

# P415 Microsoft Teams Meeting

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- Welcome to the P415 teleconference – we'll start in a moment
- No video please – conserve 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
- “Raise your hand” feature to let the chair know you'd like to speak

# ELEXION

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## P415

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Facilitating access to wholesale markets  
for flexibility dispatched by Virtual Lead  
Parties

9 February 2021

# Meeting Objectives and Agenda

- Consider the P415 Defect and BSC Wholesale Market arrangements for P415;
- Agree solution principles for P415

Agenda Item	Lead
Welcome and meeting objectives	Elliott Harper (Chair),
Summary of the 1 <sup>st</sup> Meeting	Ivar Macsween (Elexon)
P415 Defect Summary	Matthew Roper (Elexon), Workgroup
BSC Wholesale Market arrangements	Matthew Roper, Workgroup
Simple Worked Example	Matthew Roper, Workgroup
Simple+ Worked Example	Matthew Roper, Workgroup
Solution principles	Matthew Roper, Workgroup
Complex Worked Example	Matthew Roper, Workgroup
Next Steps	Matthew Roper, Ivar Macsween
Meeting close	Elliott Harper



# SUMMARY OF 1<sup>ST</sup> MEETING

# Summary of 1<sup>st</sup> Meeting

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- The group agreed that an economic and efficient solution is needed to allow VLPs to independently operate in the wholesale market and address the P415 defect, but need for consideration of how it can work with existing Supplier arrangements and imbalances to ensure that it is fair and reasonable across the market.
- P415 proposes to create a different form of settlement for the purposes of VLPs, establishing settlement against a volume deviation (or 'flexible' volume) rather than on metered volume. The proposal is to treat them as equivalent and levy the same obligations and restrictions for both.
- The Proposer noted that a lot of the "heavy lifting" needed to achieve a P415 solution had been done by P344, enabling VLPs by allowing the separation of normal supply to the customer and the offering of normal flexibility from the customer.
- P375 provides another building block that facilitates accuracy in determining settlement of actions the VLP has taken. P376 provides baselining methodologies to separating out normal behaviour from flexibility.
- P415 could therefore be a relatively small Modification in terms of impact on the BSC Legal Text, with the bulk of P415's assessment time spent on discussion and analysis of the wider impacts and considerations.



# Summary of 1<sup>st</sup> Meeting

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- The group also identified a number of questions that would need to be answered over the course of P415 assessment:
  1. What is the impact on the forward market? What are the different impacts on a Supplier as a result of the VLP making a forward trade?
  2. Who's the balance responsible party and how does that link back to EGBL requirements.
  3. What qualification and cost recovery requirements should VLPs be subject to?
  4. Customer consent - What information should be provided to the supplier?
- Several areas for specific consideration by National Grid were captured:
  1. What is the impact on the ESO's ability to balance the system?
  2. Consideration of TNOUS and BSUOS cost recovery
  3. Will P415 exacerbate NIV chasing?

# Summary of 1<sup>st</sup> Meeting

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- Several areas were thought to be ultimately out of scope of a BSC Modification and will need to be considered by Ofgem:
  1. Potential impact on the existing supplier licenses (what impact could P415 have and what changes might be needed?)
  2. Is there a need for a new license (for example a license for aggregators)
  3. Potential impact on Significant Code Review
  4. Potential impact on REMIT



# P415 DEFECT SUMMARY



# Independent Aggregator Market Access

	Capacity market	Ancillary services	Wholesale market	Balancing mechanism
Traded how far ahead?	Years	Years to days	Years to 1 hour	Less than 1 hour
Who buys from this market?	Government only	National Grid only	Many parties	National Grid only
Open to independent aggregators?	Yes	Yes	Not yet	Yes

## P415 Proposal Summary

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- Customers [flexible volumes] should be able to participate in the Wholesale Market by working with an independent aggregator, with no involvement from their Supplier
- VLP dispatched [flexible volumes] should be separate from normal supply volumes
- In a period in which a customer's consumption is being varied by a VLP the customer's Supplier's balancing position should be unaffected
- Any imbalances resulting from the VLP's portfolio failing to deliver the traded volumes during that period should be the responsibility of the VLP.
- Provision of flexibility for wholesale market purposes under these new arrangements should be stackable with all other flexibility services



# BSC WHOLESALE MARKET ARRANGEMENTS

# BSC Wholesale Market Arrangements

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Parties active in the Wholesale Market are required to submit notifications to the Energy Contract Volume Aggregation Agent (ECVAA) for all bilateral trade agreements.

There are two types of notification:

- **Energy Contract Volume Notifications (ECVNs)** which notify the ECVAA of the volumes of energy bought and sold between two Energy Accounts.
- **Metered Volume Reallocation Notifications (MVRNs)** which notify the ECVAA that the energy flowing to or from a particular BM Unit is to be allocated to one or more different Party's Energy Accounts.



# BSC Wholesale Market Arrangements

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Important concepts to understand:

- **Gate Closure** is a point one hour prior to the start of a Settlement Period. This is the point by which certain BSC Parties\* must submit information to NGESO regarding their planned production or consumption in a Settlement Period.

\* Demand units > 50 MW in NGET, 30 MW in SPT and 10 MW in SHETL; and all generating units

After Gate Closure, Parties are expected to adhere to the physical data submitted to the Electricity System Operator before Gate Closure. They should only deviate from this position at the instruction of the Electricity System Operator.

- **Submission Deadline** is currently set as the start of the Settlement Period. It is not possible to send/change contract notification after this time.



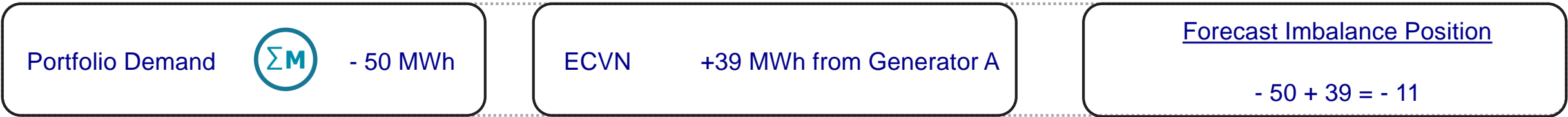


# WG01 SIMPLE WORKED EXAMPLE

# P415 WG01 Simple Scenario

Below are the scenario outlines for the WG01 simple working example:

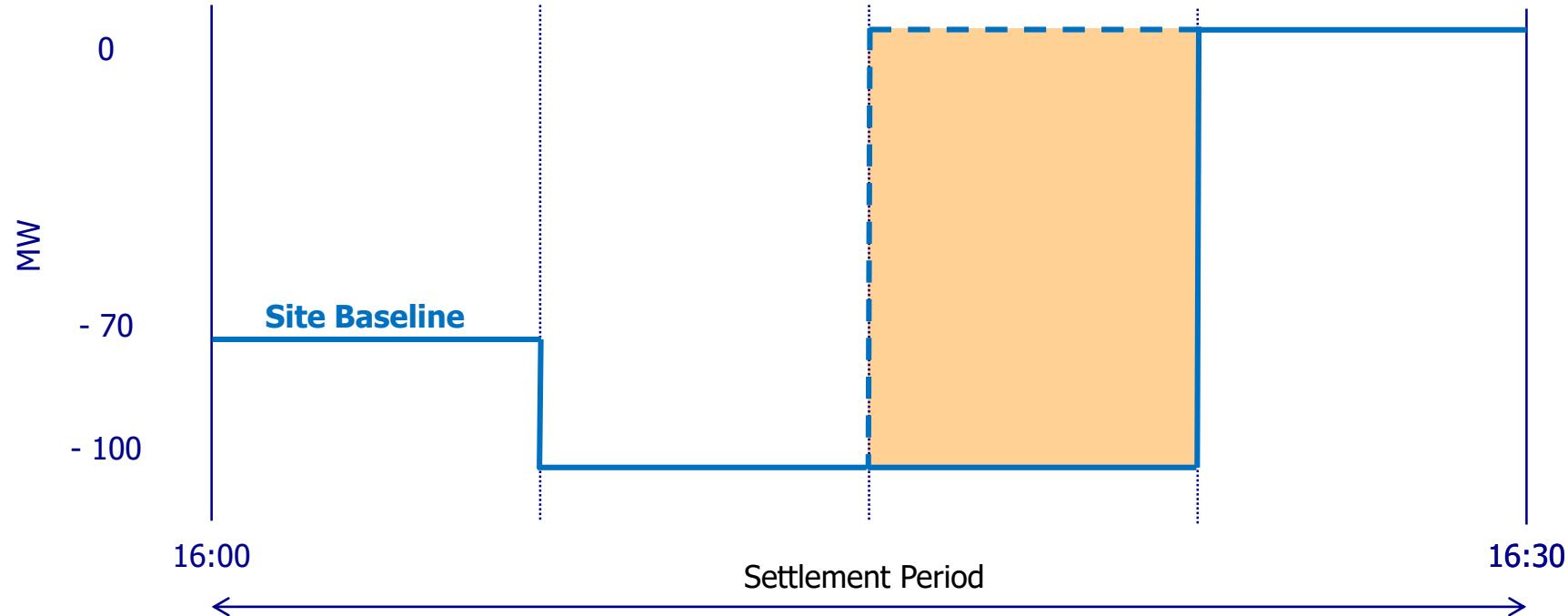
- Supplier A identifies that their forecast portfolio demand is incorrect and estimate that they will require an additional 11 MWh to balance their portfolio.



- VLP B offers to sell Supplier A the additional 11 MWh at the most favourable price
- Supplier A and VLP B agree to a bilateral trade for +11 MWh

## P415 WG01 Simple Worked Example: Early Shutdown - VLP

- VLP B enacts an Early Shutdown (i.e. reduced demand / increased generation at site boundary) in order to fulfil the trade
- The Early shutdown (i.e. a demand response action) effectively results in an additional +11 MWh on the Total System



- Pre VLP action site would have consumed 35 MWh
- Post VLP action site consumed 24 MWh
- Deviation equivalent of + 11 MWh on the Total System

# P415 WG01 Simple Worked Example: Imbalance Positions

## Supplier A

Portfolio Demand



- 50 MWh

ECVN

+ 39 MWh from Generator A  
+ 11 MWh from VLP B

Imbalance Position

$$- 50 - [ - 39 + ( - 11 ) ] = 0$$

## VLP B

Flexible Volumes



+ 11 MWh

ECVN

+ 11 MWh to Supplier A

Imbalance Position

$$11 - 11 = 0$$

## Supplier B

Portfolio Demand



- 24 MWh  
VLP Adjustment - 11 MWh

ECVN

+35 MWh from Generator A

Imbalance Position

$$[ - 24 + ( - 11 ) ] - ( - 35 ) = 0$$

## P415 Outstanding Issues

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- **Measurement and validation** – how to ensure correct and trustworthy [flexible volume] data  
(P375)
- **Baseline methodology** – how to define appropriate baseline methodologies, roles and responsibilities?  
(P376)
- **Information exchange and confidentiality** – how to share data to ensure market transparency and maintain appropriate confidentiality.
- **Transfer of energy price methodology** - how to compensate the lost revenue of the Supplier?
- **Relationship between implicit and explicit demand response** - how to unambiguously separate [flexible volumes] and Balancing Energy Volumes.
- **Imbalance position** – how will a Supplier be impacted by VLP activity and how can this be mitigated?
- **Portfolio conditions** - how to participate in TSO/DSO/BRP products through an aggregated portfolio.



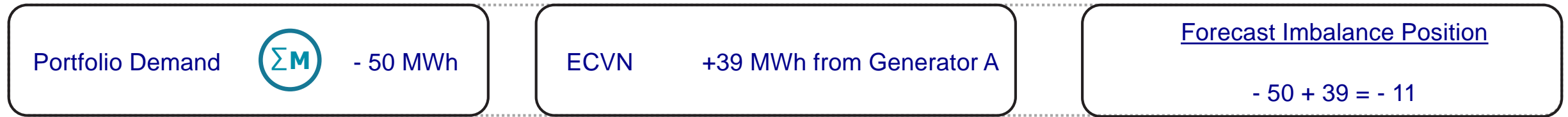


# WG02 SIMPLE+ WORKED EXAMPLE

## P415 WG02 Simple+ Scenario

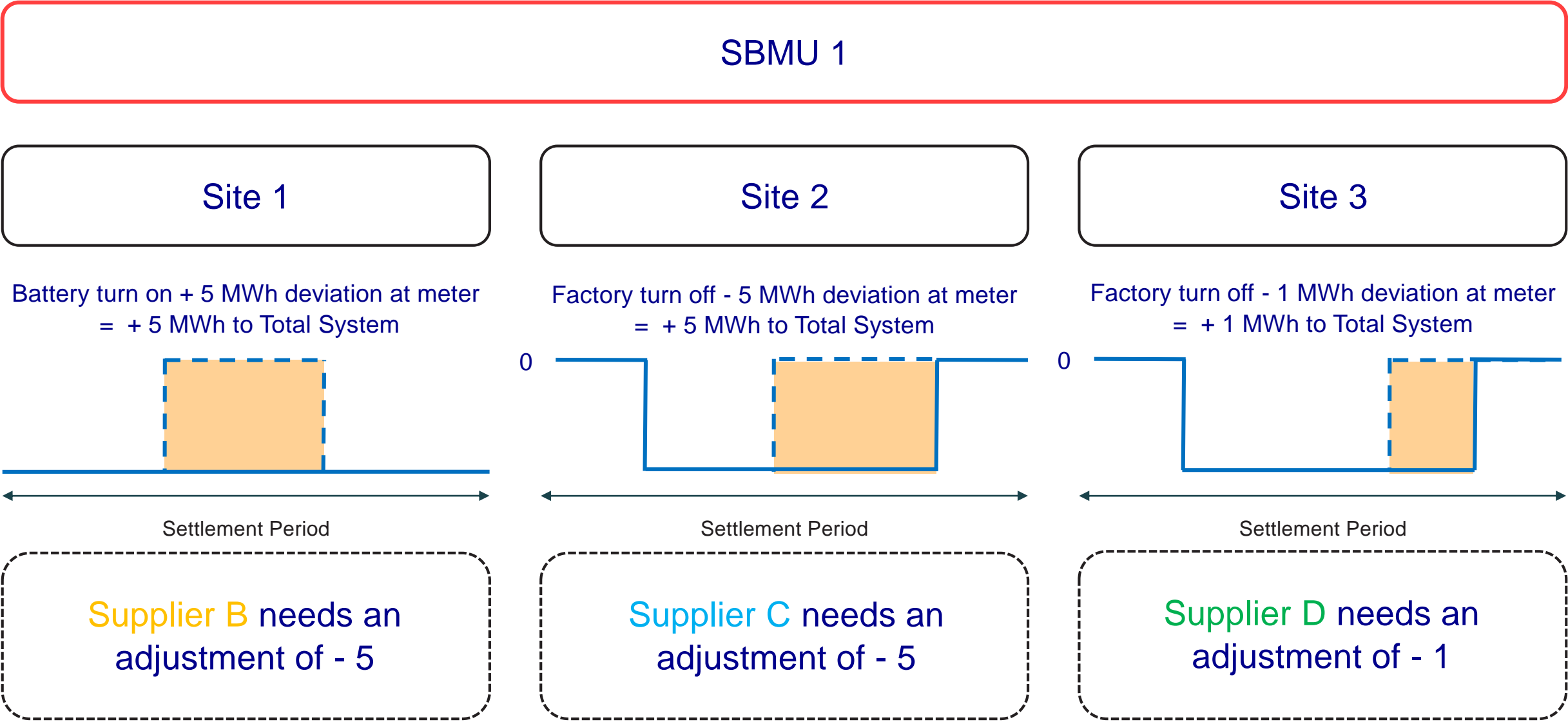
Below are the scenario outlines for the WG02 simple+ working example:

- Supplier A identifies that their forecast portfolio demand is incorrect and estimate that they will require an additional 11 MWh to balance their portfolio.



- VLP B offers to sell Supplier A the additional 11 MWh at the most favourable price
- Supplier A and VLP B agree to a bilateral trade for +11 MWh

# P415 WG02 Simple+ Worked Example: VLP Delivers against trade



\* The solution needs to understand what happens at each site to adjust all impacted Suppliers

# P415 WG02 Simple++ Worked Example: Imbalance Positions

## Supplier A

Portfolio Demand



- 50 MWh

ECVN

+39 MWh from Generator A  
+ 11 MWh from VLP B

Imbalance Position

$$- 50 - [ - 39 + ( - 11 ) ] = 0$$

## VLP B

Flexible Volumes



+ 11 MWh

ECVN

+ 11 MWh to Supplier A

Imbalance Position

$$11 - 11 = 0$$

## Supplier B

Portfolio Demand



+5 MWh

VLP Adjustment

- 5 MWh

ECVN

N/A

Imbalance Position

$$[ + 5 + ( - 5 ) ] + 0 = 0$$

## Supplier C

Portfolio Demand



- 5 MWh

VLP Adjustment

- 5 MWh

ECVN

+10 MWh from Generator A

Imbalance Position

$$[ - 5 + ( - 5 ) ] + 10 = 0$$

## Supplier D

Portfolio Demand



- 9 MWh

VLP Adjustment

- 1 MWh

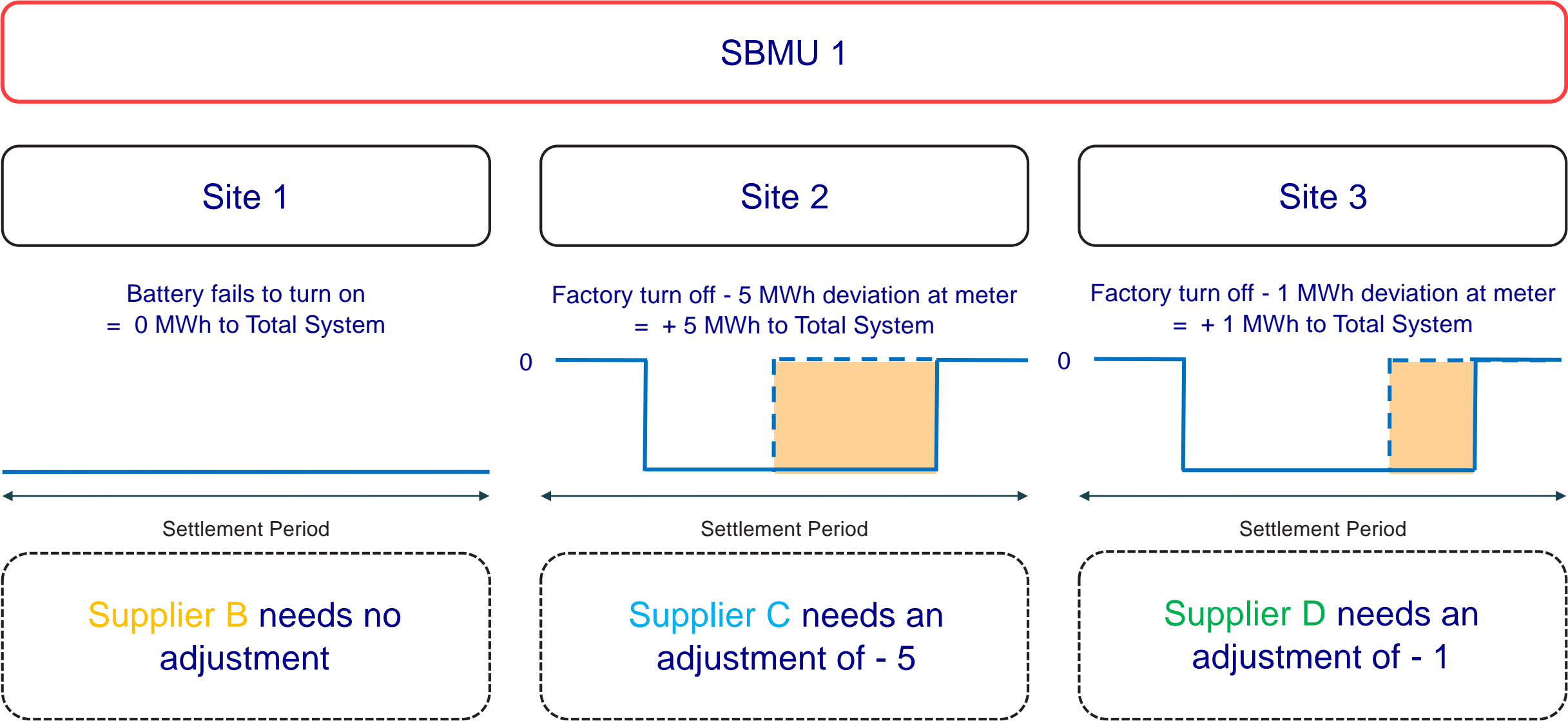
ECVN

+ 10 MWh from Generator A

Imbalance Position

$$[ - 9 + ( - 1 ) ] + 10 = 0$$

# P415 WG02 Simple++ Worked Example: VLP under delivers against trade



\* The solution needs to understand what happens at each site to adjust all impacted Suppliers



# P415 WG02 Simple+ Worked Example: Imbalance Positions

## Supplier A

Portfolio Demand  - 50 MWh	ECVN +39 MWh from Generator A + 11 MWh from VLP B	<u>Imbalance Position</u> $- 50 - [ - 39 + ( - 11 ) ] = 0$
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## VLP B

Flexible Volumes  + 6 MWh	ECVN + 11 MWh to Supplier A	<u>Imbalance Position</u> $6 - 11 = - 5$
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## Supplier B

Portfolio Demand  0 MWh VLP Adjustment 0 MWh	ECVN N/A	<u>Imbalance Position</u> $0 + 0 = 0$
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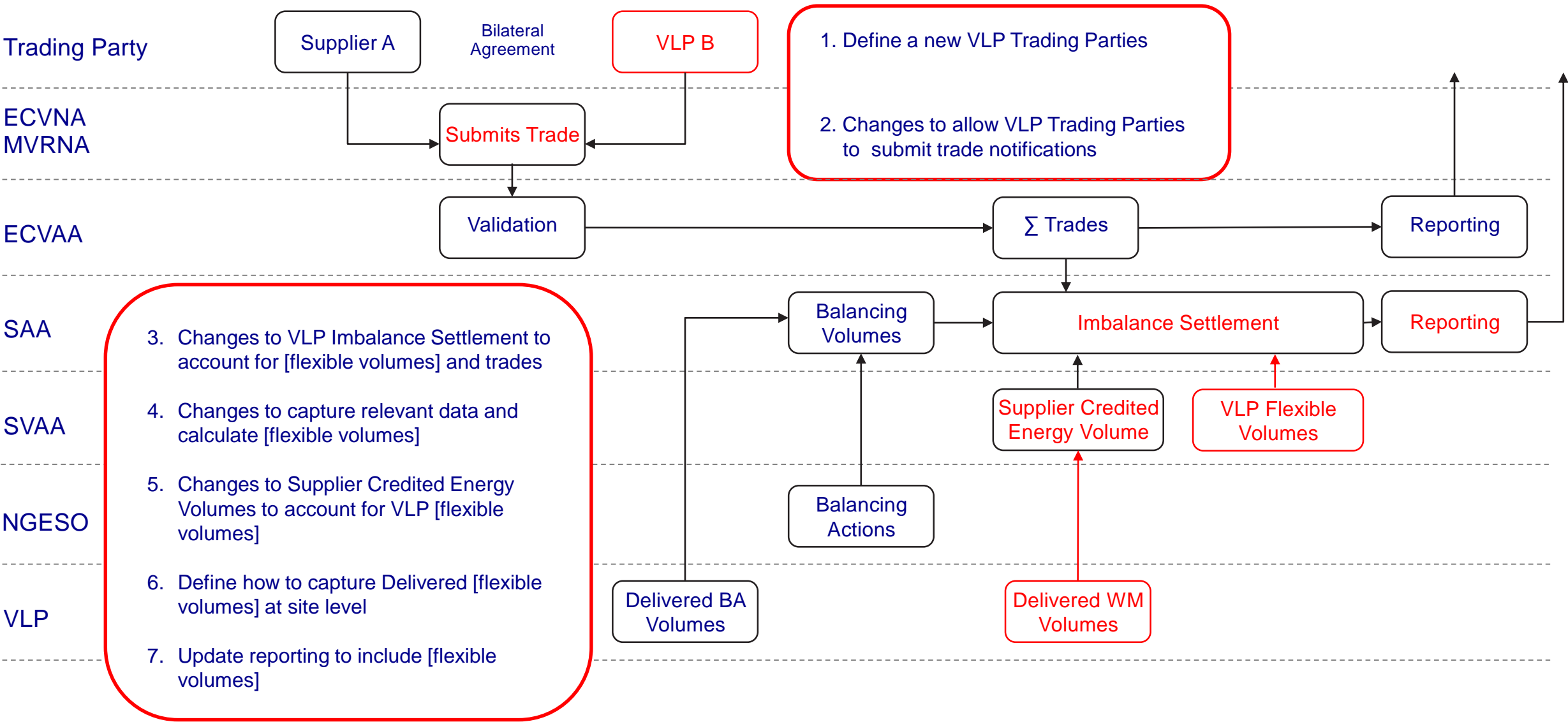
## Supplier C

Portfolio Demand  - 5 MWh VLP Adjustment - 5 MWh	ECVN +10 MWh from Generator A	<u>Imbalance Position</u> $[ - 5 + ( - 5 ) ] + 10 = 0$
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## Supplier D

Portfolio Demand  - 9 MWh VLP Adjustment - 1 MWh	ECVN + 10 MWh from Generator A	<u>Imbalance Position</u> $[ - 9 + ( - 1 ) ] + 10 = 0$
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# Proposed Settlement Arrangements





# P415 SOLUTION PRINCIPLES

## P415 Solution Principles

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**1. VLPs shall trade aggregated ‘flexible volumes’ on the wholesale market in the same manner as existing Parties i.e. VLP will have no advantage over existing Trading Parties and be subject to same rules and requirements**

- Subject to BSC Qualification
- Shall use ECVN and MVRN to capture [flexible volume] trades and be subject to the existing requirements and obligations
- Subject to same BSC costs and charges as Trading Parties
- No unnecessary barriers to entry for VLP

## P415 Solution Principles

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**2. The VLP shall be the Balancing Responsible Party (BRP) for any wholesale market ‘flexible volumes’ trades. Neither the counterparty nor registered Supplier shall bear any liability for delivery of the trade.**

- VLP shall have an imbalance position against traded [flexible volumes]
- [flexible volumes] shall be equivalent to metered volumes when calculating an imbalance position  
i.e. Settlement shall compare [flexible volumes] against traded volumes



## P415 Solution Principles

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**3. 'Flexible volumes' are a measurable commodity similar to traditional 'Metered Volumes' in that they both represent in an import/export MWh deviation to the Total System**

- Concept introduced and codified under the P344 Wider Access

Improvements to 'flexible volume' measurement accuracy were identified and further modifications were raised to progress solutions

- P375 'Metering behind the Boundary Point'
  - P376 'Utilising a Baselining Methodology to set Physical Notifications'
- [Flexible volumes] shall be applicable to Secondary BM Units only

## P415 Solution Principles

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### **4. VLPs shall be able to trade [flexible volumes] in the wholesale market and provide other flexibility services during the same Settlement Period**

- Specifically the Settlement solution shall allow a VLP to trade in the wholesale market and participate in the Balancing Mechanism (BM) / Replacement Reserve (RR) at the same time.
- P344 Wider Access arrangements shall be retained to enable this.

### **5. The registered Supplier at a site used by a VLP shall not benefit nor suffer detriment from BSC calculated cashflows due to VLP wholesale market activity**

- Registered Suppliers shall have their imbalance positions adjusted for all captured 'flexible volumes'
- The solution could include a mechanism to compensate the Supplier for the cost of energy transferred through the adjustments (tbc)

## P415 Solution Principles

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### **Additional considerations:**

- a. VLPs should have to comply with REMIT requirements
- b. VLPs should not be able to physically self-balance (i.e. change their physical position post Settlement Period Gate Closure Time [GTC])

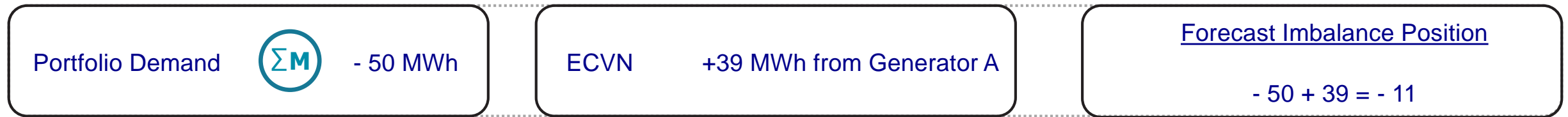


# WG02 COMPLEX WORKED EXAMPLE

## P415 WG02 Complex Scenario

Below are the scenario outlines for the WG02 simple+ working example:

- Supplier A identifies that their forecast portfolio demand is incorrect and estimate that they will require an additional 11 MWh to balance their portfolio.



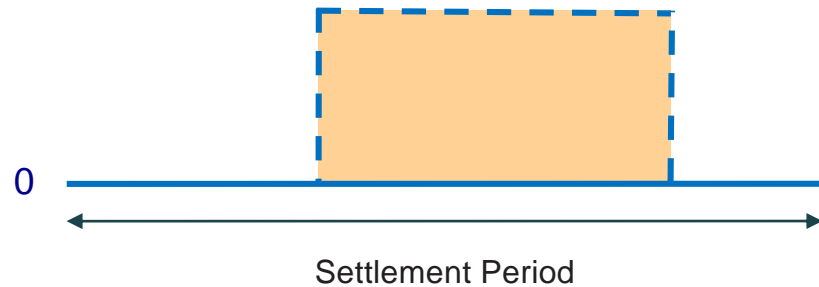
- VLP B offers to sell Supplier A the additional 11 MWh at the most favourable price
- Supplier A and VLP B agree to a bilateral trade for +11 MWh
- VLP B is also active in BM market and has a + 5 MWh BOA issued for the same Settlement Period

# P415 WG02 Complex Worked Example

SBMU 1

Site 1

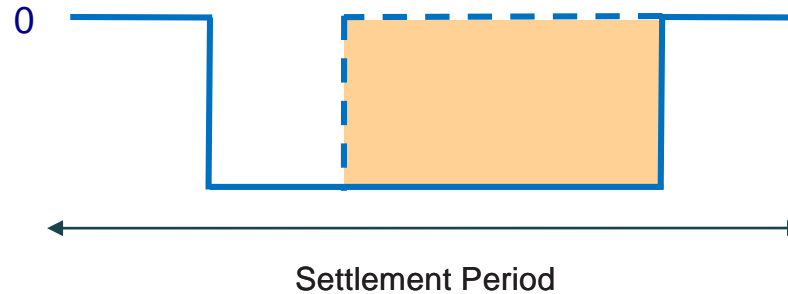
Battery turn on + 8 MWh deviation at meter  
= + 8 MWh to Total System



Supplier B needs an  
overall adjustment of - 8

Site 2

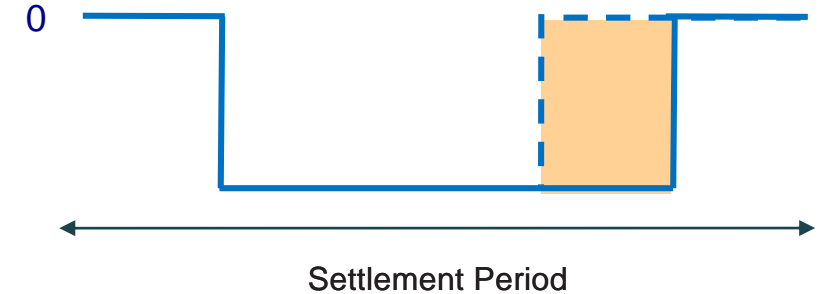
Factory turn off - 7 MWh deviation at meter  
= + 7 MWh to Total System



Supplier C needs an  
overall adjustment of - 7

Site 3

Factory turn off - 1 MWh deviation at meter  
= + 1 MWh to Total System



Supplier D needs an  
overall adjustment of - 1

Do we need to distinguish between wholesale market activity and BM activity at site level?

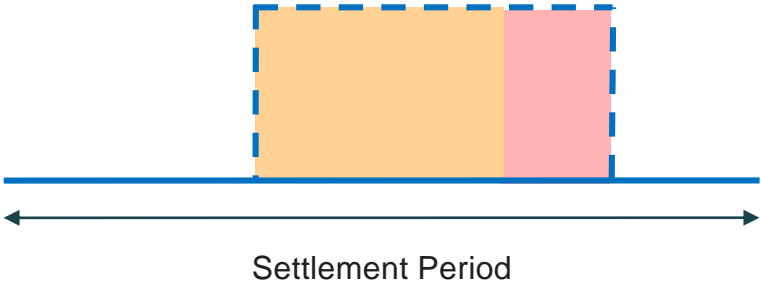


# Flexible Volume Calculation

SBMU 1

11 MWh flexible volumes and 5 MWh BOA

= + 16 MWh to Total System



- SBMU 1 has delivered **+16 MWh** in total
- We need to account for balancing volumes when calculating flexible volumes
- Otherwise

$$\begin{aligned} \text{flexible volumes} &= \text{metered volume} - \text{baseline volume} \\ &= 8 - 0 \\ &= 8 \quad \text{incorrect} \end{aligned}$$

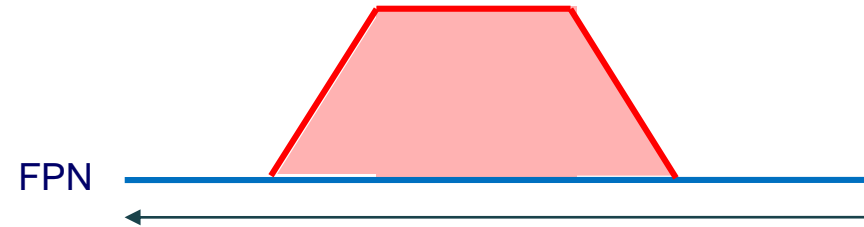
**Note** for other BSC Parties Balancing Volumes are calculated per BMU ad then aggregated to Energy Account level where they are used to adjust the account imbalance position.

$$\begin{aligned} \text{Energy Imbalance Volume} &= \sum [\text{Flexible volume}] - \sum \text{Balancing Volumes} - \sum \text{Contracted Volumes} \\ &= 16 - 5 - 11 \\ &= 0 \quad (\text{assuming the VLP has only 1 SBMU}) \end{aligned}$$

# How do we calculate Balancing Energy Volumes?

**Balancing energy volumes** are the NGESO instructed deviation from a submitted Physical Notification (PN)

$$= \text{Metered Volume} - \text{FPN}$$



Where a **Final Physical Notification (FPN)** represents the most recently submitted expected level of Export or Import at the Transmission System Boundary

Given both [flexible volumes] and balancing energy volumes are both calculated deviations from a baseline:

- How can we distinguish between wholesale market volumes and balancing energy volumes?
- Do we need to do so at a site level?
- How should we deal with under delivery?



# NEXT STEPS

## Next Steps

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Elxon to continue to document requirements, wider questions and future topics

### WG03 – Proposed Agenda

- **Principle 2:** The VLP shall be the Balancing Responsible Party (BRP) for any wholesale market [flexible volumes] trades. Neither the counterparty nor registered Supplier shall bear any liability for delivery of the trade.
- **Principle 3:** [Flexible volumes] are a measurable commodity similar to traditional ‘Metered Volumes’ in that they both represent in an import/export MWh deviation to the Total System
- **Revenue Stacking** – How balancing actions and wholesale market activity interact
  - Imbalance position
  - Non – delivery charge
  - Adjustment mechanism
  - VLP submission

## P415: Next Steps

Event	Date
Present IWA to Panel	8 October 2020
Workgroup meeting 1	11 December 2020
<b>Workgroup meeting 2</b>	<b>9 February 2020</b>
Workgroup meeting 3	W/C 15 March 2021
Workgroup meeting 4	W/C 17 May 2021
Workgroup meeting 5	W/C 14 June 2021
Workgroup meeting 6 -10	W/C 5 July 2021 – October 2021
Present Assessment Report to Panel	10 February 2022
Present Draft Modification Report to Panel	10 March 2022
Issue Final Modification Report to Authority	14 March 2022



# ELEXON

## THANK YOU

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**Ivar Macsween**

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