

# P376 - Using a Baselining Methodology to set Physical Notifications

## Business Requirements Document

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## Introduction

### Purpose

The BSC Change Business Requirements document is produced as part of the 'End to End BSC Change Process' during the BSC Change Assessment process. It is produced in line with ELEXON's standards for Business Analysis. The document is split into sections as follows:

1. BSC Change Summary
  - The introduction provides detail on the objectives, background and scope of the BSC Change described in this document. It also includes any pertinent details on the timing or approach for the production of this deliverable.
2. Business Requirements
  - This section documents the Business Requirements of the BSC Change, as discussed by the workgroup. They are included here in a structured format for consistency and traceability through the implementation phase of the BSC Change.

The purpose of this document is to communicate the Business Requirements of BSC Modification Proposal P376 to BSC Parties, Legal colleagues, Party Agents, other market participants and service providers.

In addition, it describes the anticipated impact on BSCCo (people, processes and systems), BSC Agents, the BSC, Code Subsidiary Documents, and other Configurable Items as well as BSC Parties and Party Agents.

### Document History

#### Document History

Date	Version	Author	Reviewers	Description
4 May 2020	1.0	Damian Clough	John Lucas	
29 June 2020	2.0	Matthew Woolliscroft	Damian Clough	Amended from Settlement Period to Settlement Day granularity
30 October 2020	3.0	Damian Clough	John Lucas	Amended for updated solution and inclusion of Delivered Volumes
16 November 2020	3.1	Damian Clough John Lucas	John Lucas	Amended to clarify points raised by CGI, and introduce new requirement BR3.5 (to ensure that issues providing metered data are resolved in a timely fashion).

9 March 2021	3.2 / 4.0	John Lucas	Matthew Woolliscroft	Amended to address a point raised in the Assessment Procedure Consultation, and clarify the interaction of P376 with Asset Metering and Asset Differencing.
9 October 2021	4.1 - WIP	John Lucas / Lorna Lewin / Shamaila Jawaaid	Analysis & Insights: Sabahat Zafar Settlement & Invoicing: Matt Hall Participant Management: Chris Spence, Allan Toule	Updated to reflect amendments from the P376 Industry Expert Group and further clarifications to bring in line with P375 and cross mod analysis.

## Approvals

Date	Version	Name	Role	Status

## BSC Change Summary

### Problem Statement

P376 'Utilising a Baselining Methodology to set Physical Notifications' was raised at the same time as P375 'Metering behind the Boundary Point'.

To take part in Balancing Services a Physical Notification (PN) must be provided to the NETSO. The PN is a Party's best estimate of flows for a Settlement Period before a Balancing Service is dispatched.

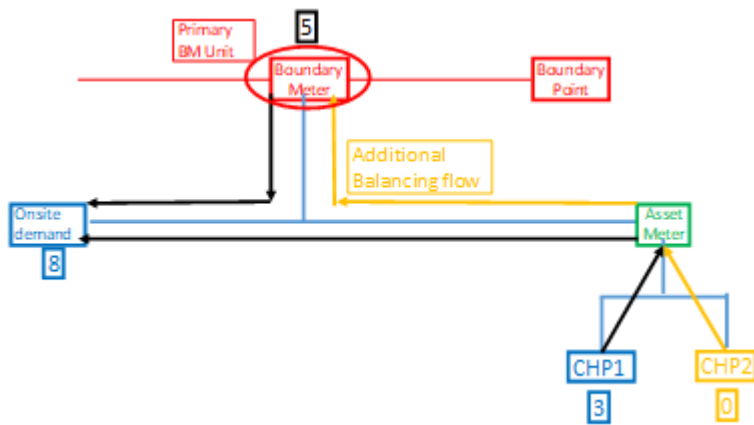
The PN at gate closure becomes a Final Physical Notification (FPN).

The FPN provided to the NETSO is the same value subsequently used to calculate Accepted Volumes (what volume is expected to be provided by the Balancing Service(s) QBS) as well as Expected Metered Volumes used in the Settlement of the Balancing Service (QME). Expected Volumes for a Balancing Mechanism Unit (BMU) when settling a Balancing Service is equal to the FPN plus Accepted Volumes. The formula within the BSC is as follows:

*Period Expected Metered Volume  $QME_{ij} = FPN_{ij} + QBS_{ij}$*

If actual metered volumes do not equal expected volumes this may result in Imbalance or Non delivery charges, or may fully reward delivery when it has only been partially delivered.

As an example, in the diagram below, the FPN submitted to the NETSO will equal -5 at the Boundary Meter if perfectly forecasted and rather than +3 as shown at the asset meter, as actual metered volumes will be based on data received from the Boundary Meters. If an asset can offer +3 as a Balancing Service and this is accepted by the NETSO, Accepted Volumes will equal 3 and Expected Volumes will therefore equal -2. If the Balancing Service is fully delivered actual volumes at the Boundary Meter should also equal -2.



The accuracy of the FPN is therefore crucial to Settlement.

Aggregators have stated the difficulty in setting accurate FPNs as a blocker in participating in the Balancing Mechanism, as Parties must forecast onsite Demand when submitting the FPN.

P375 'Metering behind the Boundary Point' seeks to allow metering volumes relating to the assets providing the Balancing Service to be used in Settlement whereas previously only Boundary Metering could be used. This will allow other demand on site to be isolated from those assets providing the Balancing Service thus aiding the setting of the FPN. In this case, the FPN above could equal 3 as actual metered volumes in Settlement will be received from the Asset Meter and not the Boundary Meter.

This P376 seeks to set the expected metered volumes used in Settlement (but not dispatch) on behalf of the Party. SVAA will forecast the expected flows through the nominated MSID/AMSID Pairs within the BMU where Parties choose to use the solution. In the example expected volumes will be 5. Previously, the expected metered volumes calculation used the same FPN value as is used for dispatch, meaning Parties would need to be able to forecast onsite demand. P376 proposes for these to be decoupled and therefore be different values. For example the Party (without the P375 solution) would be able to submit an FPN to the NETSO relating to the assets on site +3 (Operational Metering), and in Settlement the expected metered volumes can be calculated relating to the MSID Pairs (the Boundary Meters) within the BMU (-5). Without P376 the FPN submitted to NETSO has to correlate to the metering data received by ELEXON and used in Settlement due to the risk of Imbalance and Non Delivery Charges. As Asset metering may not isolate just generating assets, the P376 solution should not prevent baselining techniques being applied to asset metering.

The Party responsible for the Secondary Balancing Mechanism Unit (SBMU) or Additional Balancing Mechanism Unit (ABMU) (hereafter just 'BMU') will register with SVAA that they require the Expected Volumes calculation in Settlement to not utilise the FPN received from the NETSO. If they do not state this requirement, Settlement of the Balancing Service will continue under the process defined by P344. The P376 solution does not alter the requirement for Parties to submit accurate FPNs to the NETSO as detailed in the Grid Code. It will however allow more accurate FPNs to be submitted to the NETSO as Parties can submit FPNs relating to just the assets providing the Balancing Service and not the whole site.

P379 'Multiple Suppliers through Meter Splitting' is also related to P375 as will also use the concept of asset metering to separate volumes out from those Metered at the Boundary Point. However, as P376 looks at how 'typical' energy flows at the Boundary Meter can be predicted rather than how volumes can be separated, we do not foresee any material impacts between P376 and P379.

This document lists the Business Requirements for the solution(s) for P376.

**For the purposes of these Business Requirements MSID Pairs can have the meaning given by P344 for Boundary Meters, or be Asset Meters introduced by P375, unless otherwise stated. This is for ease of use of these Business Requirements.**

## Objectives and Scope

### P376 Objective: Improve the accuracy of Expected Metered Volumes

P376 seeks to enable greater participation in the BM and TERRE by removing barriers to participation faced by aggregators, who may not have access to sufficient timely data to be able to provide an accurate FPN, and may therefore face imbalance or non-delivery charges due to the inaccuracy. P376 seeks to ensure that Balancing Service providers can be paid commensurate to the service they deliver by calculating a baseline on which to measure the volume of service provided, which will more accurately reflect actual usage at the time of delivery, as well as allowing Parties to submit more accurate FPNs to the NETSO.

## P376 Scope

The P376 solution will be usable by Virtual Lead Parties (VLPs) (for sites in an SBMU) and Suppliers (for sites in an ABMU) only. VLPs or Suppliers who wish to use the solution will need to inform ELEXON of which MSID Pairs will have a baseline settlement volume calculated, which will also be used to calculate Delivered Volumes for those same MSID Pairs. VLPs and Suppliers who do not elect to use the solution, and other Parties will continue to provide FPNs to NGESO as is the current process. The use of the Baselining solution is a new process and will be optional

### Architecture Fit / Solution Alignment

[Use the business architecture view to highlight which capabilities and processes this change impacts. Work with our Architecture team to provide an overview of how the change fits into the current landscape.  
Work with the relevant Mod teams to provide an overview of related solutions (i.e. for other Changes) and how they are aligned (or not)]

### Glossary and Definitions

Term	Definition
MSID Baseline Value	The calculated expected energy flows for each MSID (or AMSID) Pair using a Baseline Methodology.
Baseline Expected Volume	The sum of MSID Baseline Volumes in a BMU
Submitted Expected Volume	Party submitted value to account for expected energy flows at MSID Pairs in a Baselined BMU that are not using the P376 solution.
Baselined BMU	A BMU that has at least one MSID Pair registered for baselining
Settlement Expected Volume	The total expected energy flows in a BMU. Calculated as the sum of Baseline Expected Volume and Submitted Expected Volume.
Default Submitted Expected Volume	A value that the Submitted Expected Volume will revert to if no other submission is received.
Baselined 'B'	Status of an MSID Pair indicating that the MSID Pair will have its expected energy flows calculated through a Baseline Methodology.
Submitted Volume 'S'	Status indication that an MSID Pair is in a Baselined BMU, but will have its forecast flows submitted by the responsible Party rather than using a Baseline Methodology.
Inactive 'I'	Status indicating that volumes associated with the MSID Pair will not be used in calculation of trading charges.
Delivery Volume	Notification by a Virtual Lead Party of what assets it has used to provide a Balancing Service
Event days	Discounted days where the site is doing something not normal, such as providing a Balancing Service.
Bid Offer Acceptance (BOA)	instructions from the System Operator to a specific BM Unit to increase generation / reduce demand (Offer) or to reduce generation / increase demand (Bid).
Replacement Reserve Activation (RRA)	Replacement Reserve bids and offers that have been accepted under Project TERRE

### References

Document	Version	Author	Date
P375 Solution			

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## Current State

The following summary describes how the FPN is currently used within Dispatch and flows through into Settlement. These processes will not change. However what P376 aims to do is alter the value of the FPN within Settlement and decouple this FPN from the one currently used which is the FPN sent to NGESO. Therefore expected volumes and delivered volumes will subsequently change if the FPN value alters. The solution will allow the FPN to be altered for Additional BMU's as well. With Additional BMU's; assigning delivered volumes to adjust Suppliers volumes is not as detailed, as the Balancing Responsible Party and the Balancing Service Provider are the same Lead Party.

### Registration

- a. Become registered as a VLP
- b. Create a SBMU (per GSP Group)
- c. Allocate Boundary Point MSID Pairs to SBMU

### Bidding & Despatch

- d. Submit a PN for the SBMU
- e. NGESO Dispatch SBMU using FPN
- f. VLP sends SVAA indicating how delivered volumes should be allocated to each MSID Pair within SBMU

### Supplier Volume Allocation

- g. SVAA calculates total metered volume for Secondary BM Unit
- h. SVAA received Delivered Volumes from VLPs
- a. SVAA calculates Delivered Volumes per Secondary BM Unit and Supplier BM Unit

### Settlement

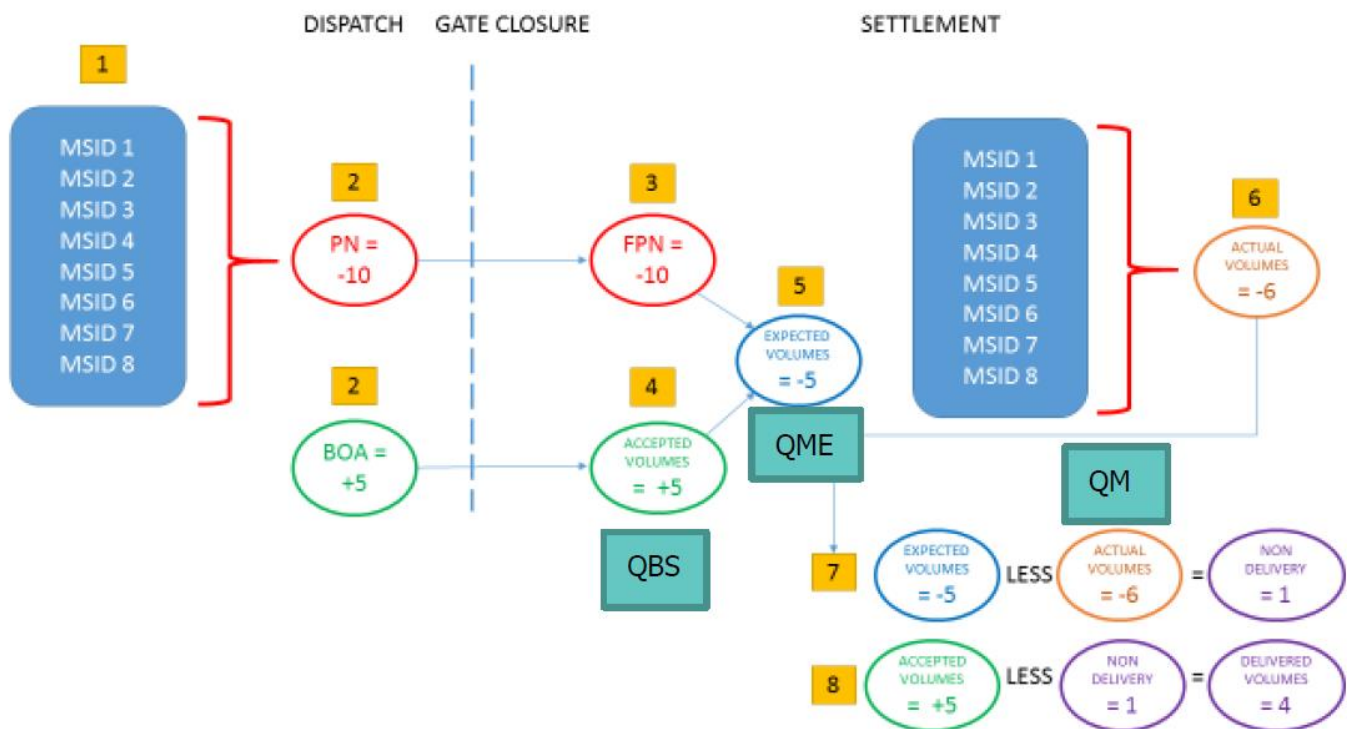
- j. SAA calculates Acceptances using NETSO BOAs and RRAs
- k. Accepted Volumes (QBS) + FPN equals Expected Metered Volumes (QME)
- xx. Comparison between actual metered volumes and expected volumes equals delivered volumes
- IIIIIIII. Dependant on the above figure VLP may be charged Imbalance and Non delivery charge
- n. Delivered volumes declared by VLP (step h) are compared to total delivered volume (step k) and adjusted if necessary
- o. Suppliers volumes are then adjusted using these delivered volumes to ensure Supplier are not exposed to Imbalance Charges from the Balancing Service

### Change of Party

- p. Parties can register an existing MSID pair which is within another Party's SBMU
- q. The MSID pair automatically swaps but the incumbent Party is informed of the swap and can challenge the swap

The diagram below illustrates the **current** process for dispatch and settlement of a balancing service and the key role the FPN plays throughout the process.

### Current process before P376



1. The Party creates a SBMU/ABMU and registers MSIDs to that BMU
2. The Party if it wishes to offer a Balancing Service submits a PN to NGESO and a series of Bids and Offers. If accepted NGESO dispatches the BMU using the FPN as a base and the BOAs
3. The FPN becomes final at Gate Closure. SVAA receive the FPN from NGESO
4. Using the dispatch instruction SVAA calculates accepted volumes. Accepted Volumes are the delta change away from the FPN offered by the Balancing Service Provider. In the example above the BSP has offered to reduce demand by 5 units, and NGESO have accepted that offer For simplicity the same units are used within this diagram
5. FPN plus accepted volumes equals the expected volumes for the FPN. I.e. if you the Party has fully completed its offer than this is the metered volumes we would expect to see (includes the delta change)
6. SVAA calculates actual metered volumes for the relevant BMU, which is an aggregation of all MSID/AMSIDs metered volumes for that SBMU/ABMU
7. Expected Volumes less Actual Volumes equals Non Delivery volumes. Over delivery is capped at Accepted Volumes. As the FPN feeds into Expected Volumes this highlights the importance of the FPN being an accurate reflection of flows at the time of delivery
8. Accepted Volumes less Non Delivered Volumes equals Delivered Volumes. Delivered Volumes are used to adjust the Primary Supplier of the MSID or related MSID in the case of AMSID's. For ABMU's the adjustment is less complicated as all MSIDs belong to the same supplier.



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## Future State

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### Overriding principle

The FPN currently used in Settlement to calculate Expected Volumes for a BMU will be replaced by an expected volume calculated through a new process and therefore can be a different value from the FPN submitted to NETSO for dispatch if the Party notifies ELEXON that it wishes for this to happen.

The Baseline for an MSID Pair will be a forecast of expected usage based on historic metering data relating to those Meters. As with all forecasts the Baseline Methodology may not be 100% accurate. This is a risk which the Party will accept with the service. The Baselining service is optional. The various methodologies will be monitored, with the option to amend existing methodologies or introduce new ones via Change Proposals and as part of an annual review.

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### Solution

A BMU can contain a mix of sites whose Expected Volumes for Settlement when providing a Balancing Service is derived through a combination of a Baseline Expected Volume and a residual volume for the remaining MSID Pairs within the BMU not selected for baselining which is submitted to BSCCo by the Party, with Accepted Volumes (both Bid offer and Replacement Reserve) then applied to these volumes. Parties will still be required to send an accurate PN to NETSO for dispatch purposes - this is a separate process and will not be affected by P376.

The FPN sent to NETSO for dispatch is an FPN for all sites within that BMU. If the P376 solution is selected by a Party, they will be able to submit a FPN to NETSO which relates to the assets and not the boundary meter as is the current requirement.

Within a BMU there may be a mix of MSID Pairs which do not suit having their expected usage calculated via a baseline methodology, for example where the site is highly variable. The Party can therefore select which sites they want expected volumes to be calculated via a baseline methodology. These will be called MSID Baseline Values and when aggregated for a BMU will become **Baselined Expected Volumes**. For the remaining sites the Party must submit an expected volume in total for all those sites not being baselined (not individually). These will be called **Submitted Expected Volume**. The summation of Submitted Expected Volumes and calculated Baselined Expected Volumes will result in an overall expected volumes for that BMU which will be called the **Settlement Expected Volume**. The Settlement Expected Volumes will replace the current FPN received from the NETSO in the Settlement of the Balancing Service.

There may be multiple approved baseline methodologies available. The Party must choose the most appropriate methodology to use for each MSID Pair at the point of registration. It will be in the Party's best interest to choose the most suitable baseline to ensure it is accurately paid for the services it provides.

If an MSID Pair is selected to have its expected volumes derived from a Baselining methodology for the first time, SVAA will request sufficient historic metered data, from Half Hourly Data Aggregators (HHDA) to allow this to happen.

If there is insufficient metered data to create a Baselined Expected Volume under a baseline methodology (for example the MSID may be a newly registered Asset Metering System), the MSID Pair will be excluded from baseline calculation and the Party notified of this. This allows the Party to choose the next most appropriate action. It may be a temporary problem with providing data to Settlement, which will be fixed in the next Settlement Run. Alternatively the Party can then opt to allocate the MSID Pair to its BMU and include it in its Submitted Expected Volumes figure or (in the case of an MSID Pair in a VLP's Secondary BM Unit) make that MSID Pair inactive within the BMU until sufficient demand data becomes available.

For Inactive MSID Pairs SVAA will instruct the HHDA to start sending metered data and notify the VLP when a Baselined Expected Volumes can be created but whilst inactive, metered volumes for those MSID Pairs will not contribute to actual metered volumes for the BMU. A VLP may set a site to Inactive when a site is not available to provide balancing services, but does not want to deregister the MSID Pair. If the MSID wasn't set to inactive, then the Metered volumes for that MSID Pair would contribute to the VLP's Actual Metered Volumes, and so would need to be able to forecast the volumes to ensure it was accurately paid for Balancing Services provided by other sites.

The Baselined MSID Pair will also be used to calculate Delivered Volumes for those MSID Pairs registered as Baselined MSID Pairs within a SBMU. This will replace the current process where the VLP sends to SVAA what it believes has been delivered by each Baselined MSID Pair (as well as all other MSID Pairs within the SBMU which will not change).

Under the P376 solution, the FPN used for dispatch (if the Party so wishes) will be decoupled from the value used in Settlement processes. For this, we will use the following conventions.



- The calculated value of expected usage for each MSID Pair, using the baselining solution, will be known as the **MSID Baseline Value**.
- The sum of the MSID Baseline values in a BMU will be known as the **Baselined Expected Volume**.
- Where a Party has MSID pairs within its BMU whose expected volumes are not calculated via a baseline methodology the Party will include the MSID Pair in its **Submitted Expected Volume**.
- The sum of all individual Baselined Expected Volume and the Submitted Expected Volume shall be known as the **Settlement Expected Volume**.
- A BMU consisting of MSID Pairs that use the baselining solution implemented by P376 will be known as a **Baselined BMU**.

P376 introduces the concept that the FPN sent to NETSO for dispatch purposes, and the expected volumes used within settlement can be different, if the Lead Party indicates to SVAA that they want them to be different values. This is their commercial decision to do so. **Please note that all Suppliers can use the P376 process for the Settlement of Balancing Services, not just VLPs**

## Registration

- Become registered as a Party.
- Create a SBMU (VLP only) or ABMU (Supplier) per GSP Zone.
- Party Registers a BMU as baselined with CRA via Elexon Kinnect
- Allocate Boundary Point MSID Pairs to SBMU (VLPs) or ABMU (Suppliers) and/or (for AMVLPs only) register AMSID Pairs and allocate them to SBMU.
- Register MSID Pair or AMSID Pair for Baselining to create a Baselined Expected Volume
- Party Registers Event Days or (for VLPs and AMVLPs only) makes MSID Pairs or AMSID Pairs Inactive

## Bidding & Despatch.

- Submit a PN to NETSO for the BMU
- NGESO Dispatch BMU using FPN.
- Party sends SVAA allocation matrix showing how delivered volumes should be allocated to each MSID Pair within SBMU for those MSID Pairs which are not Baselined MSID Pairs.
- Party registers a Submitted Expected Volume before Gate Closure (1 hour before Settlement Period starts) for those MSID Pairs within its Baselined BMU who have not being registered as requiring a Baseline Expected Volume.

## Supplier Volume Allocation

- SVAA calculates total metered volume for BMU.
- SVAA calculates Delivered Volumes for Baselined MSID Pairs by comparing MSID Baseline Values to actual MSID Metered Volumes.

## Settlement

- SAA calculates accepted volumes using FPN, NETSO BOAs and RRAs.
- SVAA receives demand data from HHDA/DC's and creates Baseline Expected Volumes per MSID Pair / AMSID Pairs for those MSID Pairs / AMSID Pairs which have registered this requirement
- Accepted Volumes + newly calculated Settlement Expected Volumes (Summation of Baseline Expected Volume + Submitted Expected Volume, sent by the Party) (instead of FPN) equals expected volumes for Parties using this P376 solution.
- Comparison between actual metered volumes and expected volumes equals delivered volumes.
- Dependent on the above figure the Party may be charged Imbalance and Non delivery charge.

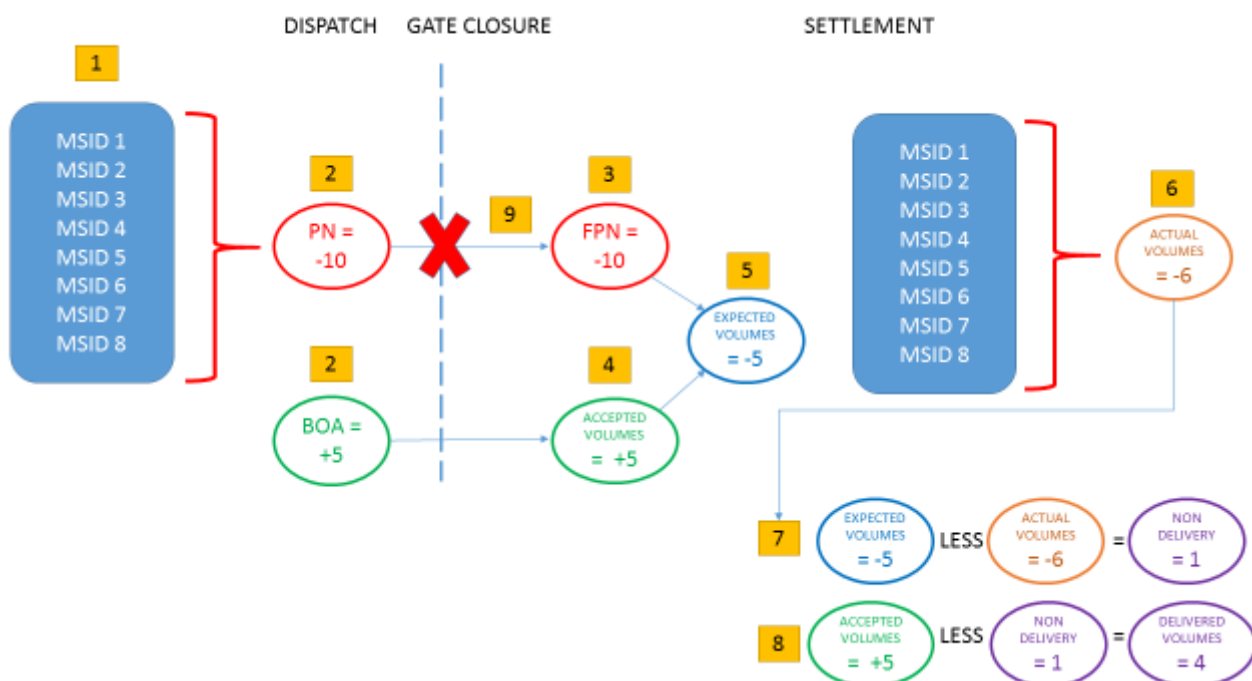
- r. Delivered volumes declared by VLP (step i) for MSID Pairs which are not Baselined and Delivered Volumes for Baselined MSID pairs / AMSID Pairs calculated by SVAA are compared to total delivered volume (step j) and adjusted if necessary.
- s. Suppliers volumes are then adjusted using these delivered volumes to ensure Supplier do not profit/loss from the Balancing Service.

### Change of VLP

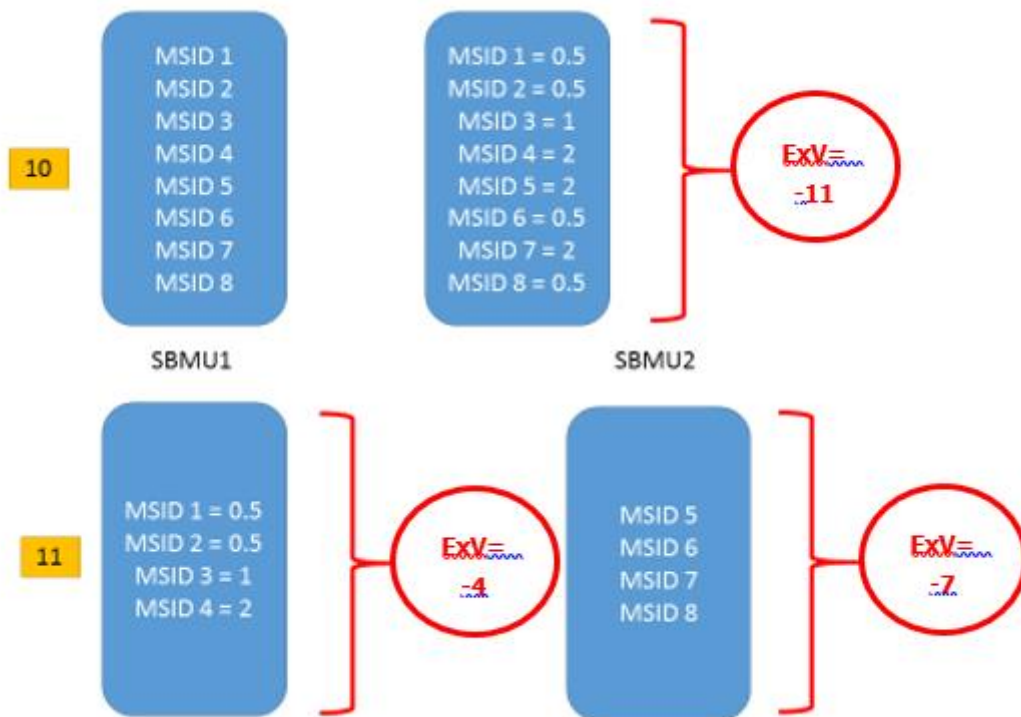
- t. When a MSID pair / AMSID Pair is acquired by a new Party, its status will revert to 'included in Submitted Expected Volume' as default.
- u. The new Party responsible for the MSID pair / AMSID Pair will be required to re-register the MSID Pair for a different status from that of the default i.e. baselining or inactive

The above process details how the FPN is used within Dispatch and flows through into Settlement. The above processes will not change. However what P376 aims to do is create a new value of expected volumes which will replace the FPN. Therefore expected volumes and delivered volumes will subsequently change if the expected volumes value alters.

1. P376 introduces the concept that the FPN used to dispatch the asset will be replaced with a newly calculated expected volumes (ExV) used in Settlement if the Party notifies SVAA that they want these two values to be different.

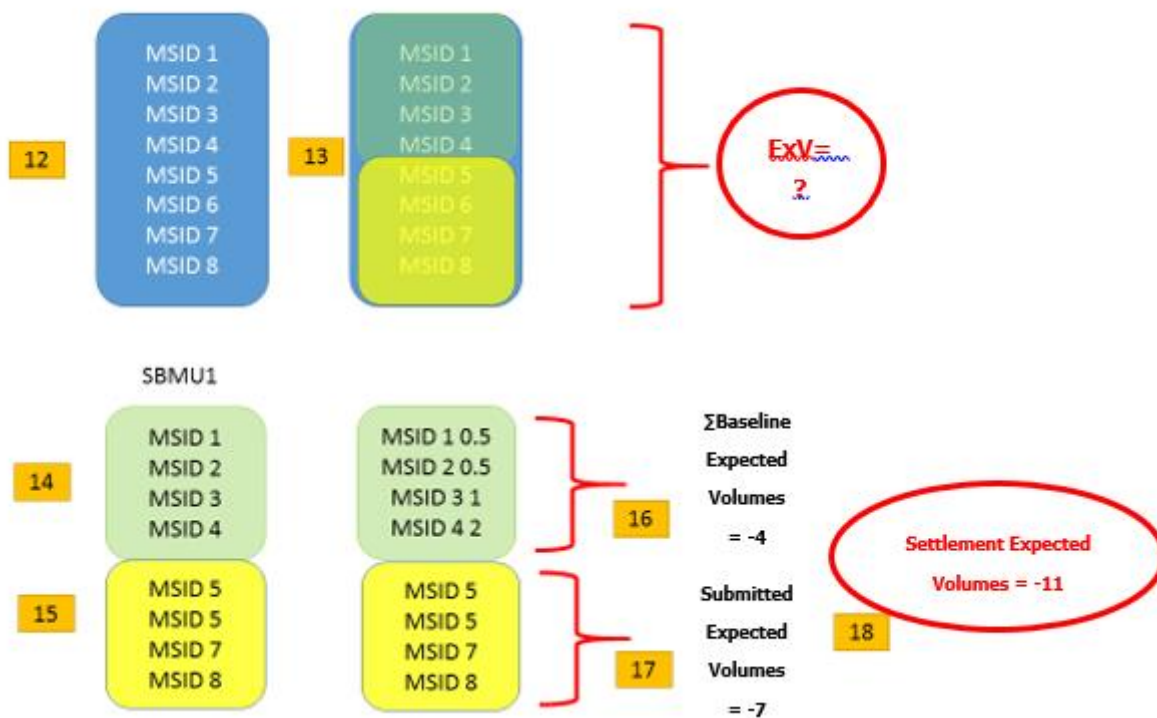


Therefore how can expected volumes (ExV) in settlement be created when not using the FPN?



- The Workgroup examined the simpler solution of the Party registering that the FPN for a BMU be replaced with expected volumes created using a baseline methodology. All MSID Pairs within a BMU will have an MSID Baseline value created via the same baseline methodology. These individual MSID Baseline volumes will be summated to create a Baseline Expected Volume for the whole BMU.
- This solution would require all MSID Pairs within the BMU to be treated the same. It was noted by the Workgroup that a Party's portfolio may be made up of MSID Pairs which suit a baseline methodology, but may also contain MSID Pairs where the Party would be better placed to calculate flows and submit an expected volumes for these MSID Pairs. For example they had installed asset metering or the site was highly variable. To do this would mean splitting their portfolio up and creating separate BMUs, which may create problems delivering the accepted volumes and being dispatched in the first place.

Create concept of baseline and submitted **expected volumes**



The Workgroup considered how the Expected Volumes could be created for a BMU which didn't involve the creation of separate BMUs. If a Party had to split up its portfolio so that it had separate BMUs for MSID Pairs that would use the baselining solution and a BMU for MSID Pairs that would have submitted expected volumes, then this would increase burden for the Party and may reduce the available balancing volume in the BMU.

Parties that want to use the P376 solution will register the BMU to have a newly calculated Settlement Expected Volumes which will replace the value of the FPN submitted to NETSO in Settlement. If the Party does not register these requirements then Expected Volumes for the BMU will utilise the FPN submitted to NETSO for dispatch. I.e. status quo.

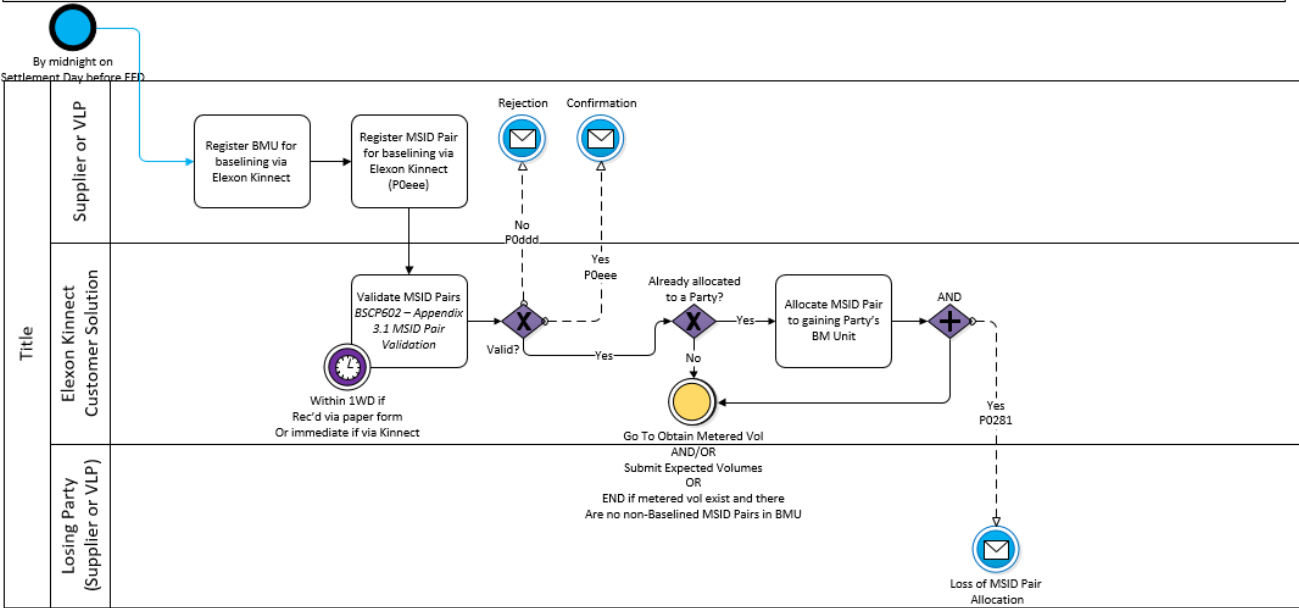
- When registering MSID Pairs to the BMU, the Party will register if they wish the expected volumes for that individual site to be created via a baselined methodology process or for the site to be part of a Party Submitted Expected Volume.
- For the purposes of calculating the Settlement Expected Volumes the BMU is 'split' up within SVAA into sites which will have a MSID Baseline Values and sites where the Party will submit a Submitted Expected Volumes. However they will all still belong to the same BMU. In the example above MSID Pairs 1 to 4 have been nominated by the Party as having their expected volumes calculated via a baselined methodology.  
**Baseline Expected Volume.**
- MSID 5 to 8 are better suited to having their expected volumes nominated by the Party themselves.  
**Submitted Expected Volume.**
- The baselined methodology has calculated individual site expected volumes (**MSID Baseline Values**) which are summated into a **Baseline Expected Volume** of -4.
- The Party submits a **Submitted Expected Volume** for the remaining sites in total (not per site). The Party thinks that in aggregation those sites will have an expected volume of -7 in total
- The **Baselined Expected Volume** and **Submitted Expected Volume** are added together to create a **Settlement Expected Volumes**.

# Business Requirements

## Business Processes

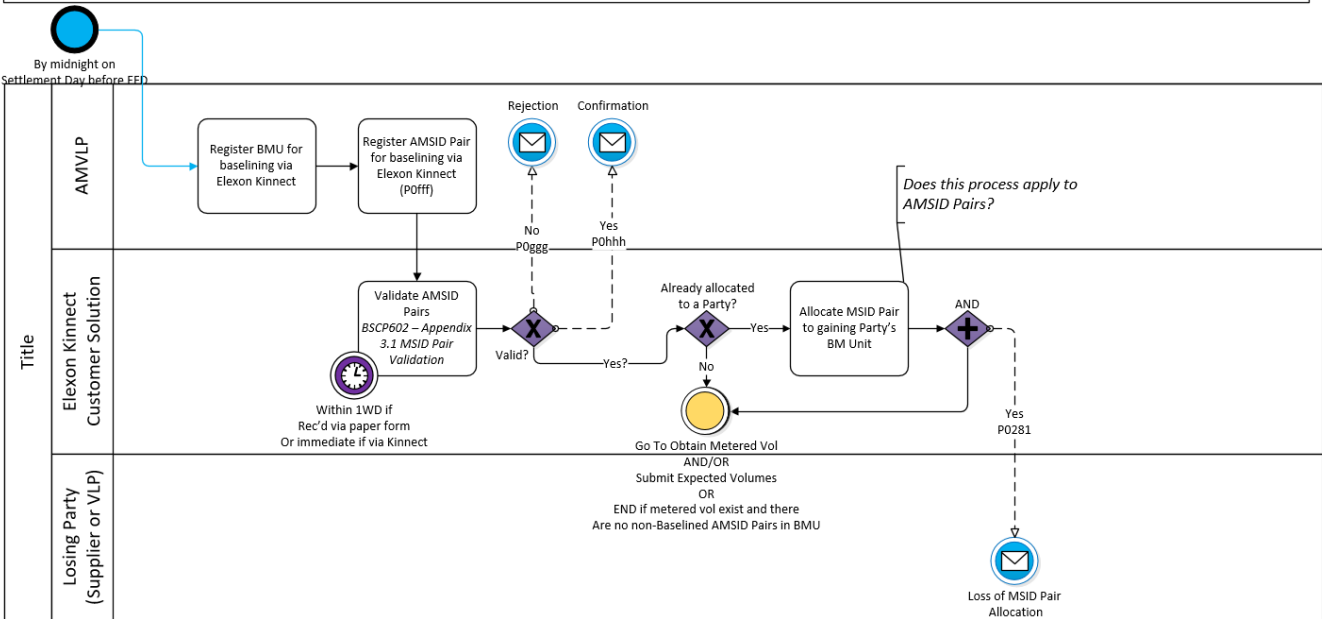
### Draft- Register MSID Pairs for Baselineing

#### P376 Registering MSID Pairs for Baselineing



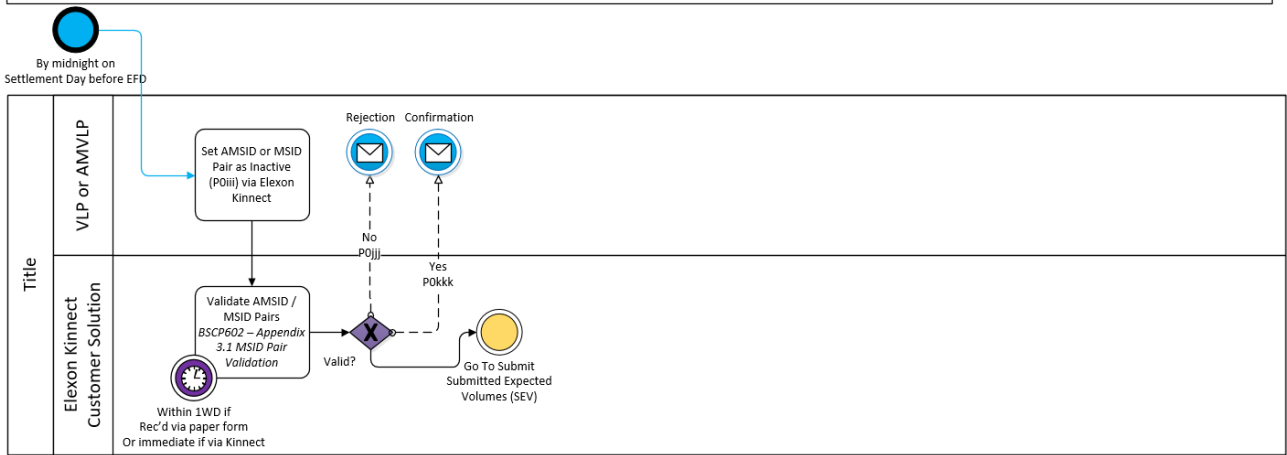
### Draft-Register AMSID Pairs for Baselineing

#### P376 Registering AMSID Pairs for Baselineing



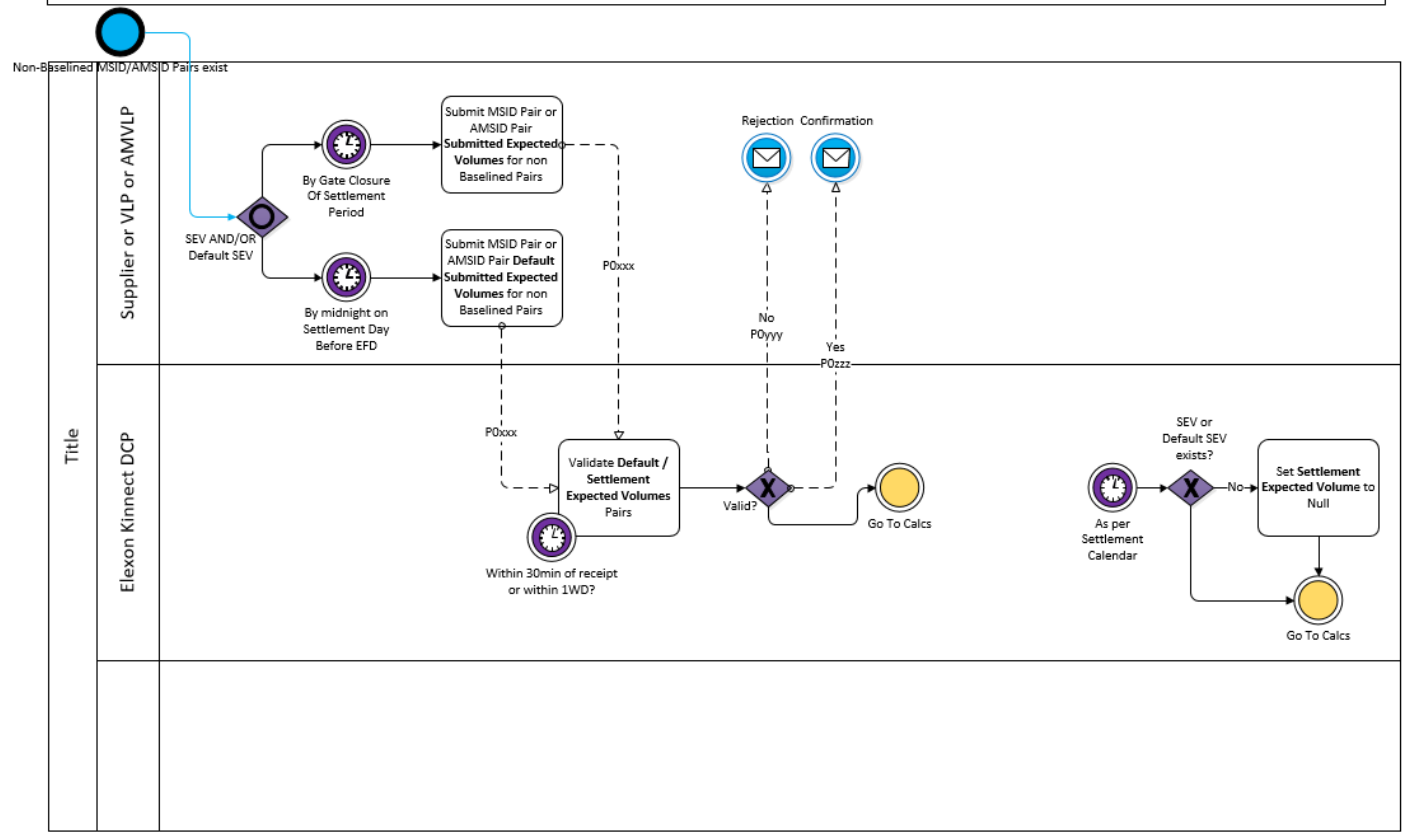
# ELEXON

## P376 Registering AMSID Pairs/MSID Pairs as Inactive for Baselining



# ELEXON

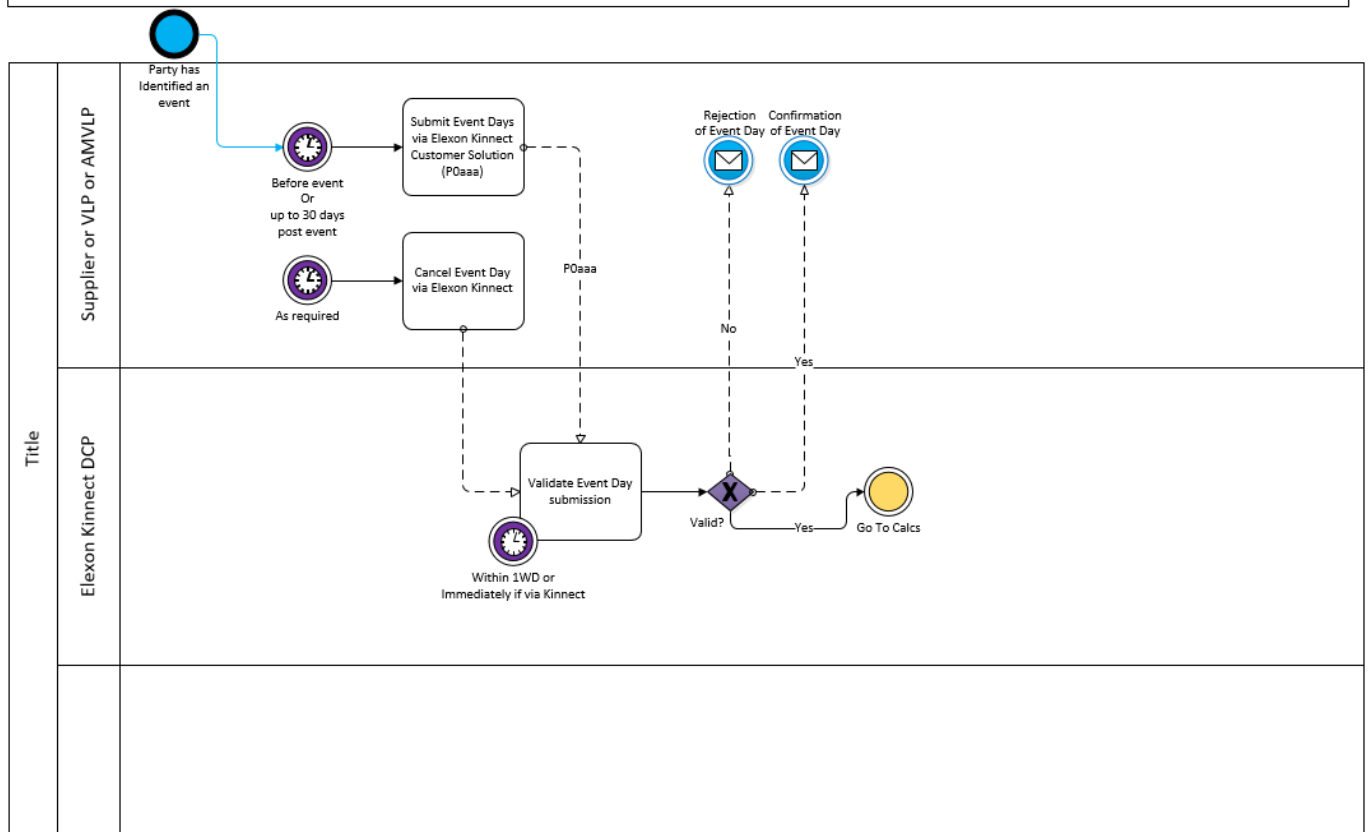
## P376 Submitting Submitted Expected Volumes





# ELEXON

P376 Submitting Event Days – Days where a site may be doing something out of the ordinary, such as providing a Balancing Service



## Business Requirements

### Introduction to the Business Requirements

For the purposes of these Business Requirements MSID Pairs can have the meaning given by P344 for Boundary Meters, or be Asset Meters introduced by P375, unless otherwise stated. This is for ease of use of these Business Requirements.

## Registration

Ref	Requirement	Priority
P376-BR-8	<p><b>Handling remaining non Baselined MSID/AMSID Pairs within the BM Unit</b></p> <p>For all other-relevant-for-baselining MSID/AMSID Pairs within a Baselined BM Unit not registered for the Baselining solution, the Party will be required to take those into account when submitting an expected volume. This will be called the Submitted Expected Volume.</p> <p>When a BM Unit is registered as Baselined all the relevant-for-baselining MSID Pairs and AMSID Pairs within the BM Unit will automatically have the indicator "S" applied to it if they do not have the Indicator "B" registered by the Party. This informs the registrant that they must include a forecast of the metered volumes for the relevant meter in their Submitted Expected Volume.</p>	<b>Must Have</b>

	<p>Notably,</p> <p>If the MSID Pair is a Boundary Point then the submitted expected volume will be for related to the MSID Pair i.e. be for the whole site</p> <p>If the MSID Pair is a Boundary Point selected for differencing as part of P375 then this will be for the whole site less metered volumes for the AMSID Pairs</p> <p>If the MSID Pair is an AMSID Pair then this will be for the Asset Meters within the registered Asset Metering System</p>																					
P376-BR-66	<p><b>placeholder rules: registration rules</b></p> <table><tr><td></td><td><b>Register MSID Pairs for Baselining (SBMU)</b></td><td><b>Register MSID Pairs for Baselining (ABMU)</b></td><td><b>Register AMSID Pairs for Baselining (SBMU)</b></td><td><b>Register AMSID Pairs for Baselining (ABMU)</b></td></tr><tr><td>Supplier</td><td>No</td><td>Yes</td><td>No</td><td>No</td></tr><tr><td>VLP</td><td>Yes</td><td>No</td><td><b>No</b></td><td>No</td></tr><tr><td>AMVLP</td><td>Yes</td><td>No</td><td>Yes</td><td>No</td></tr></table>		<b>Register MSID Pairs for Baselining (SBMU)</b>	<b>Register MSID Pairs for Baselining (ABMU)</b>	<b>Register AMSID Pairs for Baselining (SBMU)</b>	<b>Register AMSID Pairs for Baselining (ABMU)</b>	Supplier	No	Yes	No	No	VLP	Yes	No	<b>No</b>	No	AMVLP	Yes	No	Yes	No	<b>Must Have</b>
	<b>Register MSID Pairs for Baselining (SBMU)</b>	<b>Register MSID Pairs for Baselining (ABMU)</b>	<b>Register AMSID Pairs for Baselining (SBMU)</b>	<b>Register AMSID Pairs for Baselining (ABMU)</b>																		
Supplier	No	Yes	No	No																		
VLP	Yes	No	<b>No</b>	No																		
AMVLP	Yes	No	Yes	No																		
P376-BR-67	<p><b>placeholder rule: handling MSID Pairs and AMSID Pairs</b></p> <p>MSID Pairs and related AMSID Pairs must be handled as a group when registering for baselining, providing event days and making inactive ...??</p>	<b>Have</b>																				
P376-BR-1	<p><b>Register a BMU for Baselineing</b></p> <p>If a Supplier, or a VLP/AMVLP, wishes for <b>Settlement Expected Volumes</b> to replace the FPN for their Additional BM Unit (ABMU) or Secondary BM Unit (SBMU) in Settlement they will notify the Central Registration Agent (CRA) via the Elexon Kinnect Customer Solution. This will be reflected in the BSP15 Registration process.</p>	<b>Must Have</b>																				
P376-BR-2	<p><b>Baselined BM Unit Indicator for Baselined BMUs</b></p> <p>A new Flag will be created called Baselined BMU Indicator, which has values of True or False. If the Flag is set to True the BM Unit will be known as a Baselined BM Unit. For existing SBMU's and ABMU's, the Baselined BMU Indicator will be set to False which can be subsequently changed via registering the SBMU/ABMU for baselining via Elexon Kinnect Customer Solution.</p> <p>We are currently seeking clarification with the Industry Expert Group of whether the Baselined BMU Indicator should be added to the CRA-I014 and CRA-I020 data flows, in order to report changes to the Indicator.</p>	<b>Must Have</b>																				
P376-BR-3	<p><b>Register MSID Pairs or AMSID Pairs for Baselining</b></p> <p>If a Supplier or VLP/AMVLP requires the expected volumes for a MSID Pair or AMSID Pair to be created via a Baseline Methodology then it must register each MSID Pair or AMSID Pair for Baselining via Elexon Kinnect Customer Solution, by setting the MSID Pair or AMSID Pair Baselining indicator to 'B'. The party will need to register the BM Unit as a Baselined BM Unit first for the baselining configuration to take effect. This will be reflected in BSCP602 'SVA Metering System Register'.</p> <p>Following registration of the MSID Pair(s) or AMSID Pair(s) as Baselined, the SVAA Balancing Service Register is updated to reflect that the MSID Pair or AMSID Pair has been registered for baselining.</p>	<b>Must Have</b>																				
P376-BR-75	<p><b>MSID Pair / AMSID Pair Baselining Indicator</b></p> <p>The MSID Pair / AMSID Pair Baselining Indicator can be set to:</p> <ul style="list-style-type: none"><li>'B' for Baselined MSID Pairs or AMSID Pairs</li><li>'S' for non Baselined MSID Pairs or AMSID Pairs where the Lead Party will provide Submitted Expected Volumes for the MSID Pair/AMSID Pairs</li><li>'I' for MSID Pairs or AMSID Pairs that are set to Inactive.</li></ul> <p>This is subject to business rules (TBC)</p>	<b>Must Have</b>																				
P376-BR-65	<p><b>Select Baselining Methodology for each MSID Pair or AMSID Pair</b></p>	<b>Must Have</b>																				

	Suppliers, VLPs and AMVLPs must be able to select the Baselining methodology applicable to each Baselined MSID Pair or AMSID Pair via Elexon Kinnect Customer Solution. This will be reflected in BSCP602.	
P376-BR-4	<b>Rule: Set delivered volume to zero where Baseline cannot be created for MSID Pair or AMSID Pair</b> If a Baseline cannot be created for a Baselined MSID Pair or AMSID Pair, the SVAA will treat the MSID Pair or AMSID pair as if it had delivered zero volume (by setting its MSID/AMSID Baseline Value to equal the metered consumption) and the Party notified.	<b>Must Have</b>
P376-BR-6	<b>Rules: Baselined methodology as of midnight will be used in calculations</b> The Baselined Expected Volume for the site used in Settlement will be calculated based on the registration details which were registered for that Settlement Day by midnight (24:00) on the previous Settlement Day. For example if a MSID is selected for Baselining at this time, this cannot then be changed. This is to prevent the Party unregistering/registering the site for baselining or choosing a different baseline methodology if they don't like the value being created for a particular Settlement Day. The baseline registration details can be changed at Settlement Day granularity. i.e. the same registration details will be used for a whole Settlement Day.	<b>Must Have</b>
P376-BR-7	<b>Enable Parties to register multiple MSID Pairs or AMSID Pairs for Baselining at a time.</b> The solution must enable a Party to register more than one MSID Pair or AMSID Pairs for the baselining solution at a time. In future aggregators may wish to register multiple MSID/AMSID Pairs often of very small sizes. They would not want to have to input each one separately. The party will do this by submitting a structured data flow / bulk upload via Elexon Kinnect.	<b>Must Have</b>

### Registration

## Registration of BM Unit and MSID Pairs for Baselining

When calculating expected volumes used in the Settlement of Balancing Services the same FPN the Party sends to NETSO to dispatch the asset is utilised. If a Party wishes to decouple the calculation of expected volumes used in Settlement then it must notify CRA of its intentions to do so. The use of this service is optional.

The Party has registered with CRA that the BMU will be a Baselined BMU. The Settlement Expected Volume now needs to be created. All MSID Pairs within a Baselined BMU could have their own individual baseline volume created which when summated equals the Settlement Expected Volume. However not all sites may be suitable to have their expected volume created via a baseline methodology for example they may be highly variable. To avoid having to split a portfolio into different BMUs. it is must be possible for a BMU to have a combination of sites whose expected volume is derived from Baseline or where the expected volume is submitted by the Party, rather than all sites within a BMU having their expected volume derived from a baseline methodology. It is therefore necessary to set up a process where SVAA is notified of the requirement to create a Settlement Expected Volume for an MSID Pair.

The Party will inform CRA that a BM Unit is baselined and register those MSID Pairs in a Baselined BM Unit it wishes to use the baselining solution.

Where these Business Requirements refer to MSID Pair this can mean either MSID Pair or AMSID Pair (introduced by P375).

## Submit Submitted Expected Volumes

Ref	Requirement	Priority
P376-BR-9	<b>Submit Submitted Expected Volume for remaining non Baselined MSID Pairs or AMSID Pairs</b> No later than Gate Closure for a Settlement Period, The Party will be required to submit a single value per BM Unit to SVAA which will be called the Submitted Expected Volumes. This single number should take into account all remaining MSID Pairs or AMSID Pairs allocated to a BM Unit which is now a Baselined BM Unit not registered for a Baselining Methodology as per BR1.	<b>Must Have</b>
P376-BR-10	<b>Submitted Expected Volume = actual metered volumes</b>	<b>Must Have</b>

	For the avoidance of doubt the Submitted Expected Volumes by Parties will not be adjusted by SVAA for losses. This mirrors the existing process for FPNs received from the NETSO which are also not loss adjusted. Therefore Lead Parties should take into account losses in their own calculations when processing Submitted Expected Volumes.. P344 and P375 will ensure disaggregated data per MSID and AMSID will be available to SVAA.	
P376-BR-11	<b>Submit one Submitted Expected Volume for all non baselined MSID Pairs or AMSID Pairs in the BM Unit</b> There is no requirement to submit individual expected volumes for each MSID Pair or AMSID Pair. Parties will submit one figure which will reflect their own forecast of expected metered volumes for all MSID Pairs or AMSID Pairs with the Indicator "S".	<b>Must Have</b>
P376-BR-12	<b>Settlement Expected Volume = Submitted Expected Volume + Baseline Expected Volume</b> The value used in Settlement Calculations of the Balancing Service will be the Settlement Expected Volume, which will be equal to the sum of the Submitted Expected Volume and the Baseline Expected Volume (summation of the MSID Baseline values, AMSID Baseline Values and Net Differencing Baseline Values).	<b>Must Have</b>
P376-BR-13	<b>Submitting a Default Submitted Expected Volume</b> Parties can register a Default Submitted Expected Volume for each Settlement Period. A Default Submitted Expected Volume must be registered by midnight (24:00) on the Settlement Day before it becomes effective.	<b>Must Have</b>
P376-BR-14	<b>Default Submitted Expected Volume as enduring default values</b> If the Party does not register a Submitted Expected Volumes by Gate Closure then the default Submitted Expected Volumes will be used if one has been registered. This will be similar to 'evergreen ECVNs'.	<b>Must Have</b>
P376-BR-15	<b>Submitted Expected Volume = null for no submissions for a Baselined BMU</b> If a Default Submitted Expected Volume and a Submitted Expected Volume has not been registered before Gate Closure for a particular Settlement Period then the Settlement Expected Volume for that settlement period will be NULL. This will signify that a submission was expected, but not received.	<b>Must Have</b>

#### *Submitting an Expected Volume*

The Party will inform CRA that a BM Unit is baselined and register those MSID Pairs in a Baselined BM Unit it wishes to use the baselining solution.

Where these Business Requirements refer to MSID Pair this can mean either MSID Pair or AMSID Pair (introduced by P375).

For all those MSID Pairs within a Baselined BM Unit which have not been registered for a Baselining Methodology the Party must register a **Submitted Expected Volume** with SVAA.

## Obtain historic data

Ref	Requirement	Priority
P376-BR-16	<b>Instruct HHDA to provide historic data for MSID Pairs registered for baselining</b> When an MSID Pair (excluding AMSID Pairs) is registered to have an MSID Baseline Value, SVAA will instruct the HHDA to send a maximum of 60 days' worth of historic data (or as much as is available if less) in one file.	<b>Must Have</b>
P376-BR-17	<b>Handling scenarios for insufficient historic data</b> Where demand data does not exist, the HHDA will inform SVAA that this is the case.	<b>Must Have</b>
P376-BR-18	<b>SVAA notifies Party if demand data unavailable</b> SVAA will then notify the Party if demand data is not available to calculate a baseline value.	<b>Must Have</b>
P376-BR-19	<b>Rule: SVAA doesn't allocate MSID Pair to BMU when insufficient data</b> If insufficient data is available to calculate a Baselined Volume, SVAA will treat the MSID Pair as if it had delivered zero volume (by setting its MSID Baseline Value to equal the metered consumption) and inform the Party. The Party can then choose the next course of action (e.g. whether to wait for data to become available from the HHDA, or whether to make the MSID Pair Inactive).	<b>Must Have</b>
	<b>Exceptions</b>	<b>Must Have</b>

P376-BR-20	<p>In order to ensure that issues in providing required metered data can be resolved in a timely fashion, a new automated process is required for SVAA to reconcile confirmations and rejections from HHDA's (D0355 and D0356 data flows) with the relevant request (D0354 data flow). The process will allow an operator (via the Operator Portal) to immediately visualise the MSIDs for which:</p> <ul style="list-style-type: none"> <li>- A confirmation has been received;</li> <li>- A rejection has been received; or</li> <li>- No confirmation or rejection has been received.</li> <li>- insufficient data to create baselined volumes (TBC)</li> </ul> <p>This requirement applies to all requests for Metered Data i.e. requests for Baselined MSID Pairs (for which historical data is required, as per BR3.1) and requests for non-Baselined MSID Pair (as per the existing processes introduced for P344).</p>	
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#### *Obtain data to calculate baseline*

When an MSID Pair is allocated to a SBMU or ABMU, SVAA will start to receive disaggregated data for that MSID Pair from the HHDA. If the MSID Pair is registered with SVAA for baselining, then SVAA will require historic data for a period before when the MSID was allocated. SVAA will therefore request historic demand data from the HHDA's. For AMSID Pairs SVAA will already have access to all the available demand data sent in from HHDC's. For brand new sites/AMSID Pairs there will be insufficient data to create an MSID Baseline value as no demand data will exist. SVAA currently receive aggregated data for Boundary MSIDs.

Requesting data to calculate a baseline

For new sites or newly registered Asset Meters there may be insufficient data to create an MSID Baseline value (dependent on the Baseline Methodology being used).

## Inactive MSID/AMSID Pairs

Ref	Requirement	Priority
P376-BR-29	<p><b>Parties can make multiple MSID Pairs or AMSID Pairs inactive at the same time</b></p> <p>Virtual Lead Parties and Asset Metering Virtual Lead Parties will be able to make multiple MSID pairs (VLPs) or AMSID Pairs (AMVLPs) inactive at the same time, including through a file upload. This will allow Parties to align the sites not inactive within the BM Unit with those MSID sites actually providing the delivery of the Balancing Service</p>	<b>Must Have</b>
P376-BR-30	<p><b>Parties can change MSID Pair status or AMSID Pairs</b></p> <p>For the avoidance of doubt a Virtual Lead Party and Asset Metering Virtual Lead Party can make an Inactive MSID Pair (VLP) or AMSID Pairs (AMVLP), active at any time, and change its status from a Baselined MSID Pair or AMSID Pairs to a MSID Pair or AMSID Pairs (subject to BR4.8).</p>	<b>Must Have</b>
P376-BR-21	<p><b>Register an MSID Pair or AMSID Pair as Inactive in a baselined BMU</b></p> <p>A VLP or AMVLP only can register with SVAA for a MSID Pair or AMSID Pair to be made inactive via Elexon Kinnect, by setting the MSID Pair or AMSID Pair Baselining indicator to 'I' and detailing a start date and optional end date. The MSID Pair or AMSID Pair does not need to be new MSID Pair or AMSID Pair. For the avoidance of doubt any MSID Pair or AMSID Pair within a Baselined BMU can be made inactive. It is not restricted to Baselined MSID Pairs or AMSID Pairs. This process will be reflected in BSCP602.</p>	<b>Must Have</b>
P376-BR-22	<p><b>Handling calculations for Inactive MSID Pairs or AMSID Pairs within a baselined BMU</b></p>	<b>Must Have</b>



	<p>SVAA will exclude Inactive MSID Pairs or AMSID Pair from Settlement of the Secondary BM Unit to which they are assigned, by:</p> <ul style="list-style-type: none"> <li>· Not calculating a value of Secondary BM Unit Metered Consumption (VBMmCi2aNLKji) for the MSIDs or AMSIDs in the MSID Pair or AMSID Pair. As a result these MSIDs or AMSIDs will not be included in the Secondary BM Unit Demand Volume (VBMUDVi2j);</li> <li>· Not including a Delivered Volume for the MSID Pair or AMSID Pair in Settlement. For Baselined MSID Pairs or AMSID Pairs this will be achieved by not calculating a Delivered Volume; for non-Baselined MSID Pairs or AMSID Pairs by not accepting a Delivered Volume from the Virtual Lead Party.</li> <li>· Not including the MSID Pair or AMSID Pair in the Baselined Expected Volume (BEVij). This could be achieved by not calculating the MSID or AMSID Baseline Value (MBVKiLj), or by not including it in the Baselined Expected Volume.</li> </ul> <p>For Submitted Expected Volumes the VLP will need to remove the Inactive MSID or AMSID from their own calculations if the MSID or AMSID is not a Baselined MSID Pair or AMSID Pair.</p>	
P376-BR-23	<p><b>SVAA continues to collect actual metered volumes for Inactive MSID Pairs or AMSID Pairs</b></p> <p>SVAA will continue to collect actual metered volumes from the HHDA, or HHDC, so as to allow a Baseline Expected Volume to be calculated immediately when a site is made active by the Party.</p>	<b>Must Have</b>
P376-BR-24	<p><b>Rule: Inactive MSID Pairs or AMSID Pairs cannot have Delivered Volumes assigned</b></p> <p>Inactive MSID Pairs or AMSID Pairs cannot have Delivered Volumes assigned to them. SVAA will check that this happens (BSCP602), Where Delivered Volumes are received against inactive MSID Pairs or AMSID Pairs, they will not be used in any calculations.</p>	<b>Must Have</b>
P376-BR-25	<p><b>Rule: MSID Pairs within an ABMU cannot be made Inactive</b></p> <p>The MSID Pairs within an ABMU cannot be made inactive as metered volumes are used for Imbalance calculations for all Settlement periods. Only MSID Pairs in an SMBU (i.e. for Balancing services) can be made Inactive.</p>	<b>Must Have</b>
P376-BR-26	<p><b>Notify Parties when MSID or AMSID Baselined Values can be created</b></p> <p>The Party responsible for the BMU will be informed when an MSID or AMSID Baseline Value can be created for the Inactive MSID Pair or AMSID Pair. It is up to the Party to register with SVAA if they wish to change the status of an MSID Pair or AMSID Pair. This will not be an automatic process</p>	<b>Must Have</b>
P376-BR-27	<p><b>Parties can see status of all MSID Pairs or AMSID Pairs within its Baselined BMU</b></p> <p>A Party will be able to see the status for all MSID Pairs or AMSID Pairs within its Baselined BM Unit.</p>	<b>Must Have</b>
P376-BR-28	<p><b>Parties can change Inactive status of MSID Pairs or AMSID Pair</b></p> <p>Virtual Lead Parties and Asset Metering Virtual Lead Parties can change the status of a MSID Pair (VLPs) or AMSID Pair (AMVLPs) to and from inactive at any time, by providing an updated value of the MSID Pair or AMSID Pair Baselining indicator and associated effective date. The indicator cannot be changed retrospectively, i.e. settlement of the Balancing Service will be based on the status of the MSID Pair or AMSID Pair as at midnight (24:00) on the previous Settlement Day.</p>	<b>Must Have</b>

#### *Inactive MSID/AMSID Pairs*

When an MSID/AMSID Pair is registered within a BM Unit then metered volumes will automatically start contributing towards the Period Metered Volumes. For this reason the Party must take into account this MSID/AMSID Pair in the Submitted Expected Volume or register that Pair for an MSID/AMSID Baseline Value. However there may be insufficient demand data to calculate an MSID/AMSID Baseline Value and the Party may not be confident in their own ability to be able to forecast expected usage (within the Submitted Expected Volume). Inaccurate expected volumes when compared to actual metered data may create Non Delivery Charges. The Party can register a MSID/AMSID pair to be inactive.

A Party can make an MSID/AMSID Pair inactive. This BR applies only to MSID Pairs registered in an SMBU. (E.g. not an ABMU) and it is relevant for Baselined BMU only.

## Event Days

Ref	Requirement	Priority
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P376-BR-31	<b>Parties can notify SVAA of 'event days'</b> Suppliers, VLPs and AMVLPs will be responsible for notifying SVAA of 'event days' via Elexon Kinnect Customer Solution, when the behaviour of a site is not deemed normal. This will be done at MSID pair or AMSID Pair level.	<b>Must Have</b>
P376-BR-32	<b>Predefined options for 'event days'</b> <ul style="list-style-type: none"> <li>When submitting an event day, the Party will be required to choose an option from a predefined list of event day types. To begin with this list will be restricted to two options.</li> <li>Balancing Service</li> <li>Other</li> </ul>	<b>Must Have</b>
P376-BR-33	<b>Rule: notification of 'event days'</b> A Party must notify SVAA of 'event days' or a change to Event days that are not more than 30 days in the past, after which the Event days are locked.	<b>Must Have</b>
P376-BR-34	<b>Rule: notification of 'event days'</b> A Party can submit an Event day before the event.	<b>Must Have</b>
P376-BR-35	<b>Rule: notification of 'event days'</b> Where an event day is created, data relating to all Settlement Periods on that day will be considered as associated with an event day. This may affect how a baseline methodology treats such data.	<b>Must Have</b>
P376-BR-36	<b>SVAA can cancel Event Days</b> SVAA can cancel an Event Day at any time (i.e. not just within 30 days) if it is found it was created in error and the Party will be notified.	<b>Must Have</b>

#### *Event Days for baselining methodology*

The Baseline Methodology creates a baseline based on normal usage and predicts what the MSID/AMSID Pair should be doing. Therefore, it needs to discount days where the site is doing something not normal, such as providing a Balancing Service. As providing a Balancing Service can affect the site outside of the Settlement Period providing the Balancing Service the whole day is discounted from the calculation of the baseline.

#### Creating Event Days

Where an MSID/AMSID Pair has delivered a Balancing Service (or exhibited abnormal behaviour), that MSID/AMSID Pair may have an 'event day' created. Data associated with event days will not be used in baseline calculations where non event day data is available.

## Baselined Methodologies

Ref	Requirement	Priority
P376-BR-37	<b>Parties can select approved Baselining Methodologies</b> A Party must be able to select a Baselining Methodology from an approved list of baseline methodologies at the time of registering the site for Baselining (and update it subsequently) using the Elexon Kinnect Participant Management Platform. (Initially there will only be one approved Baseline Methodology, but the BSC Panel may approve additional ones over time).  When making their choice of Baselining Methodology, Parties will make the choice:: <ul style="list-style-type: none"> <li>per MSID Pair where Asset Metering is not being used (i.e. MSID Pair Indicator = 'T');</li> <li>per AMSID Pair where Asset Metering is being used (i.e. MSID Pair Indicator = 'A'); and</li> <li>a single Baselining Methodology for all MSID Pairs and AMSID Pairs at a given site where Asset Differencing is being used (i.e. MSID Pair Indicator = 'D')</li> </ul>	<b>Must Have</b>
P376-BR-38	<b>Parties can change approved Baselining Methodologies</b> A Party must be able to change the selected Baselining Methodology for a site under the same timescales as for registering for using the baselining solution in BR1	<b>Must Have</b>
P376-BR-39	<b>Analysis of approved methodologies</b> To support any change to the approved methodologies, when requested on an ad hoc basis ELEXON will produce analysis demonstrating the accuracy of requested baseline methodologies for consideration by the Panel.	<b>Must Have</b>

P376-BR-40	<b>Regular review of methodologies</b> The Annual report into the ongoing suitability of baseline methodologies will be able to make recommendations to amend or remove any approved baseline methodology. SVAA will produce analysis to inform the annual report on baseline suitability. Where recommendations are made, ELEXON will raise a Change Proposal to carry forward these recommendations.	<b>Must Have</b>
P376-BR-41	<b>Panel can determine suitability of baselined methodologies</b> The BSC Panel will consider the annual report into the ongoing suitability of baseline methodologies and determine whether changes are required.	<b>Must Have</b>

#### Approved baselining methodologies

MSID Pairs and AMSID Pairs that are registered for MSID / AMSID Baseline Values will have their Expected Volumes calculated using the Party's chosen approved methodology. It will be the Party's responsibility to choose which Approved Methodology it wishes to use for each MSID Pair. Approved Methodologies can be added/removed through the CP process.

Allowing different baseline methodologies to be used future proofs for new technologies.

#### Example baseline methodology

The following is an example of a baseline methodology that could be used to calculate Settlement Expected Volume. The approved Baseline Methodologies will be contained in a separate Code Subsidiary Document. This methodology would only be applicable to normal week days. A different methodology would be better suited to weekend days.

***Note that this example methodology was developed during the P376 Assessment Procedure to illustrate the type of methodology we had in mind. It is now of historical interest only, as we have a Baselining Methodology Document that defines the proposed Baselining Methodology in much more detail (including details of the calculation for Non Working Days).***

10 of 10:

The methodology will consider a data pool from the previous 60 days. As new data is added each day, the oldest data will fall outside the pool range.

From the data pool the methodology will select the 10 most recent acceptable days according to the selection criteria.

The methodology will only select data that is from a working day (i.e. non weekend and non public holiday).

The methodology will only select data from days that are not considered 'event days'.

Where more than 5, but less than 10 acceptable days can be found, the methodology will consider event days with the greatest Metered volume to make the 10 required days.

The methodology will average the selected days at Settlement Period level to calculate the baseline.

The calculated values will be adjusted using an In Day Adjustment calculated using Metered data from four to one hours before a dispatch. Metered data for each Settlement Period in this window will be compared with predicted values using the above process. The six differences will be averaged to provide an In Day Adjustment.

The baseline calculated during the dispatch window will have this In Day Adjustment applied to determine the final MSID Baseline Value for the MSID Pair in a particular Settlement Period.

## Assurance & Analysis of Baselining Solution

Ref	Requirement	Priority
P376-BR-42	<b>Assure Baselining Methodologies</b> We will create an exception report which will report on and identify any anomalies as described in the method outlined below. The output of this report can then be included in any other Elexon reporting as required.  To confirm that the values created by baseline methodologies are truly representative of the energy flow at a boundary meter would be in 'normal' circumstances.	<b>Must Have</b>

	<ul style="list-style-type: none"> <li>BSCCo will report on the accuracy of baselined values. It will compare the Baselined Value created in every Settlement Period where a Balancing Service hasn't been provided (i.e. the site has operated under normal circumstances) and compare this to the actual Metered Volume for the site. Where the baseline calculation is working effectively, we would expect these two values to be broadly the same; we are proposing <math>\pm 10\%</math>.</li> <li>Six months after go live: Reported to the BSC Panel for a post implementation update. <ul style="list-style-type: none"> <li>Paper and update to Panel with decision on review of methodology if required and the reporting frequency plus any other action deemed appropriate at the time. If this first report highlights large errors then quarterly can be considered.</li> </ul> </li> <li>Enduring solution: Reported to the BSC Panel every six months, [BP1] can switch to quarterly at any time to mitigate errors if this area is deemed to be a higher risk than initially anticipated. <ul style="list-style-type: none"> <li>Paper and update to Panel with decision on review of methodology if required and the reporting frequency plus any other actioned deemed appropriate at the time.</li> </ul> </li> </ul> <p>If an anomaly or issue is detected, the Performance Assurance Framework (PAF) would not be used to address the concerns. This is because the activity that is being assured is not performed by a Performance Assurance Party (PAP). Instead this issue will be reported to the BSC Panel as described above.</p> <hr/> <p>[BP1] Does the Panel want an update even if nothing wrong? So only reporting by exception but still run the report every 6mths?</p>	
P376-BR-70	<p><b>Data for analysis of Baselining Methodologies</b></p> <p>SVAA must make the data items available for Elexon to perform analysis of baselined methodologies. This means that for each Settlement Period the following data items are provided/made available at minimum:</p> <ul style="list-style-type: none"> <li>Settlement Period</li> <li>Settlement Day</li> <li>BSC Party</li> <li>Market Role</li> <li>BM Unit were indicator = B</li> <li>BM Unit Type</li> <li>Baselined Volume for MSID Pair where SEV=False</li> <li>Baselined Volume for AMSID Pair where SEV=False</li> <li>Metered Volume for MSID Pair where Balancing Services have not been provided</li> <li>Metered Volume for AMSID Pair where Balancing Services have not been provided</li> </ul>	<b>Must Have</b>
P376-BR-44	<p><b>Assure Settlement Expected Volumes</b></p> <p>We will create an exception report which will report on and identify any anomalies as described below. The output of these reports can then be included in any other Elexon reporting as required.</p> <ul style="list-style-type: none"> <li>To confirm that the additional value submitted by parties as their Submitted Expected Value is truly reflective of what the energy flows at the boundary meter for these sites would be under 'normal circumstances.</li> </ul>	<b>Must Have</b>

	<ul style="list-style-type: none"> <li>FPNs submitted under the Grid Code are required by the Grid Code to be accurate reflections of what the Party expects to happen and created in line with 'good industry practice'. Since Submitted Expected Volume submissions will not fall under the remit of the Grid Code, we need to define our own requirements and assurance. As the Parties submission will be done at BMU level (rather than MSID), we will also need to use the baseline values in order to draw an appropriate comparison. We are proposing that the <b>BMU Settlement</b> Expected Volume (made of the Baseline Volume and the Submitted Volume) should be within 20% of the actual Metered Volume in all Settlement Periods that are not flagged as event days.</li> <li>Six months after go live: Reported to the BSC Panel and Performance Assurance Board (PAB) for a post implementation update. <ul style="list-style-type: none"> <li>A decision will also be made on the results of this first report for the suitability of the enduring solution reporting frequency (quarterly or six monthly).</li> </ul> </li> <li>Enduring solution: Report will be run every six months, but will only be presented to the PAB should an anomaly or error be discovered. Can switch to quarterly at any time to mitigate errors if this area is deemed to be a higher risk than initially anticipated.</li> </ul> <p>If an anomaly or issue is detected, because this process is performed by a Performance Assurance Party (PAP), the Performance Assurance Framework (PAF) can be used to address these concerns.</p> <p>This data can feed into the annual assessment of the associated Settlement Risk. The related risk is Settlement Risk 25: The risk that Balancing Services provided by Virtual Lead Parties and Suppliers allow error to enter Settlement, such that the energy volumes required for Settlement are incorrect or missing.</p> <p>This process takes place between the December and March before the start of the respective Performance Assurance Operating Period (PAOP). The management of this process and the associated risk will be considered along with the prioritisation of any other focus risks that has already been assessed for inclusion in the Risk Operating Plan (ROP). Should Elexon and the Performance Assurance Board (PAB) deem that this should be prioritised over other risks, a Risk Management Determination for the deployment of any appropriate Performance Assurance Techniques (PATs) will be made.</p> <p>If an anomaly or issue is detected mid-year, a mid-year submission can be presented to the PAB for approval for this work to be carried out. The same prioritisation activity and technique allocation will be performed to evaluate if this work takes priority over the other focus risks.</p>	
P376-BR-71	<p><b>Data for analysis of Submitted Expected Volumes</b></p> <p>SVAA must make the data items available for Elexon to perform analysis of baselined methodologies. This means that for each Settlement Period the following data items are provided/made available at minimum:</p> <ul style="list-style-type: none"> <li>Settlement Period</li> <li>Settlement Day</li> <li>BSC Party</li> <li>Market Role</li> <li>BM Unit where indicator is B</li> <li>BM Unit Type</li> <li>Settlement Expected Volume</li> <li>Metered Volume (Allocated Demand Volume) for BM Unit where there were no Event Days</li> </ul>	<b>Must Have</b>
P376-BR-43	<p><b>Assure Event Days</b></p>	<b>Must Have</b>

	<p>P376 is planned to go live from February 2023. In December 2022, Elexon will perform an assessment of the associated Settlement Risk for the 2023/2024 Performance Assurance Operating Period (PAOP) Risk Evaluation Register (RER). The use of the Performance Assurance Framework (PAF) for Modification post-implementation specific assurance activities will be considered along with the prioritisation of any other focus risks that could be an area for work within the Risk Operating Plan (ROP) for this PAOP.</p> <p>This consideration will include a post-implementation Technical Assurance of Performance Assurance Parties (TAPAP) check to assess whether Event days submitted were being submitted in line with the BSC (i.e. they were genuine abnormal days). Should Elexon and the Performance Assurance Board (PAB) deem that this should be prioritised over other risks, a Risk Management Determination for the deployment of the TAPAP technique will be made for a check to take place in late 2023. After the assessment of the associated risk a more formal annual auditing requirement may be considered as part of the post check recommendations.</p>	
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#### Assurance

The P376 solution requires assurance for the following:

- Baselining Methodologies
- Submitted Expected Volumes
- Event Days

## Calculate Baselined Values & Delivered Volumes

Ref	Requirement	Priority
P376-BR-54	<p><b>SAA uses Settlement Expected Volume in place of FPN</b></p> <p>For a Baselined BM Unit, SAA will use the calculated Settlement Expected Volume in place of the FPN currently used in the Settlement processes. If for a particular Settlement period SVAA has not being able to calculate a Settlement Expected Volume (i.e. Party has not provided a default Submitted Expected Volume) then SAA will use the FPN.</p>	<b>Must Have</b>
P376-BR-50	<p><b>SVAA calculates Delivered Vol for Baselined BMUs</b></p> <p>For any Settlement Period in which a baselined BM Unit has a Bid Offer Acceptance or Replacement Reserve Activation, SVAA will calculate the MSID Pair Delivered Volume for all MSID Pairs with a 'baseline' status (excluding Inactive MSID Pairs) in that BM Unit. The MSID Pair Delivered Volume will be calculated as the metered volume minus the baseline volume (aggregated over the Import and Export MSIDs, with Import treated as negative as per the existing sign conventions for Delivered Volumes).</p> <p>The specific calculation depends upon the MSID Pair Indicator:</p> <ul style="list-style-type: none"> <li>• For non-P375 MSID Pairs (Indicator = 'T'), SVAA will calculate a Delivered Volume for the MSID Pair from the MSID Pair Baseline Value (see Annex S-2 3.11.2)</li> <li>• For Asset Metering (Indicator = 'A'), SVAA will calculate a Delivered Volume for the AMSID Pair from the AMSID Pair Baseline Value; and then allocate it between the Associated MSID Pairs using their Delivered Volumes (see Annex S-2 3.11.3-4)</li> <li>• For Asset Differencing (Indicator = 'D'), SVAA will calculate a Delivered Volume from the Net Differencing Baseline Value; and then allocate it between the Associated MSID Pairs using their Delivered Volumes (see Annex S-2 3.11.5-6)</li> </ul> <p>For the avoidance of doubt, the Baseline Expected Values used to calculate Delivered Volumes are the raw values, prior to application of Line Loss Factors (because Delivered Volumes will subsequently have Line Loss Factors applied, by existing P344 SVAA functionality introduced for Modification P344).</p> <p>VLPs will not be required to submit MSID Pair Delivered Volumes for MSID Pairs with a 'baseline' status (and any such MSID Pair Delivered Volume that is submitted will not be used in Settlement).</p>	<b>Must Have</b>



P376-BR-51	<p><b>SVAA calculates Delivered Vol as per TERRE</b></p> <p>For the avoidance of doubt, Delivered Volumes will continue to be processed in line with the existing arrangements introduced by Modification P344:</p> <ul style="list-style-type: none"> <li>SVAA will allocate the MSID Pair Delivered Volume to the Import MSID and Export MSID, to create the Metering System Delivered Volume (QVMDKj)</li> <li>SVAA will allocate the QVMDKj values to a Secondary BM Unit and Supplier BM Unit, to create the Secondary BM Unit Delivered Volume (QVBMDi2NLKji)</li> <li>SVAA will apply Line Loss Factors and GSP Group Correction Factors to the QVBMDi2NLKji values and aggregate to BM Unit level to create the Secondary BM Unit Supplier Delivered Volume (VBMUSDVi2ji)</li> <li>SVAA will send the VBMUSDVi2ji values to the SAA, who will (if necessary) adjust them pro rata, so that the total Delivered Volumes for the Secondary BM Unit match that calculated by SAA (Period Expected Volumes less Actual Metered Volumes)</li> </ul> <p>All of these existing processes are unchanged, except that they now apply to both:</p> <ul style="list-style-type: none"> <li>Delivered Volumes calculated by SVAA for Baselined MSID Pairs (BR8.5A); and</li> <li>Delivered Volumes submitted by VLPs (using the existing P344 process) for MSID Pairs not registered as Baselined MSID Pairs.</li> </ul>	<b>Must Have</b>
P376-BR-5	<p><b>Baselined Expected Volumes</b></p> <p>Baseline Volumes will be created using the selected Baseline Methodology, as follows:</p> <ul style="list-style-type: none"> <li>The MSID Baseline Value for each MSID Pair;</li> <li>The AMSID Baseline Value for each AMSID Pair; and</li> <li>The Net Differencing Baseline Value for each set of MSID Pairs and AMSID Pairs comprising an Asset Differencing arrangement.</li> </ul> <p>These Baseline Values will be summed to BMU level and will be called Baselined Expected Volumes.</p>	<b>Must Have</b>
P376-BR-49	<p><b>Calculate the Baseline Expected Volume by BMU and Settlement Period</b></p> <p>SVAA will aggregate calculated MSID Baseline Values for MSID Pairs with a 'baseline' status to BM Unit level to calculate the Baseline Expected Volume for every Settlement Period. SVAA will require actual metered data to undertake this task so Baselined Values will not be available until after the relevant metering data is received from HHDC's/HHDA's and processed in line with the Settlement calendar.</p>	<b>Must Have</b>
P376-BR-46	<p><b>SVAA will calculate Baseline Values then apply losses</b></p> <p>Using the appropriate Baselining Methodology selected by the Lead Party, SVAA will calculate Baseline Values, and then apply losses. The Baseline Values to be calculated are:</p> <ul style="list-style-type: none"> <li>MSID Baseline Values (<math>MBV_{KiLj}</math>) for MSID Pairs without Asset Metering (MSID Pair Indicator = 'T')</li> <li>AMSID Baseline Values (<math>AMB_{KiLj}</math>) for AMSID Pairs used for Asset Metering (MSID Pair Indicator = 'A')</li> <li>Net Differencing Baseline Value (<math>NDBV_{ij}</math>)</li> </ul> <p>The Baseline Values calculated by the Baseline Methodology will be based on disaggregated Metered Volumes received from the HHDA's and/or HHDCs, and therefore will not have been adjusted for losses on the Distribution System. To create alignment with Submitted Expected Volumes as described in BR2.2, Baselined MSID volumes will need to be loss adjusted, prior to calculation of the Baseline Expected Volume (BR8.5). The adjustment of Baselined MSID Volumes will mirror the same process (and loss figures) used by SVAA to currently adjust disaggregated Metered Volumes received from the HHDA's introduced as part of P344, and is described in the P376 legal text as follows:</p> $MBL_{KiLj} = (LLF_{Lj} - 1) * MBV_{KiLj}$ $AMBL_{KiLj} = (LLF_{Lj} - 1) * AMB_{KiLj}$ $BEV_{ij} = \sum_K (MBV_{KiLj} + MBL_{KiLj}) + \sum_K^{NonDiff} (AMB_{KiLj} + AMBL_{KiLj}) - \sum_K^{Diff} (AMB_{KiLj} + AMBL_{KiLj})$	<b>Must Have</b>
P376-BR-45	<p><b>Continue MSID/AMSID Baseline calculation</b></p> <p>SVAA will continuously create MSID Baseline Values, AMSID Baseline Values and Net Differencing Baseline Values for all Settlement Periods and store these expected volumes for a certain amount of time to allow for potential future assurance. The period of storage will be in line with current metering data and the disputes process.</p>	<b>Must Have</b>



P376-BR-47	<b>Audit trail for use of new data and 'event days'</b> The MSID Baseline Value, AMSID Baseline Value and Net Differencing Baseline Value can alter as new demand data, event days are received by SVAA. An Audit trail will be needed as these values will be used in Settlement and potential future assurance	<b>Must Have</b>
P376-BR-52	<b>Submit Settlement Expected Volume by Gate Closure</b> Parties will submit their Submitted Expected Volume to cover all MSID Pairs not included in the Baseline Expected Volume before Gate Closure. This will be at BM Unit level per Settlement period.	<b>Must Have</b>
P376-BR-53	<b>SVAA determines calculated Settlement Expected Volume</b> SVAA will add the Baseline Expected Volume and the Submitted Expected Volume to determine the Settlement Expected Volume per BM Unit per Settlement Period and then send to SAA	<b>Must Have</b>
P376-BR-48	<b>Provide calculated Settlement Expected Volumes per BMU to SAA</b> For all Baselined BM Units, SVAA will provide calculated Settlement Expected Volumes per BM Unit per Settlement Period, to the SAA. SVAA will inform SAA if no Settlement Expected Volumes exists (revert to Status Quo).	<b>Must Have</b>

#### *Calculate Baselined Values & Delivered Volumes*

The SVAA will calculate MSID / AMSID Baseline Values for all MSID Pairs / AMSID Pairs that are in a Baselined BM Unit and registered for a baseline methodology, and aggregate to BMU level to calculate the 'Baseline Expected Volume'. This will then be added to the Submitted Expected Volume to create the Settlement Expected Volume. Where Baseline Volumes are calculated for a MSIDs and AMSIDs, SVAA will also calculate Delivered Volumes for those MSIDs / AMSIDs.

SVAA will create a Settlement Expected Volume which will then be subsequently used by SAA in the Settlement of a Balancing Service

## Calculate Non Delivery

Ref	Requirement	Priority
P376-BR-55	<b>SVAA calculates Settlement Expected Volume</b> SVAA will calculate Settlement Expected Volumes if the BM Unit has been registered as a Baselined BM Unit.	<b>Must Have</b>
P376-BR-56	<b>Rule: use of Settlement Expected Volume from SVAA</b> If , and the BM Unit is a Baselined BM Unit, then SAA will use Settlement Expected Volumes received from SVAA.	<b>Must Have</b>
P376-BR-57	<b>Rule: use of FPN when there is no calculated Settlement Expected Volume</b> For BM Units that are not Baselined BM Units, or for which SVAA has not provided a Settlement Expected Volume, the Period Expected Metered Volume will be determined as follows: $QME_{ij} = FPN_{ij} + QBS_{ij}$	<b>Must Have</b>
P376-BR-58	<b>Calculate Period Expected Metered Volume</b> For Baselined BM Units, SAA will replace the FPN received from the NETSO with the Settlement Expected Volumes calculated by SVAA and the Period Expected Metered Volume will be determined as follows: $QME_{ij} = SEV_{ij} + QBS_{ij}$	<b>Must Have</b>
P376-BR-59	<b>Calculate Period Expected Metered Volume (null submitted value)</b> For baselined BM Units that have where submitted FPN value of NULL (see BR2.5) then Period Expected Metered Volume will be determined as follows: $QME_{ij} = FPN_{ij} + QBS_{ij}$	<b>Must Have</b>
P376-BR-72	<b>Report Settlement Expected Volume in SAA-I014 Settlement Report</b> SAA will include the Settlement Expected Volume (SEV <sub>ij</sub> ) as a new data item in sub-flows 1, 2 and 4 of the SAA-I014 Settlement Report	<b>Must Have</b>

#### *Calculate Non Delivery*

When calculating Non-Delivery Charges, SAA will replace the FPN received from the NETSO with the Settlement FPN calculated by SVAA using metered data. This is for Baselined BM Units only.

SAA will calculate a Period Expected Metered Volume for each Baselined BM Unit.

## Change of MSID/AMSID Pair Ownership

Ref	Requirement	Priority
P376-BR-60	<b>Change of MSID/AMSID Pair registration and default status</b> The status of a MSID/AMSID Pair previously registered when assigned to a Baselined BMU following change of Party will be the default setting 'include in submitted expected volume'. If the MSID/AMSID Pair had inactive or baselined as the previous status then this will revert to 'include in submitted expected volumes' and the Party notified.	Must Have
P376-BR-61	<b>New Party can change status of MSID/AMSID Pair</b> The new Party can change the status of the MSID/AMSID Pair at any time after the MSID/AMSID Pair has been assigned to the BMU	Must Have
P376-BR-62	<b>New Party responsibility to ensure correct reg detail</b> It will be the responsibility of the Party to ensure that the registration details held with regards baselining are correct. Registration details can be amended up until midnight (24:00) on the previous Settlement Day.	Must Have
P376-BR-63	<b>Rule: Parties must register BMU for baselining if re-allocating MSID Pairs / AMSID Pairs</b> Allocating a MSID/AMSID Pair previously registered for Baselining will not automatically turn the BMU into a Baselined BMU. The Party must register this requirement. See BR1.1	Must Have
P376-BR-64	<b>Rule: Event day submission</b> The new Party can submit Event Days straight away including for the previous 30 days and not just for days when they are the registered Party.	Must Have

### Change of MSID/AMSID Ownership

MSID/AMSID Pairs can swap between Parties. This is an existing process introduced by P344/P375. An MSID/AMSID Pair can be registered as Baselining or Inactive by one Party, but when a change of responsible Party occurs, what status should the MSID/AMSID Pair have in the new BMU?

### Change of Party

Parties can request responsibility for a MSID/AMSID pair by allocating the MSID to their BMU. If the MSID/AMSID Pair was previously registered for Baselining by the Previous Party, the status of the MSID/AMSID Pair will revert to a default status once transferred into the new Parties BMU

## Reporting

Ref	Requirement	Priority
P376-BR-73	<b>Report Baseline Values to Lead Party</b> SVAA will report Baseline Values to Lead Parties on a new report, produced by SVAA from each Volume Allocation Run. The Baseline Values to be reported are: <ul style="list-style-type: none"> <li>MSID Baseline Values (<math>MBV_{kiLj}</math>) for MSID Pairs without Asset Metering (MSID Pair Indicator = 'T')</li> <li>AMSID Baseline Values (<math>AMB_{kiLj}</math>) for AMSID Pairs used for Asset Metering (MSID Pair Indicator = 'A')</li> <li>Net Differencing Baseline Value (<math>NDBV_{ij}</math>)</li> </ul> This report will also identify Baselined and Inactive MSID Pairs (and AMSID Pairs) for which there was insufficient data to determine Baseline Values.	Must Have
P376-BR-68	<b>SAA-I014: include Settlement Expected Volume</b> The Settlement Expected Volume data item must be included in the SAA-I014.  Specific subflows to be agreed, but it must be included in subflows 1, 2 and 4.	Must Have
P376-BR-69	<b>Baselined Volumes for Parties</b> The solution (DCP) must report for each Party their Baselined Volumes and Submitted Expected Volumes. Details to be worked through with CGI.	Must Have

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## Non Functional Requirements

Ref	Requirement	Priority
P376-BR-74	<b>Maintain existing performance levels</b> The solution must ensure that there is no degradation in performance as a result of implementation.	<b>Must Have</b>

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