Public

P375 'Behind the Boundary Meter'

Workgroup eight

19 August 2020

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P375 Skype meeting ground rules

- No video please - bandwidth

- All on mute – use IM if you can't break through

- Talk – pause – talk

- Lots of us are at home – be mindful of background noise and connection speeds

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Objectives

■ Agree legal text

■ Review Business requirements against the legal text

■ Review Consultation

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Agenda

Agenda item	Lead
1. **Welcome and Objectives**	Chris Wood
2. **Solution overview and refresh**	Chris Wood
3. **Legal Text summation**	Damian Clough/Iain Nicoll
4. **Business Requirements review**	Damian Clough
5. **Consultation overview**	Chris Wood
6. **AOB**	Chris Wood
7. **Meeting Close**	Chris Wood

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P375 Solution

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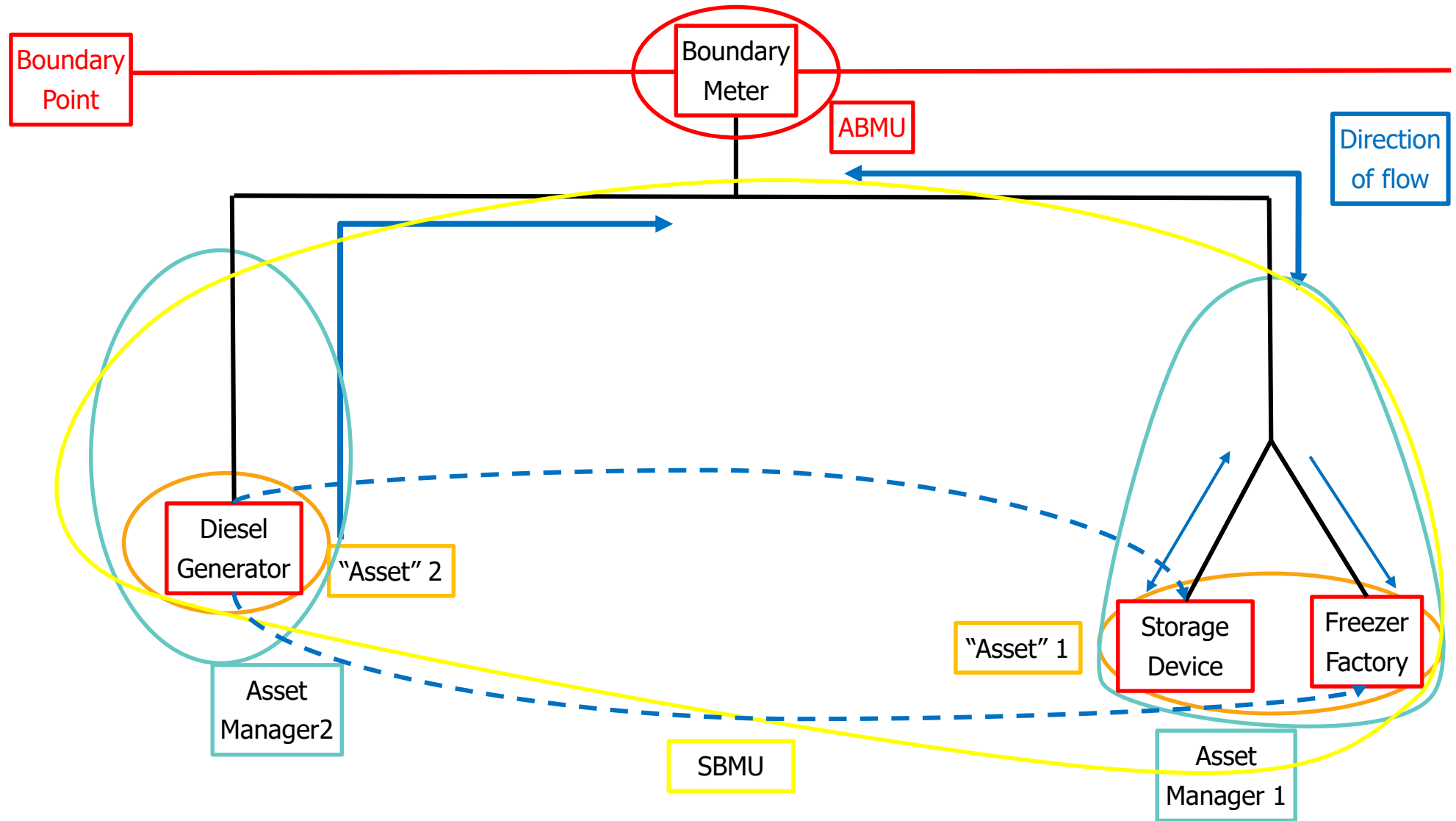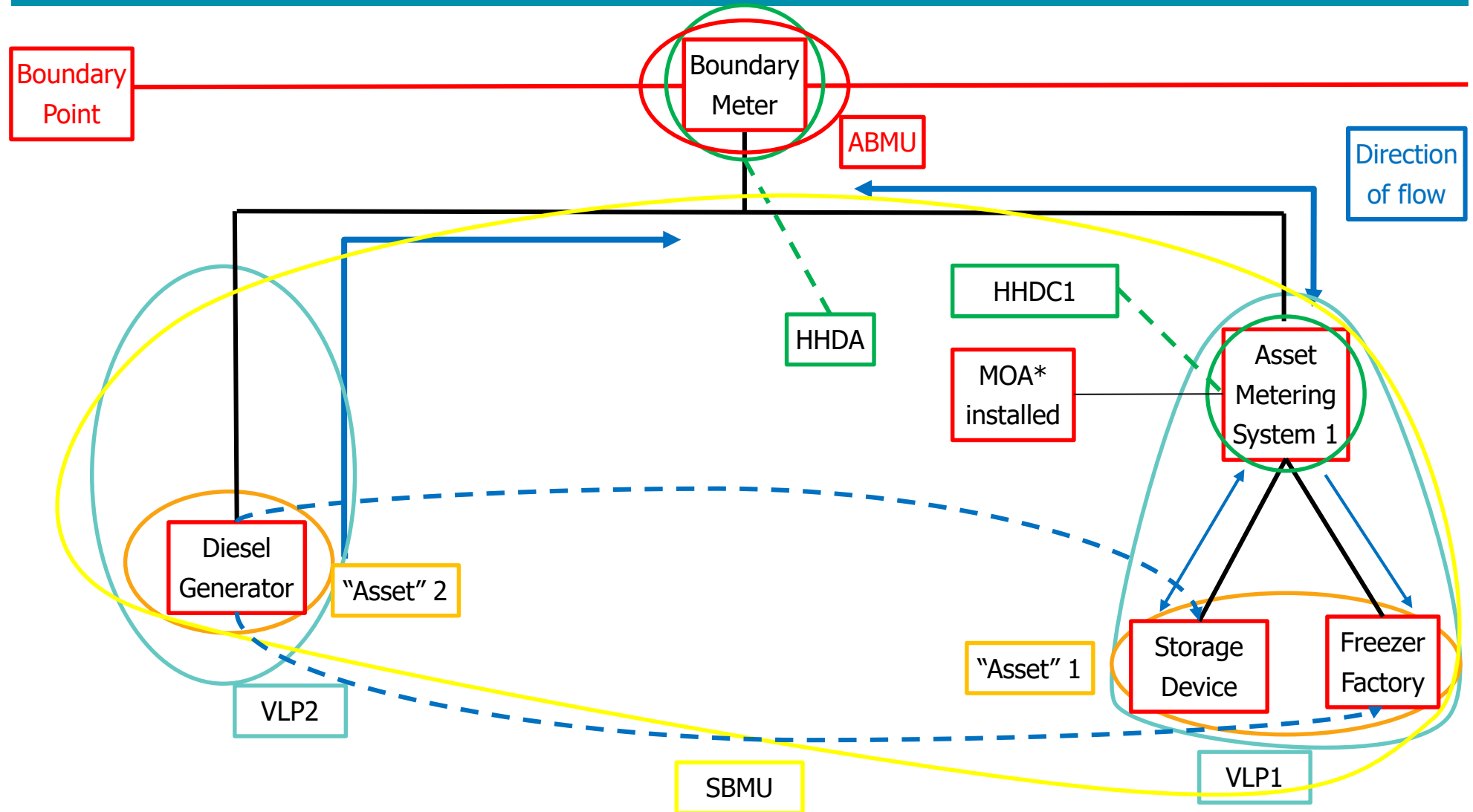
P375 Solution

- Metering
  - New Cope of Practice (CoP11)
  - Update to BSCP601

- Registration process
  - Alignment with SVA registration process
  - Creation of register
  - Only VLPs will be able to register AMSIDs

- BSC Party Agent roles
  - Asset MOA qualifications
  - HHDA of Boundary Point role
  - HHDC to be appointed by VLP

- Assurance
  - PAB will need to consider BSC risks
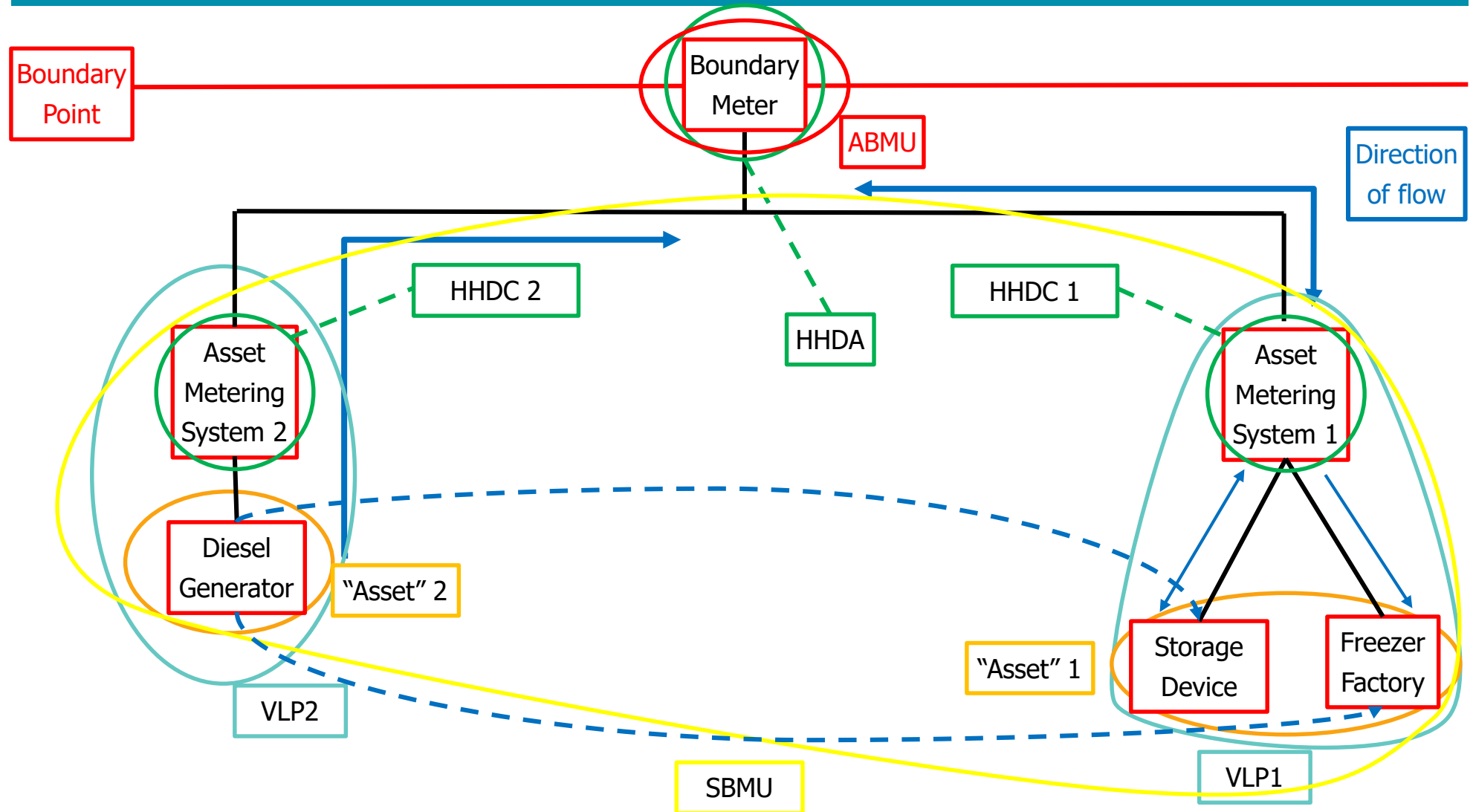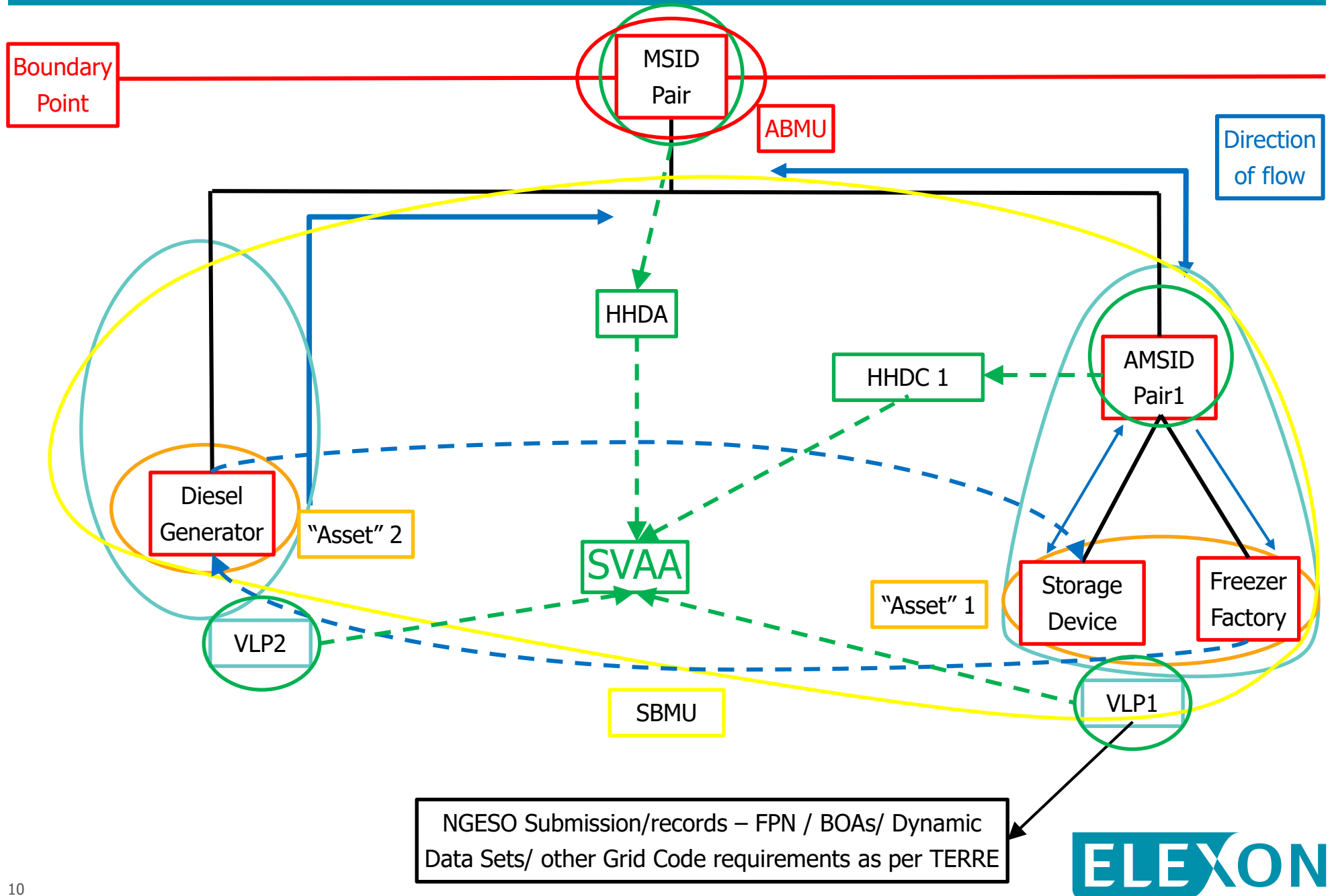 - Need to consider appropriate assurance measures

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TERRE/Wider Access

Multiple VLPs and Single AMSIDs

Multiple VLPs and Multiple AMSIDs

Data processing

BSC Section S and S-2 highlights

Damian Clough

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Section S-2

- SVAA receives aggregated consumption figures in accordance with S-2 3.1

- However; for P344 SVAA requires disaggregated consumption figures per MSID Pair. HHDA's are therefore instructed under TERRE to send MSID standing data to SVAA for relevant Boundary Meters

- For P375 SVAA will receive disaggregated data from the HHDC's for Asset Metering Systems. However SVAA need to perform the role of the HHDA's to turn the data received from HHDC's into the equivalent of what they receive from HHDA's

- Supplier's ensure HHDC's enter Meter Register Consumption into the relevant systems (**SMRC**) and then turn this into Metering System Metered Consumptions (**SMMC**).

  - The equivalent needs to be done by HHDC's for Asset Metering Systems who will now send the equivalent data which is sent to HHDA's but to SVAA instead.

  - S-2 3.3.2, and 3.5.1A (creates **AMRC**), which is turned into the equivalent of SMMC for Asset Metering Systems in 3.5.3A (**AMMC**)

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Section S-2

- HHDA's turn the Metering System Metered Consumptions (SMMC) received from HHDC's into Allocated Metering System Metered Consumption (AVMMC) by assigning a GSP Group, Line Loss Factor and Consumption Component Class to the data.

- For Asset Metering Systems SVAA will undertake this role and turn the **AMMC** into the equivalent of AVMMC for Boundary Meters by assigning a GSP Group, Line Loss Factor and Consumption Component Class to the data to AMMC turning this into **AAVMMC**. S-2 3.9.2A

  - To create a CCC, SVAA will need to know a Measurement Class

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Section S-2

- SVAA having performed the role of the HHDA for this new data, we now start mirroring a lot of the existing processes as this is the point where SVAA will receive this data from HHDA's for Boundary Meters

- In 7.1.1B the **Allocated Metering System Metered Consumption** is turned into **Metering System Metered Consumption** ($VMMC_{HZaNLKji}$) by dividing the data by 1000

- The same therefore has to be done with the new **Allocated Asset Metering System Metered Consumption** creating a new paragraph 7.1.1?

- Both the **Metering System Metered Consumption's VMMC** are then allocated to the Secondary BM Units (slightly different subscripts for the Asset Metering Systems) in paragraph 7.1.1C

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Section S-2 Secondary Half Hourly Consumption (Non Losses)

- The SVAA shall determine the Secondary Half Hourly Consumption (Non Losses) (V_{i2Nj}) in paragraph 7.1.4

- $V_{i2Nj} = \Sigma_{aK}$ (A) $VBMMC_{i2aNLKji} +$ (B) $\Sigma_{aK}^{NonDiff} \mathbf{VBMMC_{i2NLKj}} -$ (C) $\Sigma_{aK}^{Diff} \mathbf{VBMMC_{i2NLKj}}$

- $VBMMC_{i2NLKj}$ from Asset Metering Systems now feeds into the existing equation

- Within the SBMU, consumption values come from Asset Metering Systems which have been allocated like any other Metering System. However there are Asset Metering Systems allocated to the SBMU for the purposes of Differencing.

- Boundary Meters volumes selected for Differencing will be included in the existing (A) , and Asset Metering Systems selected for Differencing within the new $\mathbf{VBMMC_{i2NLKj}}$

- By deducting the Asset Metering Systems selected for Differencing but leaving the volumes for the Boundary Meters selected for Differencing, the 'difference' between the two values creates the correct values for the Differencing AMSID. i.e. Boundary has flows of 10, all other AMSIDs have flows of 6, the differencing AMSID has flows of 4 included in the consumption volumes

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Section S-2 Secondary Half Hourly Consumption (Losses)

- The SVAA shall determine the Secondary Half Hourly Consumption (Losses) (**VLOSS$_{i2Nj}$**)

- $VLOSS_{i2Nj} = S^{(vv)}{}_{LK} ((LLF_{Lj} - 1) * VBMMC_{i2aNLKji}) + S^{(vv)}{}_{LK} ((LLF_{Lj} - 1) * $ **VBMMC$_{i2NLKj}{}^{NonDiff}$) - S$^{(vv)}{}_{LK}$ ((LLF$_{Lj}$ - 1) * VBMMC$_{i2NLKj}{}^{Diff}$)**

- Similar to what happens for Non Losses, the losses for differencing have to take account of differencing which is done in **7.2.4**

- Now we have fed the Asset Metering Systems volumes into the Settlement process and calculated V$_{i2Nj}$ and VLOSS$_{i2Nj}$ taking account of Differencing the process continues as normal.

- The next process adjusted in S-2 is the calculation of Delivered Volumes

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Section S-2 Determination of Metering System Delivered Volumes

- **3.10** deals with Delivered Volumes

- The VLP now needs to send in Delivered Volumes for AMSID Pairs adjusted to take account of Losses between the AMSID and the Associated MSID Pairs **3.10.1A**

- As there may be a number of VLPs operating behind the same meter, the Delivered Volumes for an Associated MSID Pair needs to be totalled. **3.10.1B**

- These new Total Delivered Volumes feed into the allocation of delivered volumes in 3.10.3 and 3.10.4

- As noted earlier there may be a number of VLPs operating behind a Boundary Meter. Therefore the calculated Delivered Volumes above may need to be allocated to each VLP based on their contribution **3.10.4A**

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Metering and P375

Iain Nicoll

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Agenda

1	**What has P375 come up with for metering?**
2	**What is P375 proposing for compliance and protocol approval?**
3	**What is P375 proposing with categories?**
4	**How will data be submitted?**
5	**Consultation questions**

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What has P375 come up with for metering?

Resulted in a number of operational outcomes for metering

1 Code of Practice (CoP) 11 was developed for P375

2 Three categories of Asset Meter Types were created

- BSC approved Half Hourly Meters/Outstations

- Operational Meters and non-approved Half Hourly Meters

- Embedded Metering Devices within a product

For all categories data has to be submitted in a 30 minute Settlement Period format e.g. through a system solution linked to the Asset Meter

3 BSC approved Half Hourly Meters/Outstations go through a Compliance and Protocol Approval Test

3a The current process for Half Hourly Meters/Outstations is in BSCP601 - Metering Protocol Approval and Compliance Testing

3b This will be extended to Asset Meters in Code of Practice 11

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What has P375 come up with for compliance and protocol?

Compliance and Protocol Approval

| 4 | BSC approved Half Hourly Meters/Outstations do not need to got through another Compliance Test for CoP11 |

| 4a | They will automatically be allowed to be used for the equivalent Asset Metering Type (e.g. CoP1 approved automatically Asset Metering Type 1 approved) |

| 5 | Operational Meters, non-approved Half Hourly Meters and Embedded Metering Devices within a product will go through a Compliance Test for the relevant Asset Metering Type |

| 6 | HHDC's with Protocol approved for BSC approved Half Hourly Meters/Outstations do not need to got through another Protocol Test for CoP11 |

| 6a | They will automatically be allowed to communicate with them for Settlement purposes for the relevant BSC approved Half Hourly Meters/Outstations when used as an Asset Meter |

| 7 | Operational Meters, non-approved Half Hourly Meters and Embedded Metering Devices within a product will go through a Protocol Test for each VLP/HHDC wishing to communicate with them for Settlement purposes |

Asset Meters that have completed Compliance Testing will receive a Certificate of Compliance and be added to an amended CoP Compliance and Protocol Approvals list

VLPs that have completed Protocol Testing will receive a Certificate of Protocol Approval and be added to an amended CoP Compliance and Protocol Approvals list

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What is P375 proposing for categories?

How are Asset Meters categorised in CoP11?

Table 1: CoP 11 is split into five types of Asset Metering:

Asset Metering Type	Range
1	Metering of circuits rated greater than 100MVA
2	Metering of circuits not exceeding 100MVA
3	Metering of circuits not exceeding 10MVA
4	Metering of energy transfers with a maximum demand of up to (and including) 1MW: Split into separate requirements for Transformer connected metering and Whole Current metering
5	Metering embedded within another device for energy transfers with a maximum demand of up to (and including) 100kW

The accuracy, commissioning and record keeping requirements specified are equivalent to existing Regulatory requirements:
- BSC Metering Codes of Practice
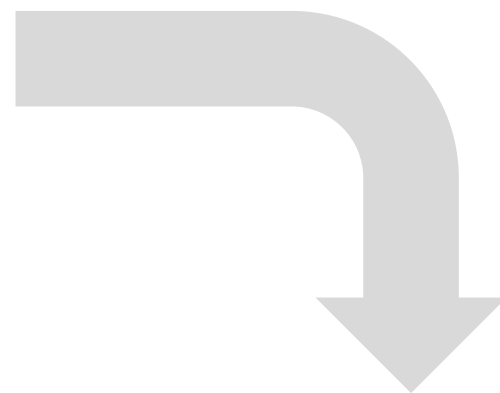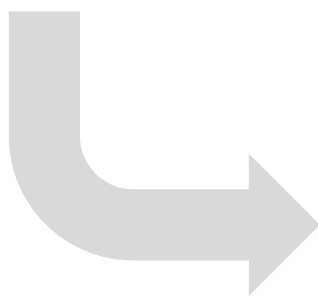- Sub 100kW Metering requirements (Electricity Act)
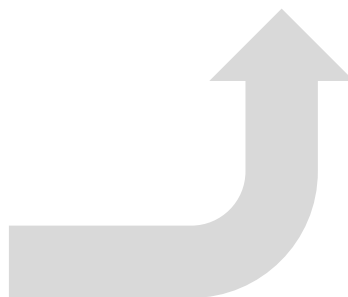
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How will data be submitted?

Asset Meter

Half Hourly Data Collector (HHDC) System

Data Retrieval / Virtual Lead Party System

Supplier Volume Allocation Agent (SVAA)

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Consultation questions

■ The Assessment Consultation questions related to the metering solution are:

– Do you agree with the content of CoP 11?

  – If there is something that you think needs adding/removing/changing, please explain why, and if possible/appropriate, an alternative

– Have we considered all potential metering types in drafting CoP11?

  – Please provide details and reasoning where you think changes are required

– Do you agree that no particular provision shall be made for smart Meters and pre-payment Meters?

– Do you agree that DC measuring devices should be allowed to be used and that inverter losses should be accounted for?

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Business Requirement Overview

Damian Clough

Business Requirements

- *See separate spreadsheet accompanying legal text*

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Consultation Overview

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Overview of consultation

- High to medium level

- Description of Issue is minimal – some assumed knowledge

- Solution description – clear that WG agrees with Proposer

- Benefits case:

  - Smart Grids

  - Renewables and Storage

  - Electric Vehicles

  - Integrated Energy Systems

  - Other Modifications – P379/P383/P395

  - Community energy

  - New avenues to market

  - Data provision

  - Costs for future energy markets

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Consultation Questions

- Summary of questions:

  - Agreement with the P375 Issue and Solution?

  - CoP 11 questions as discussed earlier

  - Assignment to a single SBMU and GSP Group

  - Registration process

  - Role of BSC Party Agents, including Qualification for asset MOAs

  - Sharing data process and Data sharing policy

  - Assurance techniques

  - Have we considered all reasonable scenarios?

  - Agreement with the Legal text

  - Impacts, benefits and costs for VLPs and agreement with implementation impacts and costs

  - Agreement with potential future benefits

  - Implementation plan

  - Agreement with BSC Objectives and Self-Governance

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Next steps

Chris Wood

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Next steps

- Final comments to Elexon by COB 20 August 2020

- Issue consultation Monday 24 August 2020 to 14 September 2020

    – Press release and social media to tie-in with release
- WG post consultation to review responses

- BSC Panel October 2020

- One month consultation -EBGL Article 18

- BSC Panel December 2020

    – Send to Ofgem December 2020

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AOB

Chris Wood

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