

# Balancing Reserve Guidance Document

Version 2 – November 2024

# Version History

Version	Added Information	Date Published
V1	N/A	February 2024
V2	<ul style="list-style-type: none"><li>• NESO rebranding.</li><li>• Minor typographical corrections.</li><li>• Updates to the splitting matrix for QR and SR service design decisions.</li><li>• Clarification on Operational Metering expectations for BMUs providing BR.</li><li>• Correction to the performance monitoring calculation for utilisation to correctly apply response energy for stacked response and reserve providers.</li><li>• Inclusion of the Incremental Volume Cost (IVC) methodology and definitions of 'Commercial Unavailability' and 'Technical Unavailability'.</li><li>• New ramp rate check example to include our method for testing time to full delivery on units with multiple ramp rates and elbow points.</li></ul>	November 2024

**POLICY CHANGE: We have changed our interpretation of "Commercial Unavailability" to include availability failures within BR performance monitoring due to BOAs in previous uncontracted windows. See detailed example 1b.**

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# Balancing Reserve Overview

# Balancing Reserve(BR)

## The information in this guidance is tailored to support Balancing Reserve providers.

This document complements the BR contractual documents: the Service Terms, Procurement Rules and Balancing Services Glossary as were approved by Ofgem on 08 February 2024. In the event of any conflict or inconsistency between this document and the contractual documents, the latter shall prevail.

**Balancing Reserve** is the first of our new suite of Reserve products. The BR market will allow us to procure access to upwards flexibility (headroom) and downwards flexibility (footroom) through two new balancing services: Positive Balancing Reserve and Negative Balancing Reserve. This capacity can then be manually dispatched by NESO control engineers in real time.

Please note this document does not include information about legacy reserve services, Short Term Operating Reserve (STOR) or Optional Fast Reserve which will ultimately

be replaced by new reserve services and phased out. Information about STOR and Optional Fast Reserve can be found on the [NESO website](#).

**Balancing Reserve** can be dispatched in both pre and post fault system operation scenarios. Contracted BR units can be dispatched to correct persistent energy imbalances such as when wind output is consistently above or below our forecasts. BR units could also be dispatched to replace energy from constrained generators or to help replace exhausted response or other reserve services following a fault on the network which has created a large energy imbalance.

We ran an Article 18 EBGL consultation for Balancing Reserve which concluded on 26 October 2023. After reviewing consultation responses and providing our own responses we submitted the consultation pack to Ofgem on 08 December 2023.

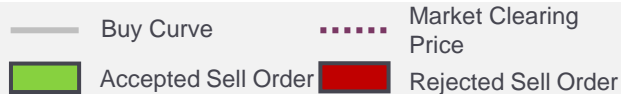
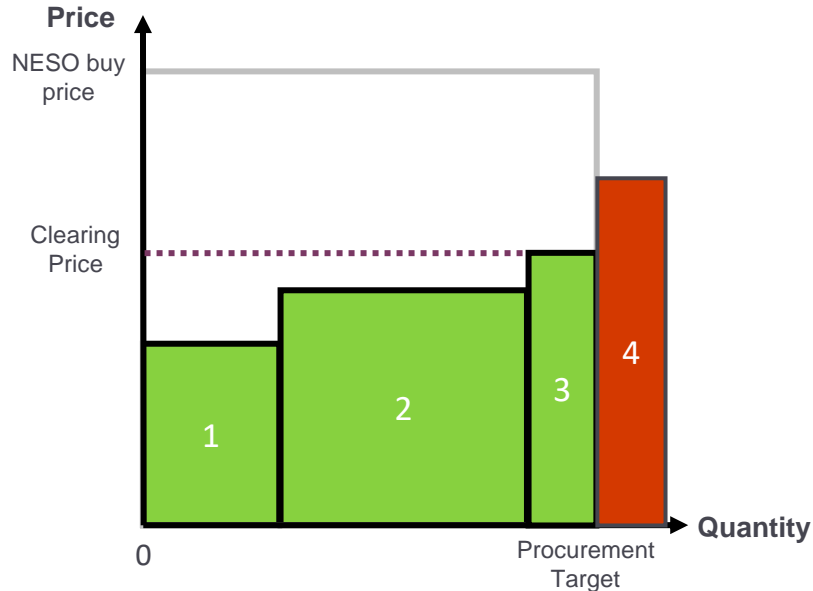
The documents include [Service Terms](#),

which describe the technical specification for the provision of Balancing Reserve, and [Procurement Rules](#), which describe the eligibility rules for participation in the services and explain how the BR market will function.

This guidance is published to support the onboarding and continued participation in the BR service by service providers. It is designed to give additional information on the rules and recommendations regarding the delivery of these services, along with relevant use cases. This document will be updated periodically.

Approved legal documents	Technical requirements	How to participate	Document archive	Existing Providers	Events
Approved legal documents >					
Approved legal documents					
Name					Published ^
BR Service Terms					28 Mar 2024
Balancing Reserve Mapping Document					19 Feb 2024
Balancing Reserve Approved Procurement Rules					19 Feb 2024

# BR Availability Payments



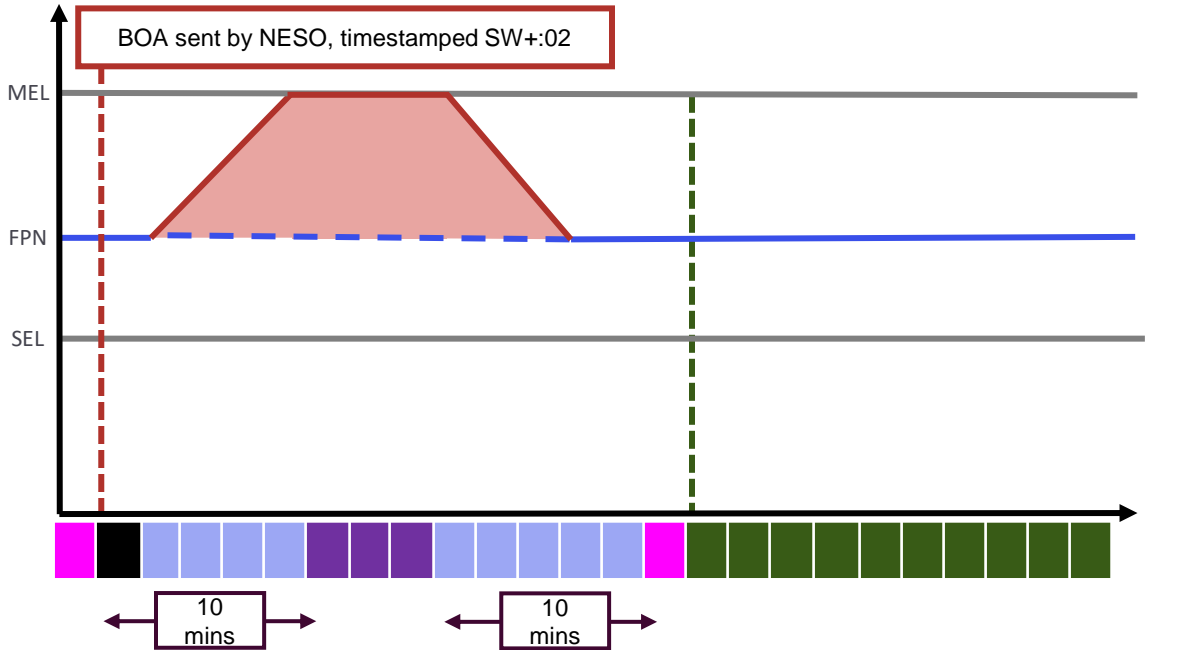
## Availability Payments

- The day ahead BR auction is Pay-as-Clear and uses EAC infrastructure.
- Forty-eight 30-minute service windows for both Positive Balancing Reserve and Negative Balancing Reserve.
- Market participants submit their availability prices and BR offered volumes before 08:15 Gate Closure time.
- The ESO submits a buy order which represents the willingness to pay for a given volume of firm BR volume.
- An auction is conducted by auction partners NSIDE using the same auction algorithm as for EAC but via an independent auction for Balancing Reserve run in the morning.
- A cohort of accepted sell orders and buy orders is determined to maximise market welfare.
- A clearing price is determined to maximise market welfare whilst minimising total cost of procurement.

**Availability payments are made by NESO's settlements team to successful market participants.**

Detailed information about the day ahead auction can be found in this [market explainer document](#).

# BR Utilisation Payments



Final Physical Notification

Notice to Offer (NTO)

Offer volume ( in MWh)

Maximum Export Limit/  
Stable Export Limit

Delivering against BOA

BOA sent by NESO

Available to be dispatched,  
contracted through DA auction

Maximum ramping time

Next service window

## Utilisation Payments

- Utilisation of BR is through bids and offers in the BM.
- Holding a BR contract is not a guarantee of dispatch – in some periods reserve will not be required, or the unit may not adequately meet the system need (e.g. we may not be able to dispatch units located behind constraints).
- Submitted dynamic parameters, MEL, SEL and FPN should reflect contract terms.

**Payments for utilisation are made from Exelon via the usual BOA settlements processes.**

Detailed information about trading charges here

[Trading Charges - Exelon BSC](#)

# Service Specification



# Overview of Technical Parameters

Design Element	Proposal	References
<b>Direction</b>	Positive Balancing Reserve (Upwards flexibility) and Negative Balancing Reserve (Downwards flexibility).	
<b>Minimum Contract Size</b>	1 MW	
<b>Provider Eligibility</b>	BM Units with a back up means of dispatch (control or system telephony) during contracted windows	
<b>Time to full delivery</b>	10 minutes (including Notice to Offer (NTO) / Notice to Bid (NTB))	BR Service Terms, Schedule 1
<b>Energy Requirement</b>	The unit must be able to deliver the full contracted capacity per Service Window	
<b>Operational Metering</b>	As per Grid Code, 1Hz is the standard required for BM participation. If units are accepted for BM participation with less granular operational metering at the sub asset level, this can also be acceptable for BR participation.	Grid Code, BC4.4
<b>Dispatch mechanism</b>	Bid Offer Acceptance (BOA) to contracted BM units.	Grid Code, BC2.7.1 or BC2.8
<b>Notice to start ramping (NTO/NTB)</b>	As per Grid Code - 2 minutes. This parameter can be lower than 2 minutes.	Grid Code BC1.A.1.5
<b>Ramp rates</b>	Minimum ramp-up and ramp-down rate to be in line with Time to full delivery No maximum ramp rate	
<b>Baselining</b>	Physical Notifications (PNs) submitted in line with Grid Code specifications.	Grid Code, BC1.A.1.1
<b>Dispatch Flexibility</b>	Dispatch must not be limited by Stable Import Limit (SIL)/ Stable Export Limit (SEL), Minimum Non-Zero Time (MNZT) or Minimum Zero Time (MZT).  For units offering Positive BR from 0MW or through 0MW, SEL must be 0 or 1 (MW) and MNZT must be 0 or 1 (minute) – for units offering Positive BR from any FPN >0 this does not apply.  For units offering Negative BR from 0MW or through 0MW, SIL must be 0 or -1 (MW) and MZT must be 0 or 1 (minute) – for units offering Positive BR from any FPN <0 this does not apply.	Service terms, section 8

# Splitting

## ***Splitting***

*'Splitting' – earning revenue and being able to deliver multiple services from the same asset in the same time period, but not from the same MW. The asset can provide different MWs at the same time, providing the ability of the asset to deliver in all contracted service(s) is not impeded.*

The Energy Networks Association developed common definitions for Service Stacking breaking stacking into three sub-categories: “Co-Delivery”, “Splitting” and “Jumping”. See the paper with full definitions [here](#).

The Balancing Reserve auction is not co-optimised with the Dynamic Response & Quick Reserve auction (also called the “EAC auction”) and therefore providers cannot offer Balancing Reserve and Dynamic Response products in the same Sell Order or Basket or create mutually exclusive offerings.

Providers must monitor their units’ contracts from the morning BR auction before submitting Sell Orders for the afternoon EAC auction to avoid incompatible contract award.



# Splitting

## Splitting within Response

- Splitting is allowed between any frequency response products (i.e., amongst any combination of DCL, DCH, DML, DMH, DRL, and DRH).

## Splitting within Reserve

- Splitting is allowed between Balancing Reserve products (PBR and NBR), between Quick Reserve products (PQR and NQR), and between Slow Reserve products (PSR and NSR).
- However, splitting is not yet allowed between different Reserve products.

## Splitting BR with Response

- Splitting is allowed between Balancing Reserve and D\* Response products in the opposite direction (i.e., PBR and DCH/DMH/DRH, NBR and DCL/DML/DRL).

<span style="color: green;">■</span>	Allowed	<span style="color: red;">■</span>	Not allowed
<span style="background-color: black; color: black;">■</span>	Not applicable	<span style="background-color: yellow;">■</span>	Not for Day 1

Splitting Matrix			Response						Reserve					
			DC		DM		DR		BR		QR		SR	
			DCL	DCH	DML	DMH	DRL	DRH	PBR	NBR	PQR	NQR	PSR	NSR
Response	DC	DCL	Not allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Allowed	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1
		DCH	Allowed	Not allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1
	DM	DML	Allowed	Allowed	Not applicable	Allowed	Allowed	Allowed	Not allowed	Allowed	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1
		DMH	Allowed	Allowed	Allowed	Not applicable	Allowed	Allowed	Not allowed	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1
	DR	DRL	Allowed	Allowed	Allowed	Allowed	Not applicable	Allowed	Not allowed	Allowed	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1
		DRH	Allowed	Allowed	Allowed	Allowed	Allowed	Not applicable	Not allowed	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1
Reserve	BR	PBR	Not allowed	Allowed	Not allowed	Allowed	Not allowed	Allowed	Not applicable	Allowed	Not allowed	Not for Day 1	Not allowed	Not for Day 1
		NBR	Allowed	Not allowed	Allowed	Not allowed	Allowed	Not allowed	Allowed	Not applicable	Not for Day 1	Not allowed	Not for Day 1	Not allowed
	QR	PQR	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not allowed	Not for Day 1	Not applicable	Allowed	Not allowed	Not for Day 1
		NQR	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not allowed	Allowed	Not applicable	Not for Day 1	Not allowed
	SR	PSR	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not allowed	Not for Day 1	Not allowed	Not for Day 1	Not applicable	Allowed
		NSR	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not for Day 1	Not allowed	Not for Day 1	Not allowed	Not for Day 1	Allowed

# Joining the Balancing Reserve Service

# High Level User Journey

Stage	Explore	Onboarding /Account Management	Participate	Contract Management	Schedule / Dispatch	Review	Payment
<b>User Journey</b>	<p>Gather data and information</p> <p>Build business case</p> <p>Understand codes, markets and connections</p> <p>Understand Service Parameters</p>	<p>User, company, unit asset registration</p> <p>Pre-qualification</p> <p>Agent set up</p> <p>Contract Accession</p> <p>Asset / Unit versioning</p> <p>User Management</p>	<p>Tender Submission</p> <p>Action Submission</p> <p>Co-optimisation</p>	<p>Contracts awards and status</p> <p>Manage contracts</p>	<p>Availability management</p> <p>Instructions</p>	<p>Data submission / collection</p>	<p>Performance monitoring</p> <p>Settlement</p> <p>Penalties</p> <p>Disputes</p> <p>Financial position</p>
<b>NESO Systems</b>	<p>DEP</p> <p>NESO Website</p>	<p>SMP</p>	<p>EAC</p> <p>SMP</p>	<p>SMP</p> <p>Data Portal</p>	<p>OBP/BM</p>	<p>DEP</p> <p>SMP</p>	<p>Settlement System</p> <p>SMP</p>

High level overview of the user journey and the relevant ESO Systems

# First Time User Registration

**If you and your organisation are new to NESO and to the SMP Portal, then it is required that you register directly via the portal using the following instructions.**

The User should visit and bookmark the following link:  
[Login](#)

As a first time user you will need to click the “Register New Account” button. Users will be navigated to the first ‘screen’ to capture Registration.

## Registering New Primary User

In order to access the SMP Portal, it is expected that upon initial registration the main or ‘primary’ contact (user) at your organisation/company will undertake the registration steps.

Registration involves submitting one’s contact details and their organisation/company details. The successive order is contact details followed by company details.

When entering email addresses or telephone numbers, standardised formats are expected, if a User/Contact does not submit field values compatible with the expected format then the field will be flagged in a red border with a prompt instruction. For example if an email address has been submitted with the incorrect format.

Once all of the fields have been completed on the User/Contact section, the “Next” button will no longer

be shaded grey, instead it will be converted into a blue ‘button’, allowing you to proceed to the next step.

## Registering the Primary User’s Company

The ‘Register new Account’ stage involves two pathways depending on the Company Status. If the User/Contact’s organisation is a UK Limited Company, they select the first checkbox. If the User/Contact’s organisation is a non-UK Company then they select the second checkbox.

Once the option is selected, the user clicks on the “Next” Button.

## Registering a UK Company

The User/Contact will be prompted to search for the Company Name and the Company Registration Number.

For Company Name – they will be expected to enter the name, which will trigger a lookup search/listing of similar names for the user to choose from.

For Company Registration Number – they will be expected to enter the exact reference number, which will trigger a lookup search/listing for the user to select and confirm.

Please note that only valid and accurate Registration Numbers will be accepted and appear in the search

exercise.

For Company Registration Number – they will be expected to enter the exact reference number, which will trigger a lookup search/listing for the user to select and confirm.

Please note that only valid and accurate Registration Numbers will be accepted and appear in the search exercise. If your Company is a UK Limited Company and the search listing is unsuccessful, you will need to reach out to your NESO Account Manager by email

Once a match has been found, the User/Contact must select the “Submit” button to proceed to the next step.

If the search result is incorrect or the User/Contact wishes to undertake a new search, then they are expected to click on the “Remove Company” link to refresh the search functionality.

Once the search result is correct, then the User/Contact selects the “Submit” button on the bottom right right-hand corner of the screen.

For more information on this process, or for information on registering a non UK company click [here](#).

For support please contact:  
[commercial.operation@nationalenergyso.com](mailto:commercial.operation@nationalenergyso.com)

# Unit and Asset Registration

Once you have registered as a user on SMP, you can begin creating your units and assets you wish to prequalify for Balancing Reserve.

In order to do so, you should enter your SMP account via the following link:  
<https://portal.nationalenergyso.com/smp/s/login/>

If you are a first-time user, please follow the guidance on the prior slide to register yourself/your company.

If not, or you have already completed first time user registration, you can proceed to register your Units and Assets in SMP and pre-qualify them for Balancing Reserve (Positive and/or Negative).

For users who already have Assets and Units in SMP, for other services (i.e DC/DM/DR), that you wish to pre-qualify for Balancing Reserve, you can move ahead to **Pre-qualifying Units for Balancing Reserve**.

## Registering New Assets and Units

You can register new Assets and Units on the

SMP portal, by following the instructions in the demo video linked here: [Creating Assets and Units in SMP](#)

or by following the instructions in **Section 4 and 5** of the [SMP External User Guide](#)

This process is the same as for any other services you have pre-qualified for in SMP; such as DC, DM or DR.

## Prequalifying Units for Balancing Reserve

In order to prequalify your units for Positive or Negative Balancing Reserve, you should have created your Assets and Units, and linked them together (As per the prior video and section 6 of the User Guide). You can then proceed to pre-qualification, by following the instructions in the demo video linked here (ensure you have selected the relevant Balancing Reserve service): [Prequalifying Units for Balancing Services](#)

Or by following the instructions in **Section 7** of the [SMP External User Guide](#)

Once you have submitted your unit/s for pre-qualification, they will be reviewed by the NESO team. We will check that: a signed Form B has been provided, as well as that the Unit information is correct and meets the service parameters. If all of this is true, your unit will be approved and is ready to take part in Balancing Reserve.

For technical support, and SMP queries, please contact:  
[commercial.operation@nationalenergyso.com](mailto:commercial.operation@nationalenergyso.com)



# Order Submission Process (EAC)

**The following section will give a step-by-step guide to submitting orders on EAC. If you and your organisation are new to NESO and have yet to register to SMP, then it is required that you register there first. All participants must then be registered as a user for EAC, even after registering units on SMP.**

After registering for EAC and logging in with 2-factor authentication the first step is to select that auction that you would like to bid into. All auctions with gates open can be found under the 'Auctions' tab.

After you have selected the auction that you would like to bid into you will need to select the unit you would like to use from the drop-down menu.

Following this you will start to build and add your baskets (defined by EFA block). You will give your basket a name and a family name if these are looped baskets and add in the relevant information such as price volume and any child order or substitutable child orders as required.

Once all of the relevant information has been added the bid can be submitted.

After the auction results can be found in the results tab for your relevant unit, all results will be published on the Data Portal for all units.

Please note that bids can also be submitted via API, to obtain API credentials please contact NESO.

**Figure:** View of upcoming auctions

Name	Start Date	Start Time	ID	Status
Response @ 14:00	20/02/2024	14:00:00	140	OPEN
Response @ 14:00	21/02/2024	14:00:00	141	OPEN
Response @ 14:00	22/02/2024	14:00:00	142	OPEN
Response @ 14:00	23/02/2024	14:00:00	143	OPEN
Response @ 14:00	24/02/2024	14:00:00	144	OPEN
Response @ 14:00	25/02/2024	14:00:00	145	OPEN
Response @ 14:00	26/02/2024	14:00:00	146	OPEN
Response @ 14:00	27/02/2024	14:00:00	147	OPEN
Response @ 14:00	28/02/2024	14:00:00	148	OPEN
Response @ 14:00	29/02/2024	14:00:00	149	OPEN
Response @ 14:00	01/03/2024	14:00:00	150	OPEN
Response @ 14:00	02/03/2024	14:00:00	151	OPEN
Response @ 14:00	03/03/2024	14:00:00	152	OPEN
Response @ 14:00	04/03/2024	14:00:00	153	OPEN

**Figure:** Adding parent and child orders to the basket (continued)

Identifier	Name	Family	Service Window
1085			1

**Figure:** Button to create new basket

**Figure:** Adding parent and child orders to the basket

Service	Volume
PSR	50
NBR	0



# Performance Monitoring

# Availability: PBR

This section provides information on the application of the performance monitoring methodology for Balancing Reserve. Units participating in the service will be subject to performance monitoring on **Availability**, **Utilisation**, **Time to Full Delivery**, and **Dispatch Flexibility**. In the event of any conflict or inconsistency between this document and the Service Terms, the latter shall prevail.

## Performance Monitoring of Availability (EoD code "AVAL")

A contracted unit should be able to demonstrate 100% of contracted Positive Balancing Reserve (headroom) or Negative Balancing Reserve (footroom). Failure to demonstrate the contracted availability will trigger an Event of Default (EoD). When a reserve unit triggers an EoD, it will forfeit the Availability Payment for all the relevant Contracted Windows.

## Positive Balancing Reserve

**For a generator (or a unit with only positive output):**

$$\text{MEL} - \text{FPN} \geq \text{Contracted Quantity}$$

**For a supplier (or a unit with only negative output):**

$$\text{SIL} - \text{FPN} \geq \text{Contracted Quantity}$$

**For a "through-zero" unit:**

$$\text{MEL} - \text{FPN} \geq \text{Contracted Quantity}$$

**For a Power Park Module powered by an Intermittent Power Source:**

$$\text{PA} - \text{FPN} \geq \text{Contracted Quantity}$$

## Negative Balancing Reserve

**For a generator (or a unit with only positive output):**

$$\text{FPN} - \text{SEL} \geq \text{Contracted Quantity}$$

**For a supplier (or a unit with only negative output):**

$$\text{FPN} - \text{MIL} \geq \text{Contracted Quantity}$$

**For a "through-zero" unit:**

$$\text{FPN} - \text{MIL} \geq \text{Contracted Quantity}$$

**For a Power Park Module powered by an Intermittent Power Source:**

$$\text{FPN} - \text{PA} \geq \text{Contracted Quantity}$$

### **Dynamic Parameter definitions:**

FPN – Final Physical Notification, MEL – Maximum Export Limit, SEL – Stable Export Limit, MIL – Maximum Import Limit, SIL – Stable Import Limit, PA – Power Available.

# Commercial Unavailability

## Performance Monitoring of Availability (EoD code "IVCP")

A contracted unit should be able to demonstrate 100% of contracted Positive Balancing Reserve (headroom) or Negative Balancing Reserve (footroom). Failure to demonstrate the contracted availability will trigger an Event of Default (EoD). When a reserve unit triggers an EoD, it will forfeit Availability Payment for all the relevant Committed Windows.

Where a unit fails the availability check we will determine whether the unit was Technically Unavailable or Commercially Unavailable.

Where the unit fails the availability check and is Commercially Unavailable then the **Incremental Volume Cost penalty** will be applied.

## Positive Balancing Reserve

### For a generator (or a unit with only positive output)

Where  $MEL - FPN < \text{Contracted Quantity}$  and;

$MEL - SEL < \text{Contracted Quantity} \rightarrow \text{Technical Unavailability};$

$MEL - SEL \geq \text{Contracted Quantity} \rightarrow \text{Commercial Unavailability}$

### For a supplier (or a unit with only negative output):

Where  $SIL - FPN < \text{Contracted Quantity}$  and;

$SIL - MIL < \text{Contracted Quantity} \rightarrow \text{Technical Unavailability};$

$SIL - MIL \geq \text{Contracted Quantity} \rightarrow \text{Commercial Unavailability}$

### For a "through-zero" unit:

Where  $MEL - FPN < \text{Contracted Quantity}$  and;

$MEL - MIL < \text{Contracted Quantity} \rightarrow \text{Technical Unavailability};$

$MEL - MIL \geq \text{Contracted Quantity} \rightarrow \text{Commercial Unavailability}$

### For a Power Park Module powered by an Intermittent Power Source:

Where  $PA - FPN < \text{Contracted Quantity}$  and;

$PA - SEL < \text{Contracted Quantity} \rightarrow \text{Technical Unavailability};$

$PA - SEL \geq \text{Contracted Quantity} \rightarrow \text{Commercial Unavailability}$

#### **Dynamic Parameter definitions:**

*FPN* – Final Physical Notification, *MEL* – Maximum Export Limit, *SEL* – Stable Export Limit, *MIL* – Maximum Import Limit, *SIL* – Stable Import Limit, *PA* – Power Available.

# Commercial Unavailability

## Performance Monitoring of Availability (EoD code "IVCP")

A contracted unit should be able to demonstrate 100% of contracted Positive Balancing Reserve (headroom) or Negative Balancing Reserve (footroom). Failure to demonstrate the contracted availability will trigger an Event of Default (EoD). When a reserve unit triggers an EoD, it will forfeit Availability Payment for all the relevant Committed Windows.

Where a unit fails the availability check we will determine whether the unit was Technically Unavailable or Commercially Unavailable.

Where the unit fails the availability check and is Commercially Unavailable then the **Incremental Volume Cost penalty** will be applied.

## Negative Balancing Reserve

### For a generator (or a unit with only positive output)

Where  $MEL - FPN < \text{Contracted Quantity}$  and;

$MEL - SEL < \text{Contracted Quantity} \rightarrow \text{Technical Unavailability}$ ;

$MEL - SEL \geq \text{Contracted Quantity} \rightarrow \text{Commercial Unavailability}$

### For a supplier (or a unit with only negative output):

Where  $SIL - FPN < \text{Contracted Quantity}$  and;

$SIL - MIL < \text{Contracted Quantity} \rightarrow \text{Technical Unavailability}$ ;

$SIL - MIL \geq \text{Contracted Quantity} \rightarrow \text{Commercial Unavailability}$

### For a "through-zero" unit:

Where  $MEL - FPN < \text{Contracted Quantity}$  and;

$MEL - MIL < \text{Contracted Quantity} \rightarrow \text{Technical Unavailability}$ ;

$MEL - MIL \geq \text{Contracted Quantity} \rightarrow \text{Commercial Unavailability}$

### For a Power Park Module powered by an Intermittent Power Source:

Where  $PA - FPN < \text{Contracted Quantity}$  and;

$PA - SEL < \text{Contracted Quantity} \rightarrow \text{Technical Unavailability}$ ;

$PA - SEL \geq \text{Contracted Quantity} \rightarrow \text{Commercial Unavailability}$

#### **Dynamic Parameter definitions:**

*FPN* – Final Physical Notification, *MEL* – Maximum Export Limit, *SEL* – Stable Export Limit, *MIL* – Maximum Import Limit, *SIL* – Stable Import Limit, *PA* – Power Available.

# Utilisation

This section provides information on the application of the performance monitoring methodology for Balancing Reserve. Units participating in the service will be subject to performance monitoring on **Availability**, **Utilisation**, **Time to Full Delivery**, and **Dispatch Flexibility**. In the event of any conflict or inconsistency between this document and the Service Terms, the latter shall prevail.

## Performance Monitoring of Utilisation

Under-delivery below 95% expected output will mean availability payments for the relevant service window will be withheld. Over-delivery is not penalised by the performance monitoring.

For units which are armed for Mandatory Frequency Response (MFR) or contracted for a dynamic response contract in the opposite direction their response energy delivered will adjust the Expected Output and ensure that units are not penalised for under-delivery when they are automatically adjusting output to manage frequency. This enables service stacking between BR and response services as per the "Service Stacking" guidelines.

### For all units

**PBR:** Expected output = Positive net BOA volume (MWh)\* + Response Energy (MWh)

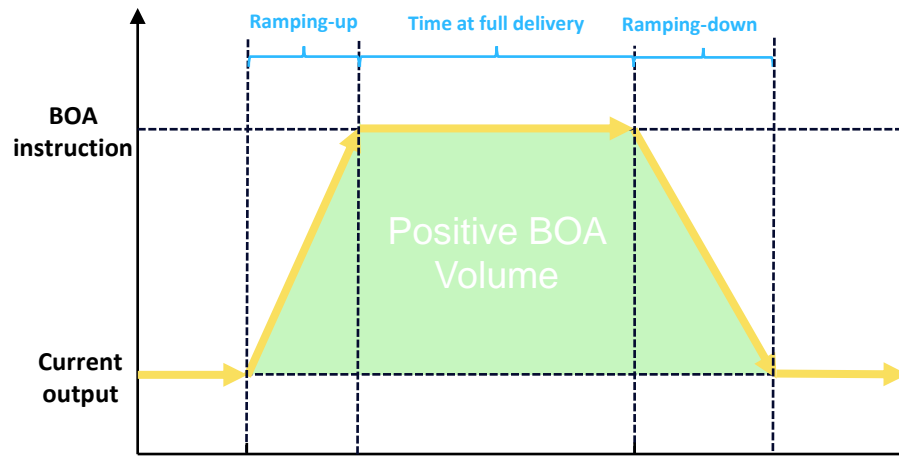
**NBR:** Expected output = Negative net BOA volume (MWh)\* + Response Energy (MWh)

\*If two or more BOAs in opposite directions are received in a Settlement Period, utilisation performance monitoring is on the net direction. If no contract is held in that direction, then no utilisation check is made.

### The check

#### For all units:

$(\text{Settlement metering} - \text{FPN volume}) / \text{Expected output} \geq 0.95$



### Dynamic Parameter definitions:

FPN – Final Physical Notification, MEL – Maximum Export Limit, SEL – Stable Export Limit, MIL – Maximum Import Limit, SIL – Stable Import Limit, PA – Power Available.

# Time to Full Delivery

This section provides information on the application of the performance monitoring methodology for Balancing Reserve. Units participating in the service will be subject to performance monitoring on **Availability, Utilisation, Time to Full Delivery**, and **Dispatch Flexibility**. In the event of any conflict or inconsistency between this document and the Service Terms, the latter shall prevail.

## Performance Monitoring of Time to Full Delivery

A contracted unit must be capable of achieving the full contracted capacity within the Time to Full Delivery of 10 minutes this is inclusive of Notice to Offer (NTO) or Notice to Bid (NTB) parameters. Whilst NTO/NTB can be set as low as 0 minutes, the Grid Code allows an NTO/NTB of 2 minutes (see BC2.7.3).

Note that the contracted BR unit is also expected to cease delivery of the BOA within 10 minutes (NTO/NTB time does not apply in the cessation of the BOA).

## Positive Balancing Reserve Example\*

**For a generator\*\* (or a unit with only positive output):**

Time to full delivery (minutes) = Contracted PBR capacity (MW) / Run up rate Export (MW/min)

**For a supplier (or a unit with only negative output):**

Time to full delivery (minutes) = Contracted PBR capacity (MW) / Run down rate Import (MW/min)

**For a bi-directional unit:**

(If FPN  $\geq 0$ )

Time to full delivery (minutes) = Contracted PBR capacity (MW) / Run up rate Export (MW/min)

(If FPN  $< 0$ )

Time to full delivery (minutes) = Contracted PBR capacity (MW) / Run down rate Import (MW/min)

**The Check:**

**Time to Full Delivery + NTO\*\*\*  $\leq 10$  minutes**

\*Run up is replaced with run down and vice versa for Negative Balancing Reserve to calculate the time to full delivery.

\*\*Where units have multiple run-up or run-down rates then one, two or three rates are used for the relevant parts of the contracted quantity (where applicable) – see detailed example 3 for more information.

\*\*\*For NBR NTB will be used in place of NTO, where the unit is delivering from a OMW FPM, NDZ will be used.

### **Dynamic Parameter definitions:**

FPN – Final Physical Notification, MEL – Maximum Export Limit, SEL – Stable Export Limit, MIL – Maximum Import Limit, SIL – Stable Import Limit, PA – Power Available.

# Dispatch Flexibility

This section provides information on the application of the performance monitoring methodology for Balancing Reserve. Units participating in the service will be subject to performance monitoring on **Availability, Utilisation, Time to Full Delivery, and Dispatch Flexibility**. In the event of any conflict or inconsistency between this document and the Service Terms, the latter shall prevail.

## Performance Monitoring of Dispatch Flexibility

A contracted unit must be capable of being dispatched during contracted service windows in accordance with the following rules:

- being dispatched from any prevailing Stable Export Limit or Stable Import Limit (which for the avoidance of doubt may be 0MW) or from any other higher level of Output or Demand
- being dispatched for all or part of its Contracted Quantity and in one or multiple consecutive increments of one 1MW
- being dispatched for a single or multiple consecutive periods each of not less than 1 minute duration (representing a minimum activation period) which for these purposes shall exclude Ramping Periods.

## Positive Balancing Reserve

### For a generator (or a unit with only positive output):

$$FPN \geq SEL, \text{ or } FPN = 0 \text{ and } SEL = 1$$

### For a supplier (or a unit with only negative output):

No additional check required\*

### For a “through-zero” unit:

$$\text{If } FPN > 0, FPN \geq SEL,$$

$$\text{If } FPN = 0 \text{ then } SEL = 0,1$$

$$\text{If } FPN < 0^{**}, SIL = 0,-1 \text{ and } SEL = 0,1$$

\*BR contracted providers delivering from a negative FPN should ensure that their SIL does not impede their ability to be flexibly dispatched for all or part of the contracted quantity – this capability will be monitored via the availability check.

\*\*When prequalifying for Balancing Reserve providers will self-declare whether they are a generator, supplier or a “through-zero” unit. If declared as a through-zero unit SIL and SEL should routinely be 0,1 or -1 to avoid failing this check when delivering BR from an  $FPN < 0$ .

### **Dynamic Parameter definitions:**

*FPN – Final Physical Notification, MEL – Maximum Export Limit, SEL – Stable Export Limit, MIL – Maximum Import Limit, SIL – Stable Import Limit, PA – Power Available.*

# Dispatch Flexibility

This section provides information on the application of the performance monitoring methodology for Balancing Reserve. Units participating in the service will be subject to performance monitoring on **Availability, Utilisation, Time to Full Delivery**, and **Dispatch Flexibility**. In the event of any conflict or inconsistency between this document and the Service Terms, the latter shall prevail.

## Performance Monitoring of Dispatch Flexibility

A contracted unit must be capable of being dispatched during contracted service windows in accordance with the following rules:

- being dispatched from any prevailing Stable Export Limit or Stable Import Limit (which for the avoidance of doubt may be 0MW) or from any other higher level of Output or Demand
- being dispatched for all or part of its Contracted Quantity and in one or multiple consecutive increments of one 1MW
- being dispatched for a single or multiple consecutive periods each of not less than 1 minute duration (representing a minimum activation period) which for these purposes shall exclude Ramping Periods.

## Negative Balancing Reserve

### For a generator (or a unit with only positive output):

No additional check required\*\*\*

### For a supplier (or a unit with only negative output):

$FPN \leq SIL$ , or  $FPN = 0$  and  $SIL = -1$

### For a “through-zero” unit:

If  $FPN > 0$ ,  $SIL = 0, -1$  and  $SEL = 0, 1$

If  $FPN = 0$  then  $SIL = 0, 1$

If  $FPN < 0$ ,  $FPN \leq SIL$

\*\*\*BR contracted providers delivering from a positive FPN should ensure that their SEL does not impede their ability to be flexibly dispatched for all or part of the contracted quantity – this capability will be monitored via the availability check.

### **Dynamic Parameter definitions:**

*FPN – Final Physical Notification, MEL – Maximum Export Limit, SEL – Stable Export Limit, MIL – Maximum Import Limit, SIL – Stable Import Limit, PA – Power Available.*



# Incremental Volume Cost (IVC)

The IVC is a penalty amount levied on BR contracted units which are determined by NESO to have failed the BR availability checks due to reasons of [Commercial Unavailability](#).

The IVC is calculated in accordance with the formula in the BR service terms and NESO interpretation where the service terms are not specific.

There are two IVCs calculated for each SP – one which applies to PBR contracts deemed to be commercially unavailable and one for NBR contracts deemed to be commercially unavailable.

## “Incremental Volume Cost”

for a **Settlement Period**, the amount calculated as the higher of:

- (1) (A multiplied by B multiplied by 0.5) minus C
- and
- (2) zero

Where:

A is the highest accepted **Offer Price** or **Bid Price** in the **Balancing Mechanism** in that **Settlement Period** (ignoring any system-tagged **Bid-Offer Acceptance** and any **Bid-Offer Acceptance** issued in error), or (if higher) any price for that **Settlement Period** agreed by **NGESO** and its counterparty pursuant to a grid trade under a Grid Trade Master Agreement;

B is the **Contracted Quantity**;

C is the settlement value calculated for that **Settlement Period** pursuant to Schedule 2 to these **BR Service Terms** which would otherwise have been payable to the **Service Provider** but for the operation of paragraph 15.2 and Schedule 2 to these **BR Service Terms**;

# IVC

## Rules for calculating Incremental Volume Cost for NBR:

- 1) Only consider actions from the **Sell Stack** for NBR – these are the actions with a negative volume.
- 2) As Negative bid prices are expensive for NESO we should search for the **lowest price** in the sell stack.
- 3) Remove all system flagged bids.
- 4) Remove actions that have flowed through from DISBSAD (Sell trades on the interconnectors taken by ESO for energy reasons).
- 5) Remove actions taken in error (where DMAT is set to 0).
- 6) Adjust the figure to be a £/MW/SP rather than £/MWh.
- 7) Subtract the clearing price for NBR from the result and floor at £0.

## Rules for calculating Incremental Volume Cost for PBR:

- 1) Only consider the actions from the **Buy Stack** for PBR – these are the actions with a positive volume.
- 2) As Positive offer prices are expensive for NESO we should search for the **highest price** in the buy stack.
- 3) Remove all system flagged offers.
- 4) Remove actions that have flowed through from DISBSAD (Trades and NBM actions from OFR via PAS dispatches). Although trades could be included, they only set the PBR IVC 0.5% of the time, so we have decided to remove all trading actions.
- 5) Remove actions taken in error (where DMAT is set to 0).
- 6) Adjust the figure to be a £/MW/SP rather than a £/MWh.
- 7) Subtract the clearing price for PBR from the result and floor at £0.

**8) If the IVC for the half hour ends up being higher than £500/MW/SP. Cap it at £500/MW/SP.**

# Operational Data

# Pre-gate closure data

- Contracted Balancing Reserve providers need to submit BM data to NESO via EDL/EDT. This data should be submitted in accordance with the Grid Code (BC1 and BC2).
- NESO engineers calculate the expected operating margin repeatedly between 24 hours and 4 hours ahead of real time. These margin assessments provide key information to notify dispatch engineers that warning instructions are needed to synchronise cold plant and ensure reserve is available in real time.
- The introduction of Balancing Reserve means that some contracted reserve volume is known at 09:00 the Day Ahead of delivery and therefore these contracted volumes will be included in the engineer's margin assessments.
- To help us to ensure the margin assessments are as accurate as possible we would appreciate contracted BM units submitting Day Ahead Submissions even when not mandated to do so by the Grid Code.
- Data should then be revised if new information becomes available to the BM Participant.

## **Reminder of BM data relevant for Balancing Reserve:**

Maximum Export Limit (MEL)

Maximum Import Limit (MIL) [if applicable]

Stable Export Limit (SEL)

Stable Import Limit (SIL) [if applicable]

Run-up Rate/s

Run-down Rate/s

Minimum Non-Zero Time (MNZT)

Minimum Zero Time (MZT)

Bid/Offer pairs

Notice to Offer (NTO)

Notice to Bid (NTB)

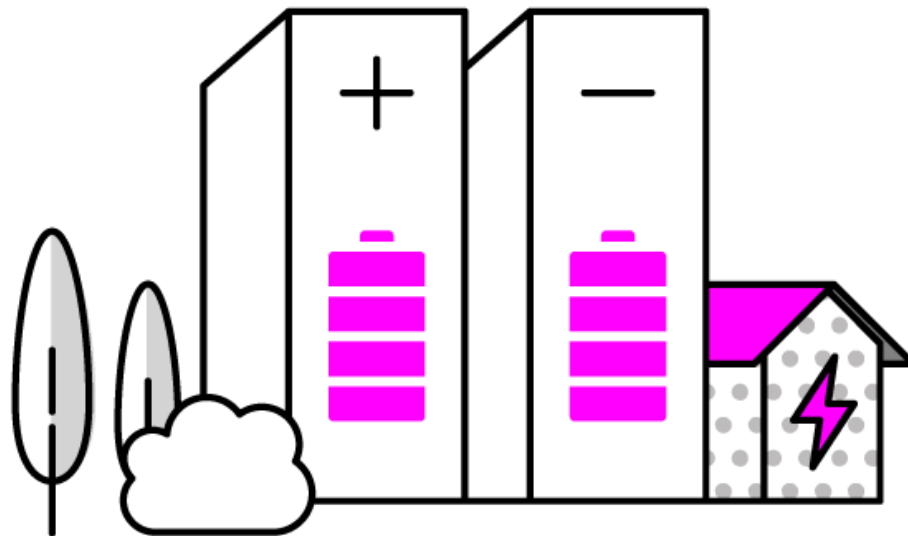
Notice to Deviate from Zero (NDZ)

## Energy Limited Assets

Battery Energy Storage Systems (BESS) and Pumped Storage have energy limitations depending on the storage capacity of their equipment. BESS can participate in the BR auctions but are expected to be able to manage their state of energy to be able to deliver the full contracted quantity for the duration of the BR service window. Failure to do this could result in an [IVC](#) penalty.

**We have published guidance on the submission of MEL/MIL parameters for energy limited assets, please read this [guidance note](#) to learn more.**

This approach is designed to be temporary whilst the GC0166 working group design new parameters for storage. More information on this Grid Code modification proposal can be found [here](#).



# Data and Transparency

**Registered Service Providers will be required to submit Operational Data, as outlined in the Service Terms.**

No performance data needs to be submitted by contracted BR providers, NESO will use its own data to performance monitor the units at a 30-minute granularity. Operational data should be submitted via BM systems (e.g. EDT/EDL).

Details of the BR auction results including a breakdown of each Sell Order, NESO's Buy Order and results summaries is available on the data portal by 09:00 every morning.

[EAC-BR Auction Results | National Energy System Operator](#)

Details of unit dispatch can be found via the Dispatch Transparency dataset or through [ELEXON's website](#).



# Get in touch

Email us with your views on this guidance document:

[box.futureofbalancingservices@nationalenergyso.com](mailto:box.futureofbalancingservices@nationalenergyso.com)

And one of our team members will get in touch

Access our current Reserve documents here:

[Balancing Reserve](#)

[Quick Reserve](#)

[Slow Reserve](#)

[Short Term Operating Reserve](#)

Connect with us on social media:

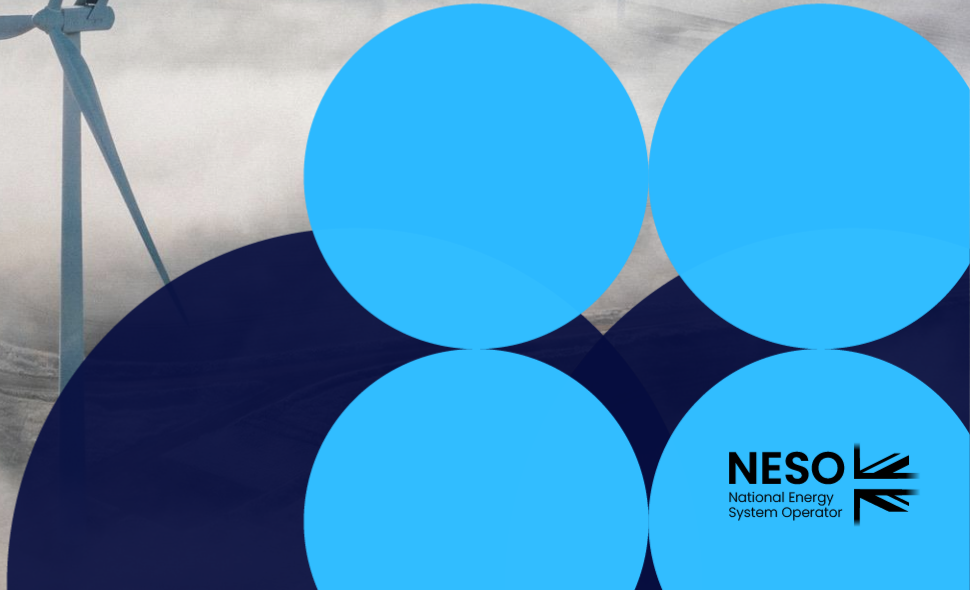
[X](#)

[LinkedIn](#)

[YouTube](#)



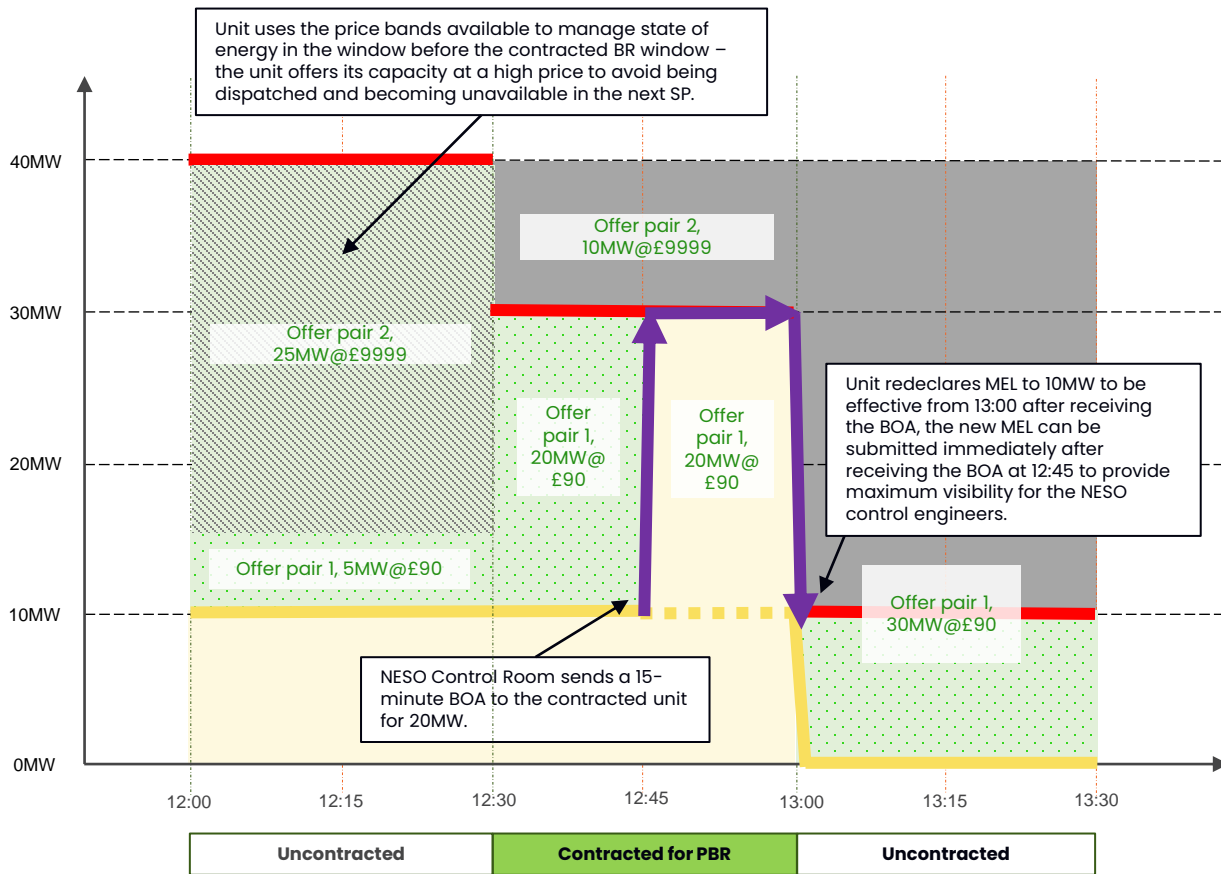
# Appendix





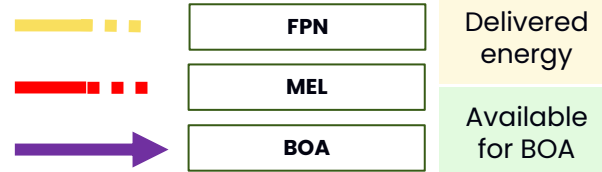
# A. Performance Monitoring – Examples

# Example 1 – using price bands to manage state of energy (30-minute rule)



## Unit characteristics

- The BESS has a maximum generation capacity (GC) of 40MW.
- The unit has submitted a run up rate of 40MW/minute. (although is assumed to ramp instantaneously)
- The unit does not have any response contracts.
- The unit is contracted for 20MW of Positive Balancing Reserve in BR Service Window 28.
- **At 12:00 the unit has 20MWh of stored energy available for discharge.**
- Settlement metering for SP26 (12:30 – 13:00) = 9.9MWh (a small under delivery)



## Unit revenue

- The clearing price for SP26/SW28 in the DA BR auction was £15/MW/hour. For the contracted window the provider expects to be paid  $(£15 \times 20) / 2 = £150$ .
- The offer price of £9999/MWh for Offer pair 2 protects the provider from incurring an IVC penalty for not having available PBR capacity in SW28 due to state of energy limitations.

## Example 1 – performance monitoring

### **Performance check (PBR) SP26:**

#### *Availability*

- $MEL - FPN \geq 20MW$
- $(30 - 10) \geq 20$
- **CORRECT**

#### *Utilisation*

- Settlement Metered volume – FPN volume  $\geq$  Expected Output\*0.95
- $9.9 - 5 \geq (5)*0.95$
- **CORRECT**

#### *Time to full delivery*

- Contracted quantity / Run up Rate + NTO  $\leq$  10 minutes
- $(20 / 40) + 2 \leq 10$
- $2.5 \leq 10$
- **CORRECT**

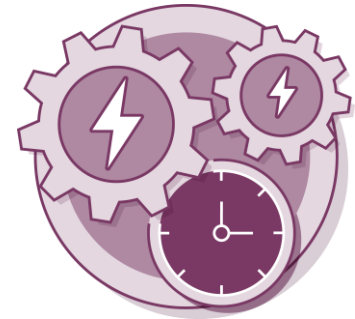
#### *Flexible dispatch*

- $FPN \geq SEL$  (if  $FPN > 0$ )
- $SEL = 0MW$  for this BESS BMU
- **CORRECT**

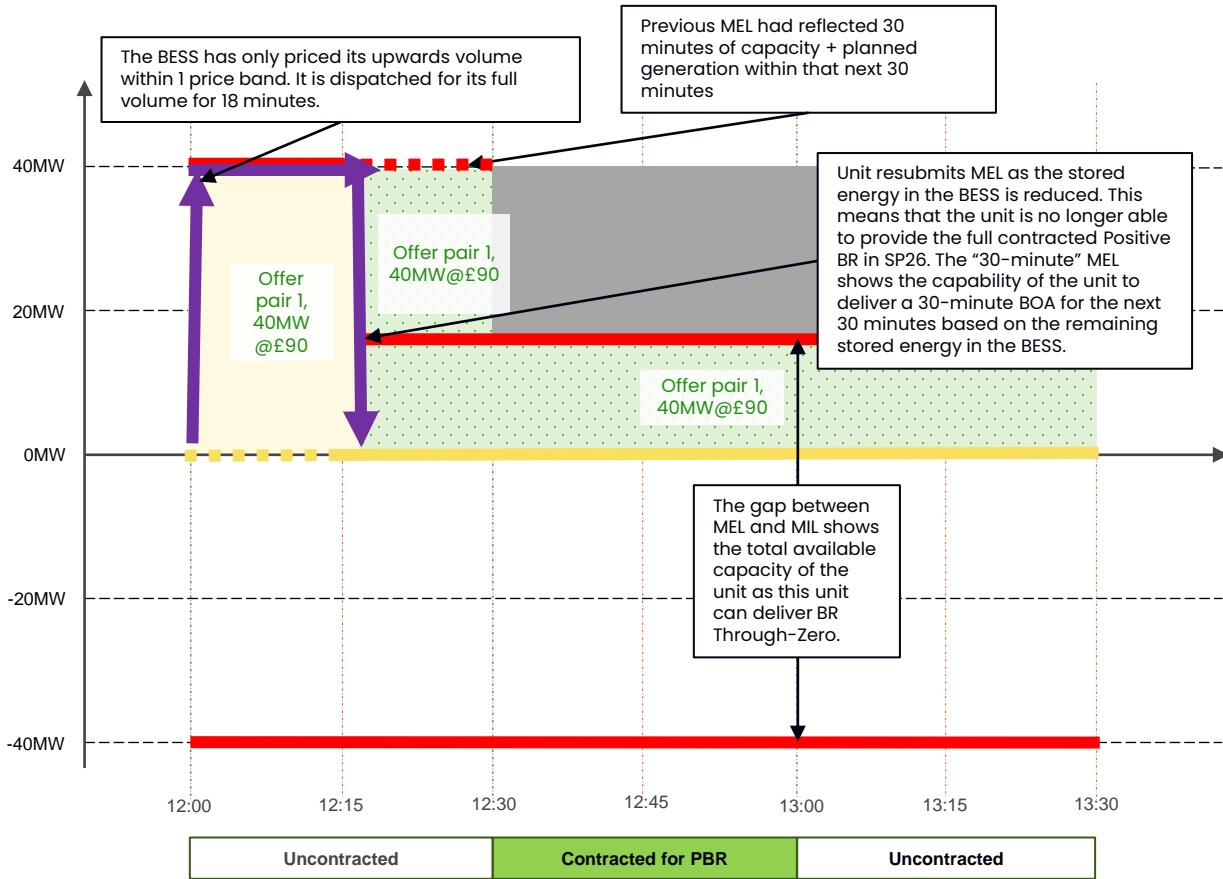
This unit has slightly underdelivered: Settlement Metering = 9.9MWh but FPN + Offer volume = 10MWh. However, this is within the 5% tolerance and so there is no impact on the units' availability payments for BR. Any BOA under delivery may still be penalised under [the BSC](#).

### **Unit revenue**

- The unit passed all 4 of the performance monitoring checks.
- BR Availability payment = £150
- BM Offer payment =  $20MW * 0.25hour * £90/MWh = £450$
- Total revenue (BOA + BR availability payments) from 12:00 – 13:30 = £600



# Example 2 – Commercial Unavailability and the Incremental Volume Cost (IVC)



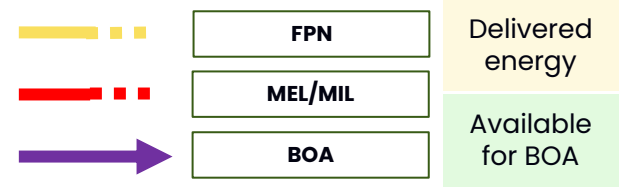
The BESS has only priced its upwards volume within 1 price band. It is dispatched for its full volume for 18 minutes.

Previous MEL had reflected 30 minutes of capacity + planned generation within that next 30 minutes

Unit resubmits MEL as the stored energy in the BESS is reduced. This means that the unit is no longer able to provide the full contracted Positive BR in SP26. The "30-minute" MEL shows the capability of the unit to deliver a 30-minute BOA for the next 30 minutes based on the remaining stored energy in the BESS.

The gap between MEL and MIL shows the total available capacity of the unit as this unit can deliver BR Through-Zero.

- Unit characteristics**
- The BESS has a maximum generation capacity (GC) of 40MW.
  - The unit has submitted a run up rate of 40MW/minute. (although is assumed to ramp instantaneously)
  - The unit does not have any response contracts.
  - The unit is contracted for 20MW of Positive Balancing Reserve in BR Service Window 28.
  - At 12:00 the unit has 20MWh of stored energy available for discharge.
  - Settlement metering for SP26 (12:30 – 13:00) = 0MWh



- Unit revenue**
- The clearing price for SP26/SW28 in the DA BR auction was £10/MW/hour. For the contracted window the provider expects to be paid  $(£10 \times 20) / 2 = £100$ .
  - The offer the unit received at 12:00 allowed total revenue of  $40 \times 0.3 \times £90 = £1,080$ .

## Example 2 – performance monitoring

### Performance check (PBR) SP26:

#### *Availability*

- $MEL - FPN \geq 20MW$
- $(16 - 0) \geq 20$
- **INCORRECT**

#### *Availability Type Check (only conducted when a unit fails the Availability Check)*

- If  $MEL - MIL \geq 20MW$
- $16 - (-40) \geq 20$
- $56 \geq 20$  → **COMMERCIAL UNAVAILABILITY**

If a unit is deemed to be commercially unavailable for BR, then the Incremental Volume Cost (IVC) penalty is applied.

*Utilisation* → **PBR NOT CHECKED**

*Time to full delivery* → **CORRECT**

*Flexible dispatch* → **CORRECT**

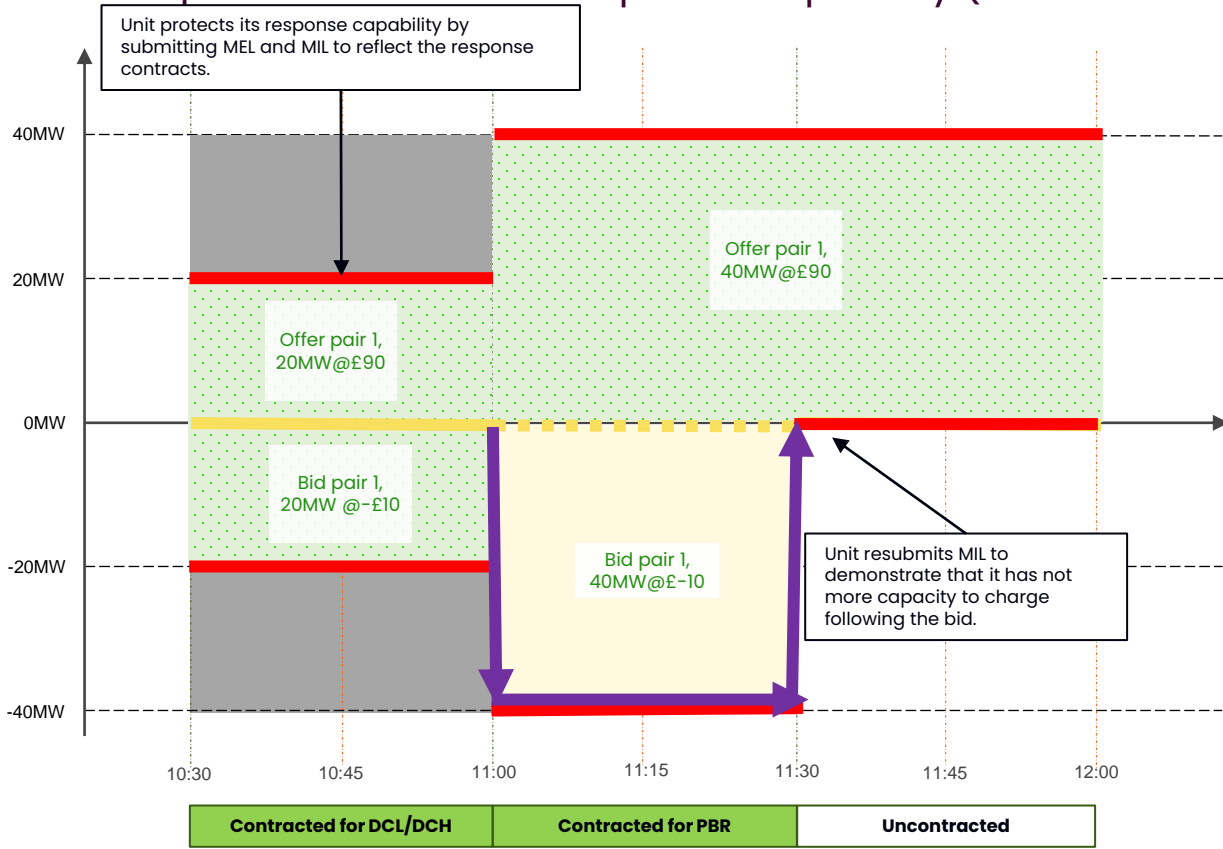
### Unit revenue

- The unit failed the check on availability. 100% of the BR availability is withheld.
- BR Availability payment = £0
- Incremental Volume Cost for PBR was calculated as £55/MW/SP for this SP.
- Total IVC charge =  $£55 * 20 = -£1100$
- BM Offer payment = £1,080
- Total revenue from BR & BM from 12:00 – 13:30 = **-£20**

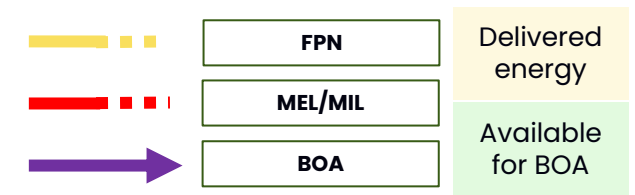
### Note:

To avoid incurring this penalty charge the unit should structure price bands to avoid being dispatched in the uncontracted window immediately before their contracted window. It may be difficult to price in the impact of an IVC penalty charge as it is calculated ex post based on actions taken within the specific settlement period in question.

# Example 3 – contracted response capability (30 minute rule)



- Unit characteristics**
- The BESS has a maximum generation capacity (GC) of 40MW.
  - The unit has submitted a run up and run down rate of 40MW/minute. (although is assumed to ramp instantaneously)
  - The unit has a DCL and DCH contract for EFA 3 each for 15MW.
  - The unit is contracted for 20MW of Positive Balancing Reserve in BR Service Window 25.
  - At 10:30 the unit has 20MWh of stored energy available for discharge.
  - Settlement metering for SP22 (10:30 – 11:00) = 0MWh [high and low response contracts cancel each other out in this example]
  - Settlement metering for SP23 (11:00 – 11:30) = -20MWh



## Example 3 – contracted response capability (30 minute rule)

### **Performance check (PBR) SP23:**

#### *Availability*

- MEL – FPN  $\geq$  20MW
- $(40 - 0) \geq 20$
- **CORRECT**

#### *Utilisation*

- Settlement Metered volume  $\geq$  (BOA + FPN volume)\*0.95
- net negative BOA volume → **PBR NOT CHECKED**

#### *Time to full delivery*

- Contracted quantity / Run up Rate + NTO  $\leq$  10 minutes
- $(20 / 40) + 2 \leq 10$
- $2.5 \leq 10$
- **CORRECT**

#### *Flexible dispatch*

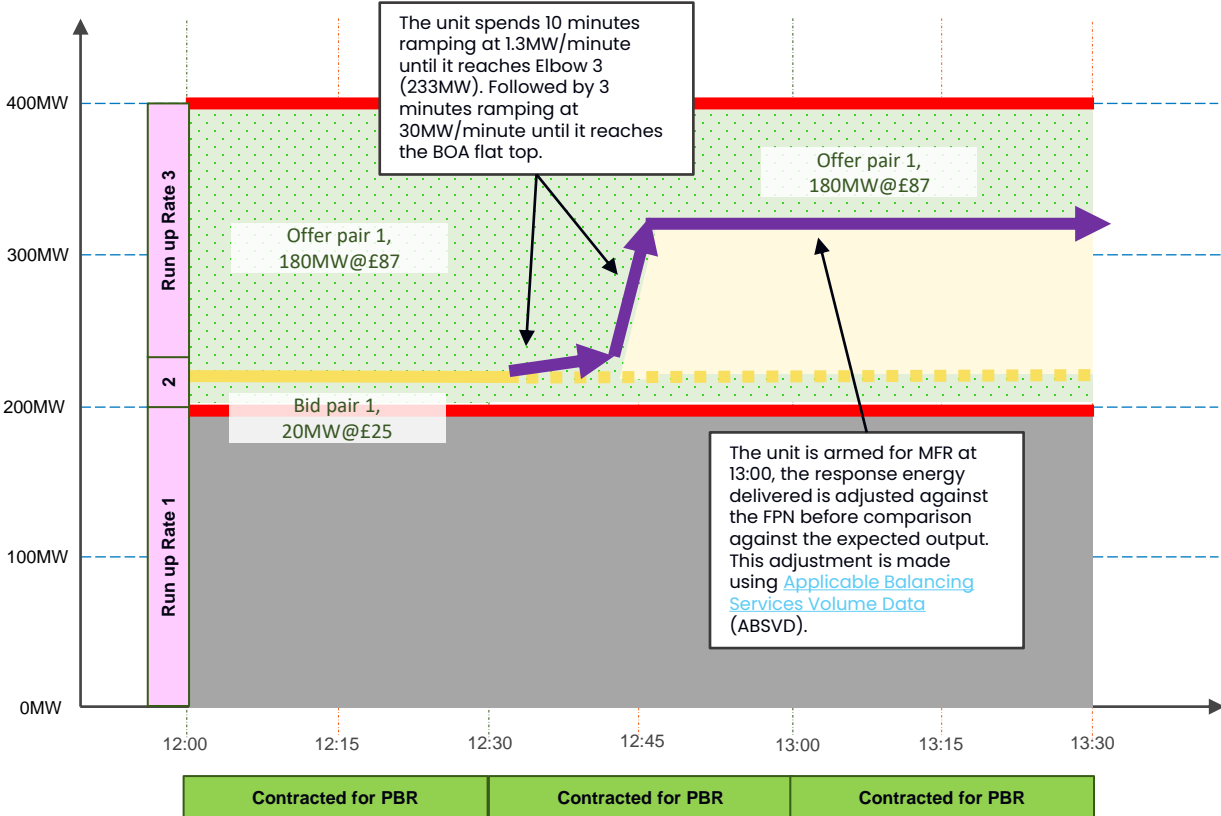
- FPN  $\geq$  SEL (if FPN  $>$  0)
- SEL = 0MW for this BESS BMU
- **CORRECT**

### **Unit revenue**

- The unit passed all 4 of the performance monitoring checks.
- BR Availability payment = £270
- BM bid payment =  $-40\text{MW} * 0.5\text{hour} * -£10/\text{MWh} = £200$
- DCL revenue for 10:30 – 11:00 =  $15\text{MW} * 0.5\text{hour} * £0.58/\text{MW}/\text{hr} = £4.35$
- DCH revenue for 10:30 – 11:00 =  $15\text{MW} * 0.5\text{hour} * £1.98/\text{MW}/\text{hr} = £14.85$
- Total revenue from ESO from 10:30 – 12:00 = £489.20



# Example 4 – ramp rate checks



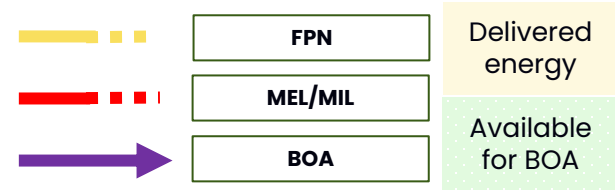
## Unit characteristics

- This CCGT unit has a maximum generation capacity of 400MW and a SEL of 200MW.
- The unit is contracted for 50MW of Positive BR
- Settlement metering for SP25 (12:00 – 12:30) = 110MWh
- Settlement metering for SP26 (12:30 – 13:00) = 139.08 (2dp)MWh
- Settlement metering for SP27 (13:00 – 13:30) = 161.5MWh
- ABSVD for SP27 (13:00 – 13:30) = 5MWh

## Ramp Rates and Elbow Points:

- Run up Rate 1: 10MW/min (0 – 200)
- Run up Rate 2: 1.3MW/min (200 – 233)
- Run up Rate 3: 30MW/min (233 – 400)

Where run up Elbow 2 is 200 and Elbow 3 is 233.





## Detailed example 4 – ramp rate checks

### **Performance check (PBR) SP25, 26, 27**

#### Availability

- $MEL - FPN \geq 50MW$
- $(400 - 220) \geq 50$
- **CORRECT**

#### Time to full delivery

- Contracted quantity at Rate 2 / Run up Rate 2 + Contracted quantity at Rate 3 / Run up Rate 3 + NTO  $\leq 10$  minutes
- $(13 / 1.3) + (37 / 30) + 2 \leq 10$
- $13.2\dot{3} \leq 10$
- **INCORRECT**

#### Flexible dispatch

- $FPN \geq SEL$  (if generator)
- $220 \geq 200$
- **CORRECT**

#### **Unit revenue**

- The total PBR contracted volume of 50 is split across 2 run up rates.
- This unit has overcommitted PBR volume achievable in 10 minutes from its 220MW FPN. It would have been better off operating from an  $FPN \geq 233$  where it could take advantage of its faster ramp rates.
- The unit will not receive availability payment for the PBR contract in any of the contracted windows.

### **Performance check (PBR) SP25**

#### Utilisation

- Expected output = 0
- **NOT CHECKED**

### **Performance check (PBR) SP26**

#### Utilisation

- Settlement metering – FPN volume  $\geq$  Expected output \* 95%
- $139.08 - 110 \geq -29.08 * 0.95$
- **CORRECT**

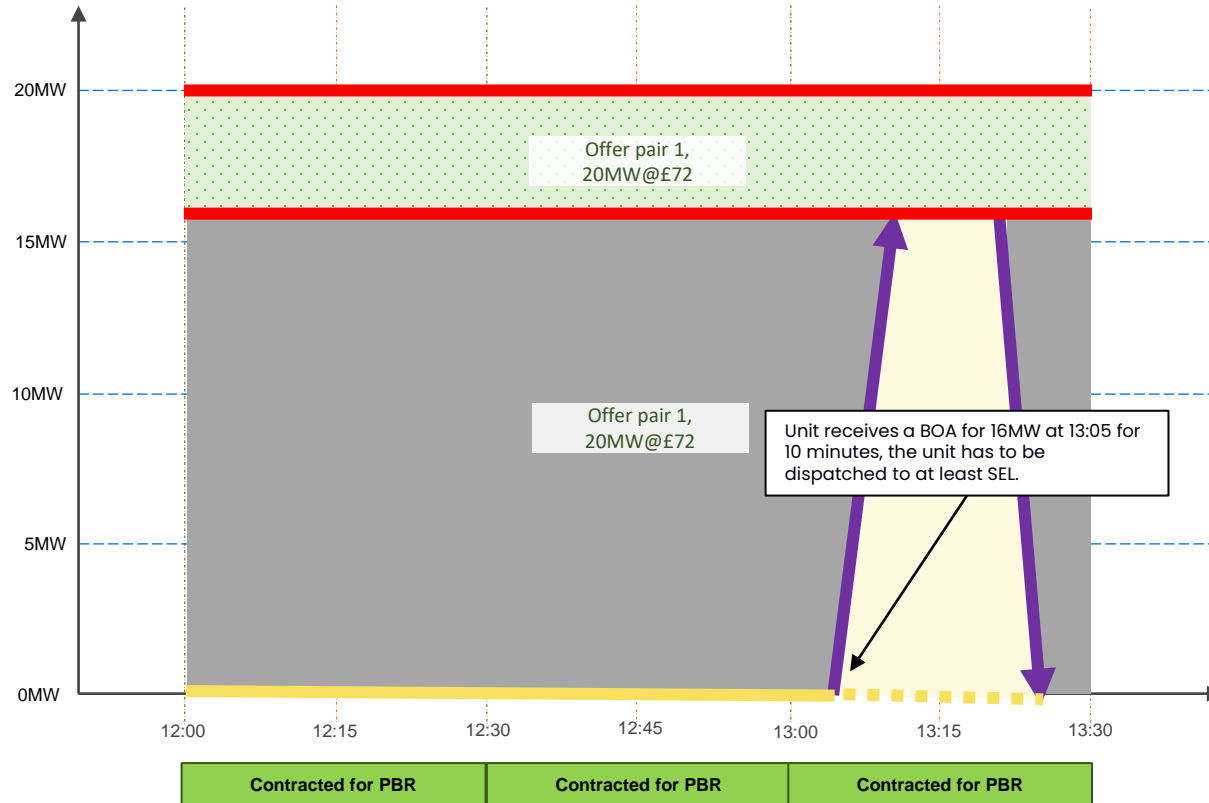
### **Performance check (PBR) SP27**

#### Utilisation

- $ABS(161.5 - (110 + 5)) \geq ABS(51.5 * 0.95)$
- **CORRECT**

**ABSVD volume has been applied to make an adjustment to the FPN volume. This removes the effect of response energy from the check.**

# Detailed example 5 – dispatch flexibility



## Unit characteristics

- This BM unit has a maximum generation capacity of 20MW and a SEL of 16MW.
- The unit has submitted a run up and run down rate of 8MW/minute.
- The unit is contracted for 10MW of Positive Balancing Reserve
- Settlement metering for SP25 (12:00 – 12:30) = 0MWh
- Settlement metering for SP26 (12:30 – 13:00) = 0MWh
- Settlement metering for SP27 (13:00 – 13:30) = 3.2MWh



## Detailed example 5– dispatch flexibility

### **Performance check (PBR) SP25, 26, 27**

#### Availability

- MEL – FPN  $\geq$  10MW
- $(20 - 0) \geq 10$
- **CORRECT**

#### Time to full delivery

- Contracted quantity / Run up Rate + NTO  $\leq$  10 minutes
- $(10 / 8) + 2 \leq 10$
- $3.25 \leq 10$
- **CORRECT**

#### Flexible dispatch

- FPN  $\geq$  SEL (if generator)
- $0 \geq 16$
- **INCORRECT**

#### **Unit revenue**

- This unit has failed the dispatch flexibility check as it cannot be dispatched incrementally between its FPN of 0MW and its SEL of 16MW. This means that the contracted reserve is not flexible.
- The unit should deliver Positive Balancing Reserve from its SEL of 16MW, it could then be incrementally dispatched between FPN=SEL=16MW and its MEL of 20MW. The maximum volume the unit could be contracted for is 4MW of Balancing Reserve.
- The unit will not receive availability payment for the PBR contract in any of the contracted windows.

### **Performance check (PBR) SP25, 26**

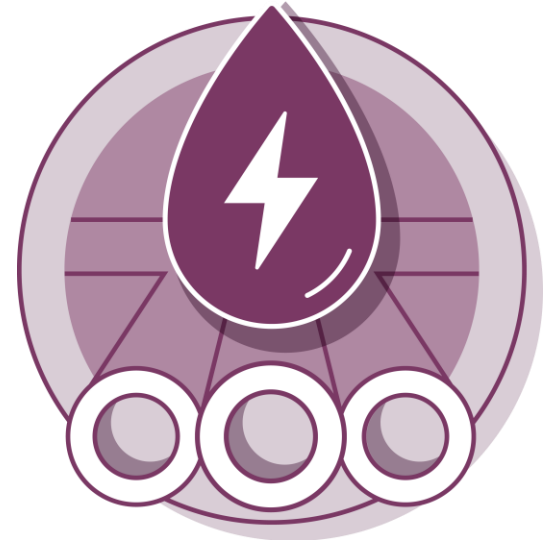
#### Utilisation

- Expected output = 0
- **NOT CHECKED**

### **Performance check (PBR) SP27**

#### Utilisation

- $3.2 - 0 \geq 3.2 * 0.95$
- **CORRECT**



## B. Acronyms

# Acronyms

ABSVD	Applicable Balancing Services Volume Data	D*	DCH, DCL, DMH, DML, DRH and DRL collectively
API	Application Program Interface	DA	Day Ahead
AVAL	Settlements Code for Availability	DCH/DCL	Dynamic Containment High/Low
BESS	Battery Energy Storage Systems	DEP	Digital Engagement Platform
BM	Balancing Mechanism	DMAT	De Minimus Acceptance Threshold
BMU	Balancing Mechanism Unit	DMH/DML	Dynamic Moderation High/ Low
BOA	Bid Offer Acceptance	DRH/DRL	Dynamic Regulation High/Low
BOD	Bid Offer Data	EAC	Enduring Auctions Platform
BR	Balancing Reserve	EBGL	European Balancing Guidelines
BSC	Balancing and Settlements Code	EDL	Electronic Data Logging
CCGT	Combined Cycle Gas Turbine	EDT	Electronic Data Transfer

# Acronyms

EFA	Electricity Forward Agreement	OBP	Open Balancing Program
EoD	Event of Default	PA	Power Available
GC	Grid Code	PN	Physical Notification
FPN	Final Physical Notification	QR	Quick Reserve
IVC	Incremental Volume Cost	SEL	Stable Export Limit
IVCP	Settlements Code for IVC Penalty	SIL	Stable Import Limit
MEL	Maximum Export Limit	SMP	Single Markets Platform
MIL	Maximum Import Level	SP	Settlement Period
MNZT	Minimum Non-Zero Time	SR	Slow Reserve
MZT	Minimum Zero Time	STOR	Short Term Operating Reserve
NTB	Notice to Bid	SW	Service Window
NTO	Notice to Offer	SEL	Stable Export Limit