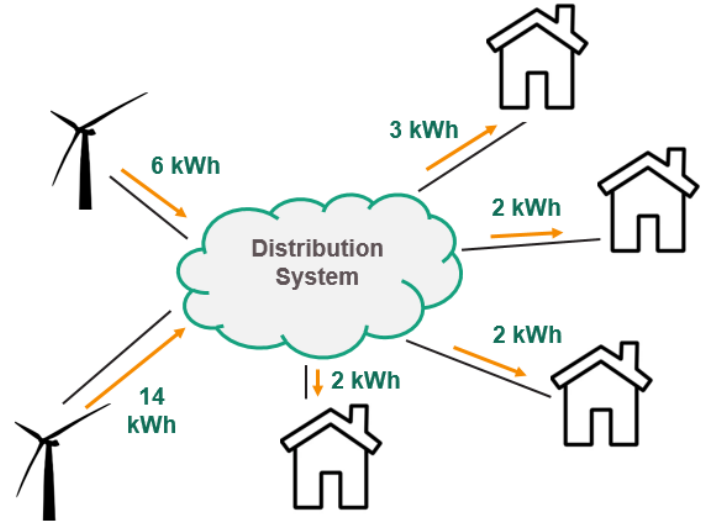
# Registration Option 3: Shared SVA Meter Arrangement

This option effectively combines options 1 and 2 using a Shared SVA Meter Arrangement:

- Each customer has an Import MSID
- Each generator has an Import MSID and Export MSID
- Additionally, there is an Import MSID (for net Import) and an Export MSID (for net Export), as in option 1. But these are now pseudo Secondary MSIDs (allocated via the BSCP550 process for Shared SVA Meter Arrangements)

HHDC calculates net Import or Export, and allocates to one of the pseudo Secondary MSIDs (as in option 1).

The Primary MSIDs (for each Customer and Generator) will have zero volumes, as long as they remain in the scheme.




*Example of a Class 2 Complex Site*



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# NETWORK CHARGING FOR CLASS 5 COMPLEX SITES

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# Balancing Use of System (BSUoS)

From 1 April 2023 (implementation of CUSC Modification CMP308), BSUoS will be recovered from Suppliers in proportion to their Final Demand

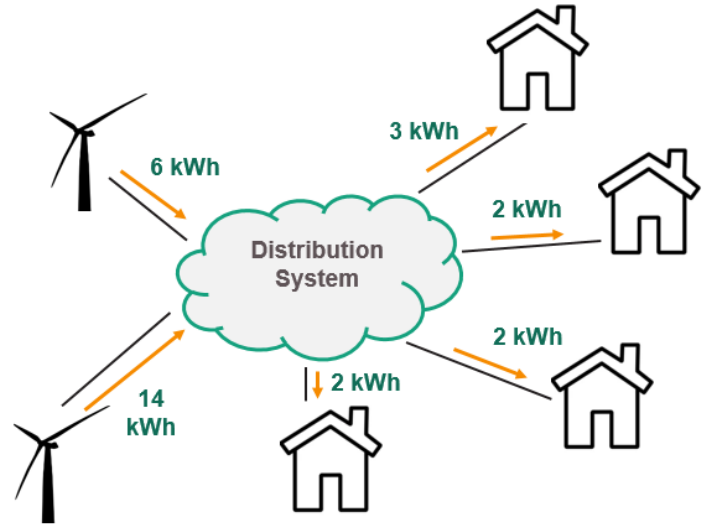
NGESO will calculate BSUoS charges using data in the P0210 data flow, which provides Gross Demand and Non-Final Demand (by BM Unit, Settlement Period and Measurement Class)

Class 5 Complex Sites have Final Demand which does not enter Settlement. The volume (9 kWh in the example) is known to the HHDC, but not to BSC Agents or NGESO

In order to charge BSUoS on this Final Demand, the HHDC would have to provide details of 'gross data' either:

- Directly to NGESO; or
- To the Supplier Volume Allocation Agent (SVAA), for them to aggregate and include in the P0210.

An additional complexity is that the HHDC will not necessarily know which BM Unit each MSID is in. But does NGESO need to know this? Would Supplier Id suffice?




*This example shows 9 kWh of Final Demand that does not enter Settlement*



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## Transmission Network Use of System (TNUoS)

From 1 April 2023 (implementation of CUSC Modification CMP343), the TNUoS charge relevant to Class 5 Complex Sites are:

| Type of TNUoS Charge | How Does NGESO receive the data for charging? |
|---|---|
| **Locational HH Demand Charge**: £/kW tariff paid by HH demand in certain GSP Groups (mostly in the South), based on demand at triads | NGESO calculates locational charges using data on the P0210 data flow.<br>Charging issues are therefore similar to BSUoS (except the incentives are reversed, because netting of Import and Export increases locational TNUoS charges) |
| **Locational Embedded Export Tariff**: £/kW tariff paid to embedded generation in certain GSP Groups (mostly in the South), based on Export at triads | |
| **Residual Demand Charge**: banded per-site charge paid by Final Demand sites only | Under registration options 2 and 3, each Customer retains an MSID, so would presumably still be charged.<br>Registration option 1 would avoid residual demand charges (but is probably unworkable for other reasons anyway). |

# P441 – Proposed Class 5 Sites
# Use of System Charges

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# What is a Class 5 site?

Class 5 Complex Site

•Where the netting of Import from Exports across multiple Boundary Points (i.e. connections to the Total System) is required to facilitate an agreement to allow Generators (or “schemes” working with the Generator such as Energy Local) to Supply local end customers (usually under a supply license exemption).

# Current Charging – Regulatory Policy

CMP264/5 (implemented from 2018, following a JR; phased in over 3 years) – ended Embedded Generators' ability for their output to be netted off demand for demand TNUoS charge calculation purposes; new embedded export tariff (EET) brought in for embedded generation; hence, introduction of Gross demand TNUoS charging for HH demand

Targeted Charging Review – CMP333 (implemented from 2021) - brought in Gross Charging of demand for BSUoS purposes (end of ability to net off associated embedded generation)

**=> BSUoS and TNUoS are currently charged Gross.**

**This was considered under the TCR**

- Charging for Complex Sites – Class 5

**BSUoS**

Class 5 sites will be charged on BSUoS gross HH demand at BMU level

**TNUoS**

Class 5 sites will be charged on TNUoS based on HH gross demand at BMU level.

Sites will qualify for embedded export tariff

**Net charging would go against principles established in the TCR and by previous modifications around gross demand charging for TNUoS and BSUoS .**

**The ESO will need to be provided with Gross Demand Data in order to bill TNUoS and BSUoS to these sites.**

# CLASS 5 – NOTIFICATION TO ELEXON

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# Class 5 Complex Site – Notification to Elexon

- The P441 proposer has suggested that a notification to Elexon should occur on the establishment of; and material change to; a Class 5 Complex Site. This was also the view of the Issue 88 Working Group.

- This will aid Elexon in assuring:
  - Class 5 Complex Sites cause no unforeseen issues to Settlement when scaled up:
  - Keep track of all MSIDs within a Class 5 Complex Site to mitigate against the possibility of Trading Disputes where additional demand or generation is added within the vicinity of a Complex Site by a Registrant who may not be aware of the current arrangements.

- A significant change to a Class 5 Complex Site is proposed to include:
  - Any change to the Primary Metering Equipment comprised within a Class 5 Complex Site (any change upgrade to the generator or change to any measurement transformers). For clarity a Meter change will not qualify as a “material change”.
  - Any significant change made to the commercial arrangement under which the scheme operates (e.g. Change of Supplier).

- Only one notification would be required per Class 5 Complex Site. However that notification should include all MSIDs participating in the “scheme” to which the Class 5 Complex Site relates to.

# Class 5 Complex Site – Notification to Elexon

- All information proposed to be included in the notification to Elexon is detailed in the new (to be implemented November 22 under CP1559/R0018) Complex Site Supplementary Form (CSSIF)

- The CSSIF is created and sent by the SVA MOA.

- Is it appropriate for the SVA MOA to be required to send the CSSIF to BSCCo or should a specific “notification template” be created under which the Registrant of the Class 5 Complex Site would be responsible for notification to Elexon?

# CLASS 5 – CENTRAL REGISTER

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# Class 5 Complex Site – Central Register

- It is proposed that BSCCo would use the notification of Class 5 Complex Sites to create a central register.

- The central register would be for Elexon's internal use but could be published/distributed on request.

  - Should a higher level register (omitting any personal or sensitive information) be required to be published by default?
  - Any published register would only include data at a "scheme level" and not MSID or customer level.
  - This could allow relevant parties to have knowledge of such arrangements where they could assist in running the network or market more efficiently without compromising commercial confidentiality.

- The updated CSSIF also includes identification of any MSIDs located at the Boundary Point to an embedded network or any MSIDs located within the embedded network.

  - Given historical issues and Trading Disputes raised against errors in Complex Sites related to embedded networks could a central register also be formed of Class 1 and 2 Complex Sites?

# A.O.B & NEXT STEPS

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# AOB

- Confirm the schedule for the next (third) Workgroup meeting:
  - W/c 6 or 13 February 2023

- Plan to seek 5 months extension to the P441 Progression plan

# Next steps

- Summary of Workgroup meeting decisions and actions by **5pm on Friday 9 December 2022**
- Elexon to schedule the third Workgroup meeting
- We are proposing to review the Terms of References below:
  - ToR (g) – Will the site arrangements be forward looking and not retrospective?
  - ToR (h) - What should be considered as “Local” and “primary” substations?

# Progression plan

| Event | Date |
|---|---|
| Present IWA to Panel | 14 July 2022 |
| Workgroup meeting 1 | 31 August 2022 |
| **Workgroup meeting 2** | **6 December 2022** |
| Workgroup meeting 3 | W/C 16 or 23 February 2023 |
| Workgroup meeting 4 | W/C 20 March 2023 |
| Assessment Procedure Consultation (15WDs) | April 2023 |
| Workgroup meeting 5 | W/C 8 May 2023 |
| Present Assessment Report to Panel | 8 June 2023 |
| Report Phase Consultation | 12 June – 23 June 2023 |
| Workgroup meeting 6 (Placeholder) | W/C 26 June 2022 |
| Present Draft Modification Report to Panel | 13 July 2023 |
| Issue Final Modification Report to Authority | 14 July 2023 |



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# MEETING CLOSE

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# THANK YOU

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6 December 2022