

Performance Monitoring of GC0166 for Reserve Ancillary Services

Version 1.0

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Introduction

Following Ofgem’s approval of Grid Code modification GC0166, which introduces new Dynamic Parameters designed to improve utilisation of energy-limited BM units, this document explains how those changes will be reflected in NESO’s performance monitoring of Reserve ancillary services – Quick Reserve, Slow Reserve and Balancing Reserve.

This document should be read in conjunction with the published MDO/MDB Industry Best Practice Guide

1. Background

The changes introduced through GC0166 replace the historical '30-minute MEL/MIL rule'¹ for energy-limited BM units with new Dynamic Parameters as defined in Grid Code BC1.A.1.5 Dynamic Parameters;

- Maximum Delivery Offer (MDO)
- Maximum Delivery Bid (MDB)

These parameters provide a more accurate view of a unit's state of charge, whilst MEL and MIL submissions show a unit's maximum active power capability, in line with the Grid Code definitions.

The changes took effect on 25 June 2026, and all BM units must comply with GC0166 by 5 November 2026. Participants will transition to the new requirements in phases during this period.

As a result of these changes, NESO's existing Reserve performance monitoring arrangements are no longer sufficient for energy-limited BM units. In addition to current availability checks, NESO will monitor MDO and MDB submissions to assess compliance with Reserve service obligations.

¹ The 30-minute MEL/MIL rule states that battery BM units (and other energy-limited assets) should declare their MEL and MIL such that they reflect the unit's capability to follow a Bid-Offer Acceptance (BOA) from its current Physical Notification (PN), ramp to the declared MEL or MIL, sustain that output level for 30 minutes, and then return to the original PN. The declared MEL and MIL therefore provide an indication of the unit's available energy capability and should be updated as the asset's state of charge changes.

2. Additional Performance monitoring checks

All energy-limited BM Units contracted to provide a Reserve ancillary service will be monitored against the MDO/MDB Dynamic Parameters introduced under GC0166. This is in addition to NESO's existing monitoring checks, which will remain in place.

NESO will carry out the following checks to confirm contractual obligations are being met:

1. NESO will check at the start of each 30-minute contracted service period to ensure that an appropriate MDO/MDB has been submitted as part of the Dynamic Parameters/BM Unit Data for the contracted unit. We will assess the MDO/MDB submissions to establish if the unit has sufficient volume of energy to fulfil its contracted MW volume for that contracted service period.
2. NESO will monitor that, where the unit has accepted a Bid-Offer Acceptance (BOA), it has redeclared its MDO/MDB within 1 minute of that acceptance, to allow the unit to be available for further dispatch in that contracted service period.
3. Where the MDO/MDB has been redeclared, NESO will check that the unit still has sufficient volume of energy to fulfil its contracted MW volume for the remainder of that contracted service period (*accounting for any BOA energy delivered).

Failure against any of the above checks would constitute a failure to meet the unit's contractual obligations (see section 4) and would result in NESO withholding availability payment for the full contracted service period. Please refer to Appendix A for examples of the above checks.

* Note: The removal of the '30-minute MEL/MIL rule' introduces a scenario that is not currently covered by the Reserve service terms. An energy-limited BM Unit

may demonstrate, through its MDO/MDB submission, that it has sufficient energy to meet its contracted reserve volume at the start of a service period (Check 1). However, if the unit subsequently receives a BOA for a volume greater than its contracted quantity and correctly redeclares its MDO/MDB (check 2), its remaining energy may no longer be sufficient to meet the reserve contract for the rest of that contracted service period (check 3). **In these circumstances, NESO will disregard any energy shortfall that results solely from delivering the BOA. This will not be treated as a breach of the unit's contractual obligations, and NESO will waive any withholding of availability payment which would otherwise be triggered.**

3. Application of performance penalties against MDO/MDB

As Market Participants move to the new GC0166 requirements, NESO will apply a grace period from 25 June 2026 up to and beyond the 5 November 2026 implementation deadline. During this period, NESO will not withhold availability payments for failing the new MDO/MDB performance checks described in Section 2. This is to give Market Participants time to resolve any early data or implementation issues linked to the new dynamic parameters.

NESO will confirm the end date of the grace period (which will not be earlier than 5 November 2026) in advance. From that date, NESO will enforce the new MDO/MDB checks and withhold availability payments where requirements are not met.

Throughout the grace period, NESO will monitor performance against the GC0166 requirements and work with Market Participants to address any issues as early as possible. While availability payments will not be withheld during the grace period for MDO/MDB declaration or redeclaration failures, NESO reserves the right to deregister units and/or Market Participants where appropriate under the service terms.

4. Service terms obligations

The existing Reserve service terms require contracted units to hold enough energy to deliver their contracted service throughout the contracted service period.

To dispatch a BM Unit, NESO requires a valid Mandatory Availability Declaration. This includes maintaining Bid-Offer Data, Dynamic Parameters and BM Unit Data at all times. The new MDO/MDB requirements form part of these Dynamic Parameters and demonstrate that a unit has sufficient energy to deliver its contracted reserve volume.

If a unit does not hold sufficient energy, it is considered unavailable and will lose availability payments for the full contracted service period, subject to the grace period set out in Section 3.

Where a unit repeatedly fails to meet its obligations, NESO may, at its discretion and where there are reasonable grounds, deregister the unit and/or Market Participant from the Reserve service(s).

These existing obligations already support the GC0166 changes. However, NESO intends to update the service terms at the next available opportunity to provide additional clarity on the new Dynamic Parameters.

For the latest service specific Service Terms please use the following links;

[Balancing Reserve \(BR\) Service Terms](#)

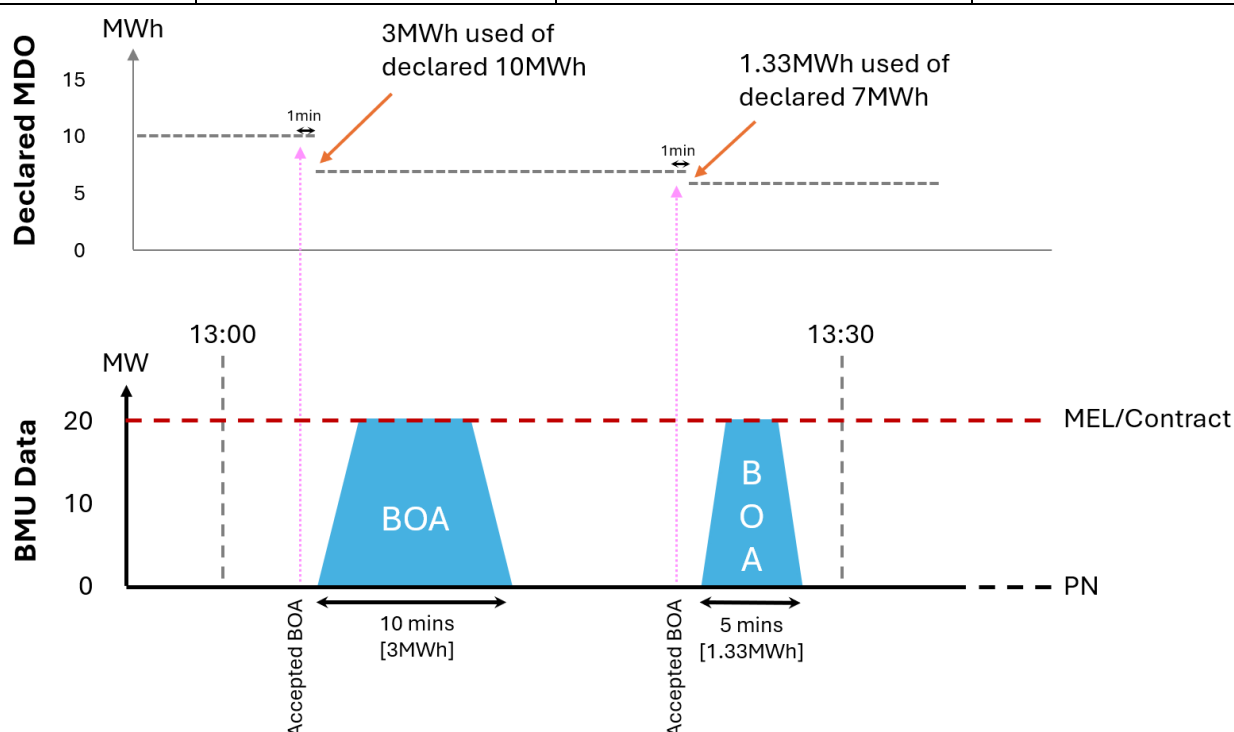
[Quick Reserve \(QR\) Service Terms](#)

[Slow Reserve \(SR\) Service Terms](#)

Appendix A – WORKED EXAMPLES

Example 1 – PASS 1

Contract	Expected min SoC	Contracted Period	Availability
20MW	10MWh	SP27 (13:00–13:30)	PASS



- At the start of the SP, the unit is assessed for its State of Charge (SoC), where a minimum of 10MWh is required. The unit declares 10MWh, as expected.
- The unit receives a BOA instruction at 13:04 to start at 13:05 for 20MW. The unit redeclares its MDO down from 10MWh to 7MWh within 1 minute of the acceptance (by 13:05), reflecting its future SoC based on the latest BOA.
- The unit later receives a second BOA at 13:21 for another 20MW starting at 13:22. The unit again updates its SoC within 1 minute of the acceptance (by 13:22) from 7MWh down to 5.67MWh, reflecting its future SoC based on the latest BOA.

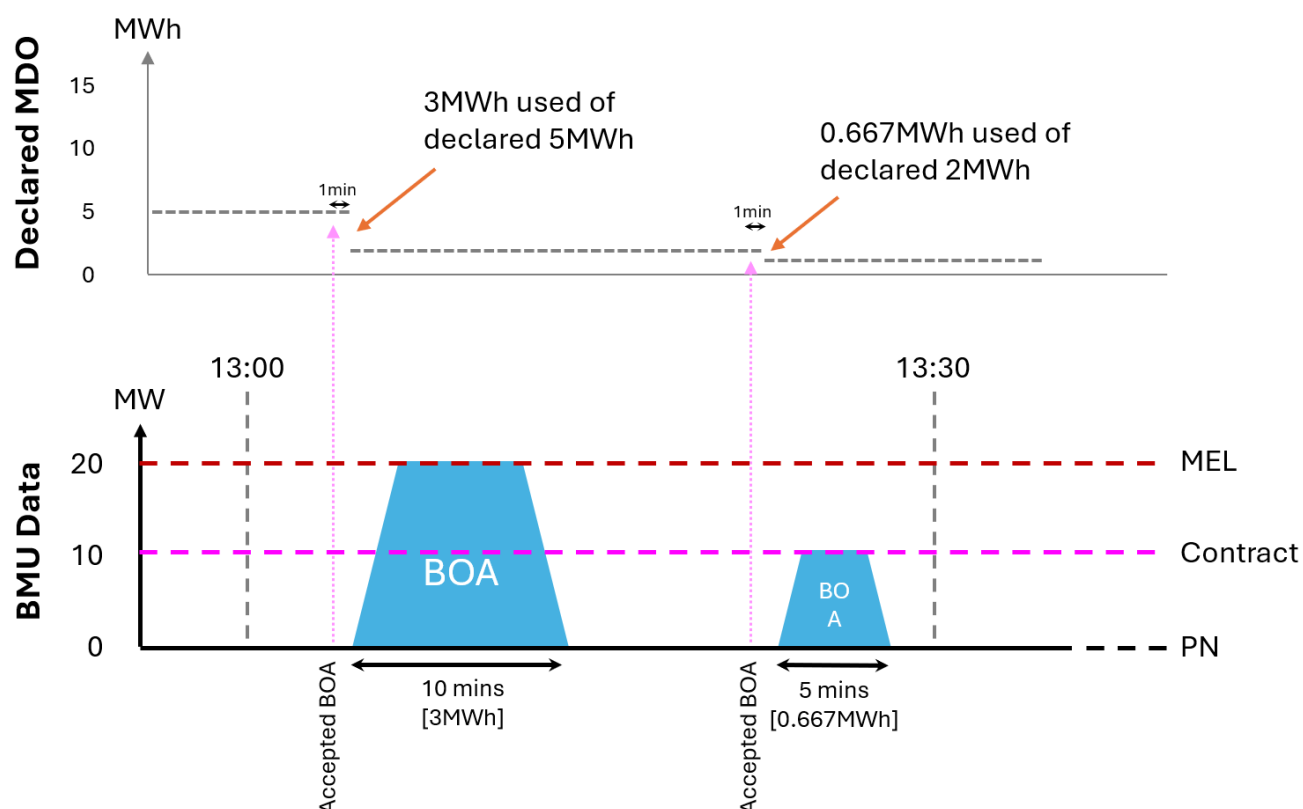
Min State of Charge: **PASS**

Redeclaration timings: **PASS**

Sufficient volume redeclaration: **PASS**

Example 2 – PASS 2

Contract	Expected min SoC	Contracted Period	Availability
10MW	5MWh	SP27 (13:00–13:30)	PASS



- At the start of the SP, the unit is assessed for its State of Charge (SoC), where a minimum of 5MWh is required. The unit declares 5MWh, as expected.
- The unit receives a BOA instruction at 13:04 to start at 13:05 for 20MW (10MW of contracted volume and an additional 10MW of offered volume). The unit redeclares its MDO down from 5MWh to 2MWh within 1 minute of the acceptance (by 13:05), reflecting its future SoC based on the latest BOA.
- The unit later receives a second BOA at 13:21 for the contracted 10MW starting at 13:22. The unit again updates its SoC within 1 minute of the acceptance (by 13:22) from 2MWh down to 1.333MWh, reflecting its future SoC based on the latest BOA.

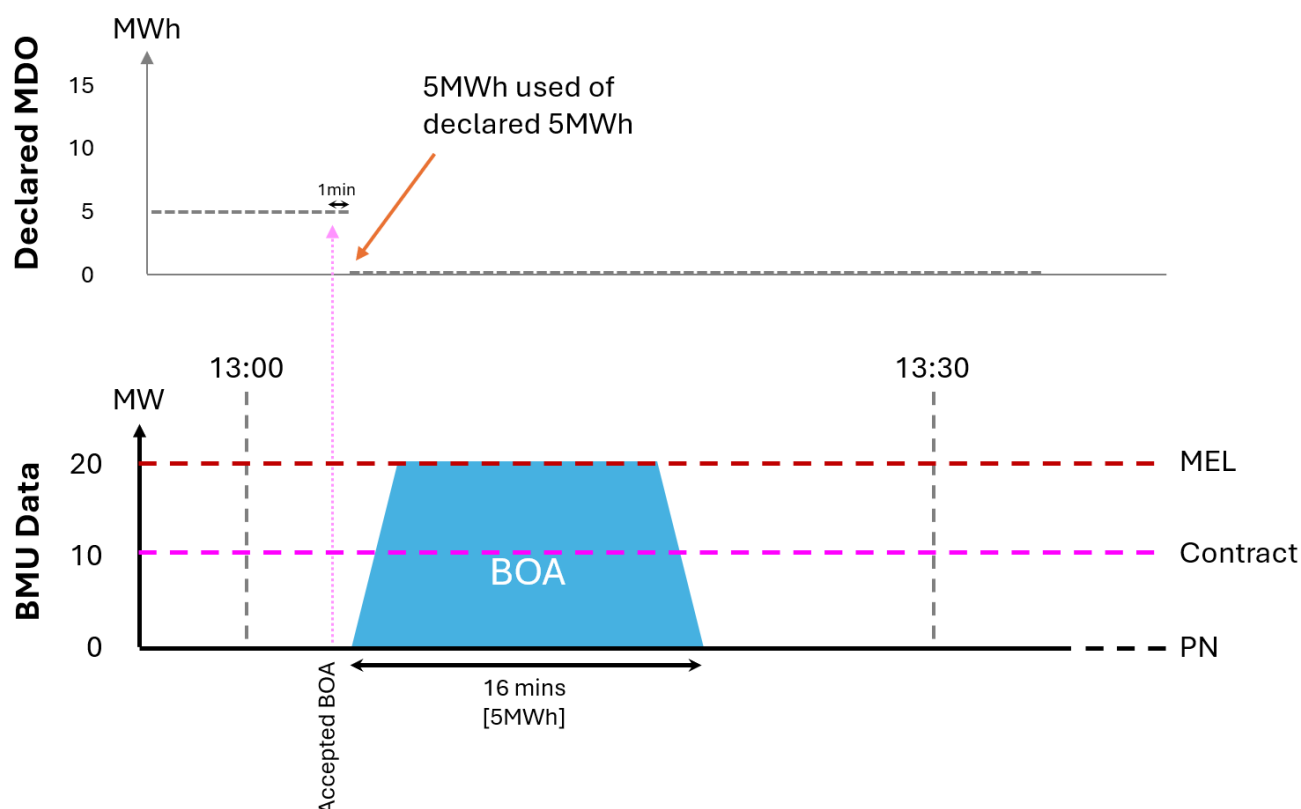
Min State of Charge: **PASS**

Redeclaration timings: **PASS**

Sufficient volume redeclaration: **PASS**

Example 3 – PASS 3

Contract	Expected min SoC	Contracted Period	Availability
10MW	5MWh	SP27 (13:00-13:30)	PASS



- At the start of the SP, the unit is assessed for its State of Charge (SoC), where a minimum of 5MWh is required. The unit declares 5MWh, as expected.
- The unit receives a BOA instruction at 13:04 to start at 13:05 for 20MW (10MW of contracted volume and an additional 10MW of offered volume). The unit redeclares its MDO down from 5MWh to 0MWh, preventing any further dispatches, within 1 minute of the acceptance (by 13:05), reflecting its future SoC based on the latest BOA.

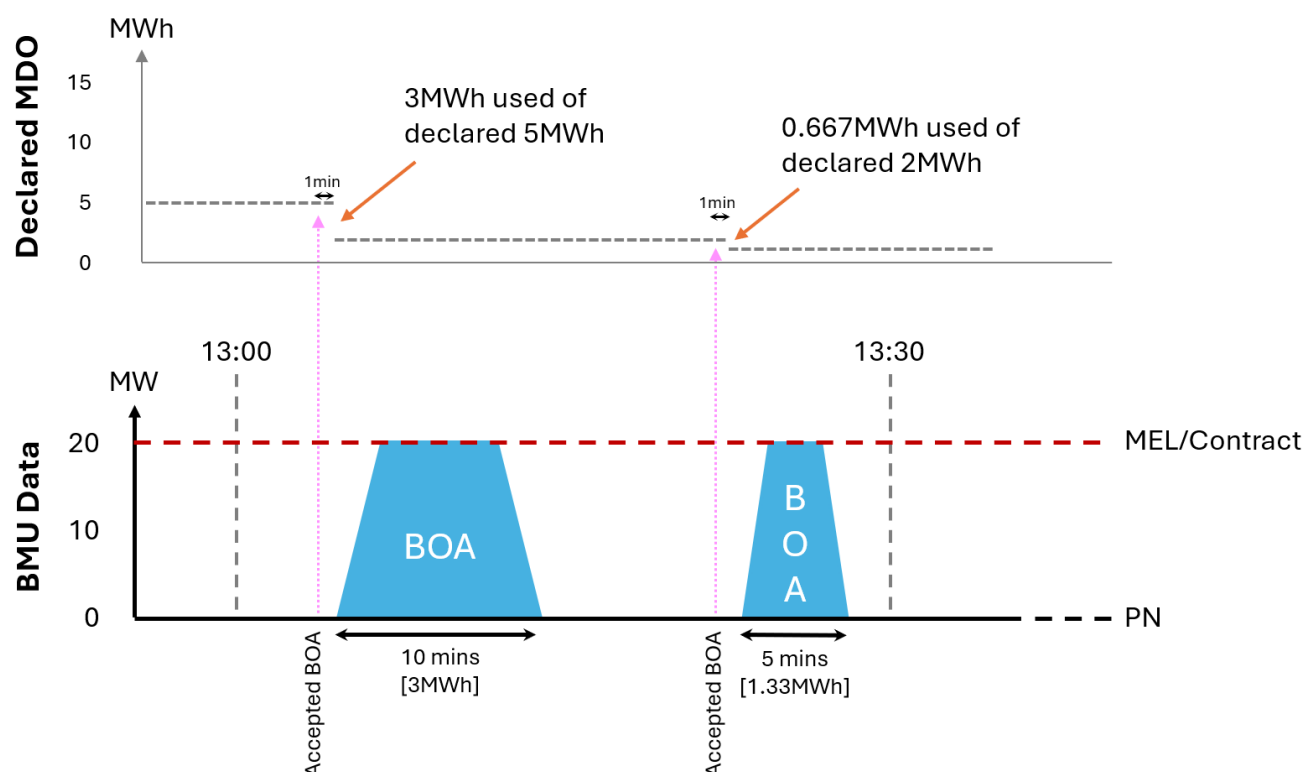
Min State of Charge: **PASS**

Redeclaration timings: **PASS**

Sufficient volume redeclaration: **PASS**

Example 4 – FAIL 1

Contract	Expected min SoC	Contracted Period	Availability
20MW	10MWh	SP27 (13:00-13:30)	FAIL



- At the start of the SP, the unit is assessed for its State of Charge (SoC), where a minimum of 10MWh is required. The unit declares 5MWh, lower than expected.
- The unit receives a BOA instruction at 13:04 to start at 13:05 for the contracted 20MW. The unit redeclares its MDO from 5MWh to 2MWh within 1 minute of the acceptance (by 13:05), reflecting its future SoC based on the latest BOA.
- The unit later receives a second BOA at 13:21 for the contracted 20MW starting at 13:22. The unit updates its SoC within 1 minute of the acceptance (by 13:22) from 2MWh to 1.333MWh, reflecting its future SoC based on the latest BOA.

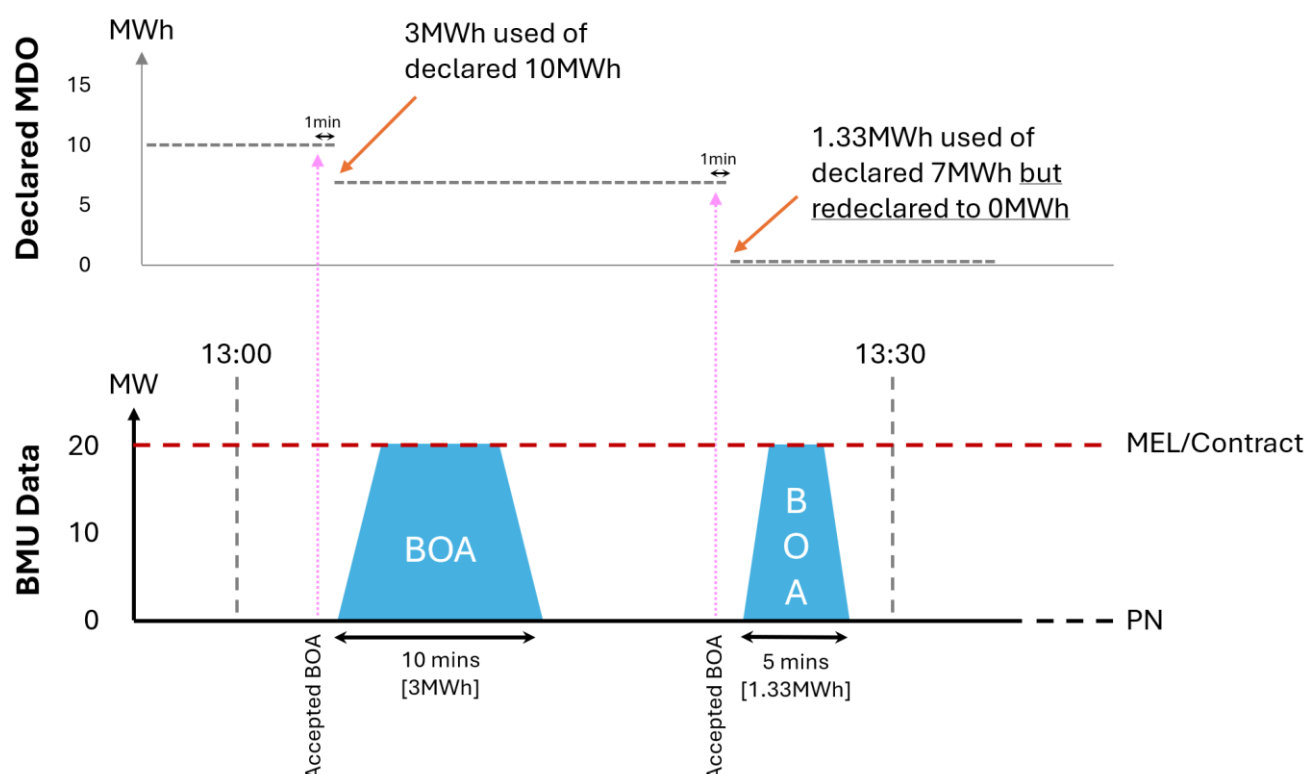
Min State of Charge: **FAIL**

Redeclaration timings: **PASS**

Sufficient volume redeclaration: **FAIL**

Example 5 – FAIL 2

Contract	Expected min SoC	Contracted Period	Availability
20MW	10MWh	SP27 (13:00–13:30)	FAIL



- At the start of the SP, the unit is assessed for its State of Charge (SoC), where a minimum of 10MWh is required. The unit declares 10MWh, as expected.
- The unit receives a BOA instruction at 13:04 to start at 13:05 for the contracted 20MW. The unit redeclares its MDO from 10MWh to 7MWh within 1 minute of the acceptance (by 13:05), reflecting its future SoC based on the latest BOA.
- The unit later receives a second BOA at 13:21 for the contracted 20MW starting at 13:22. The unit updates its SoC within 1 minute of the acceptance (by 13:22) from 7MWh to 0MWh, lower than expected, reflecting its future declared SoC

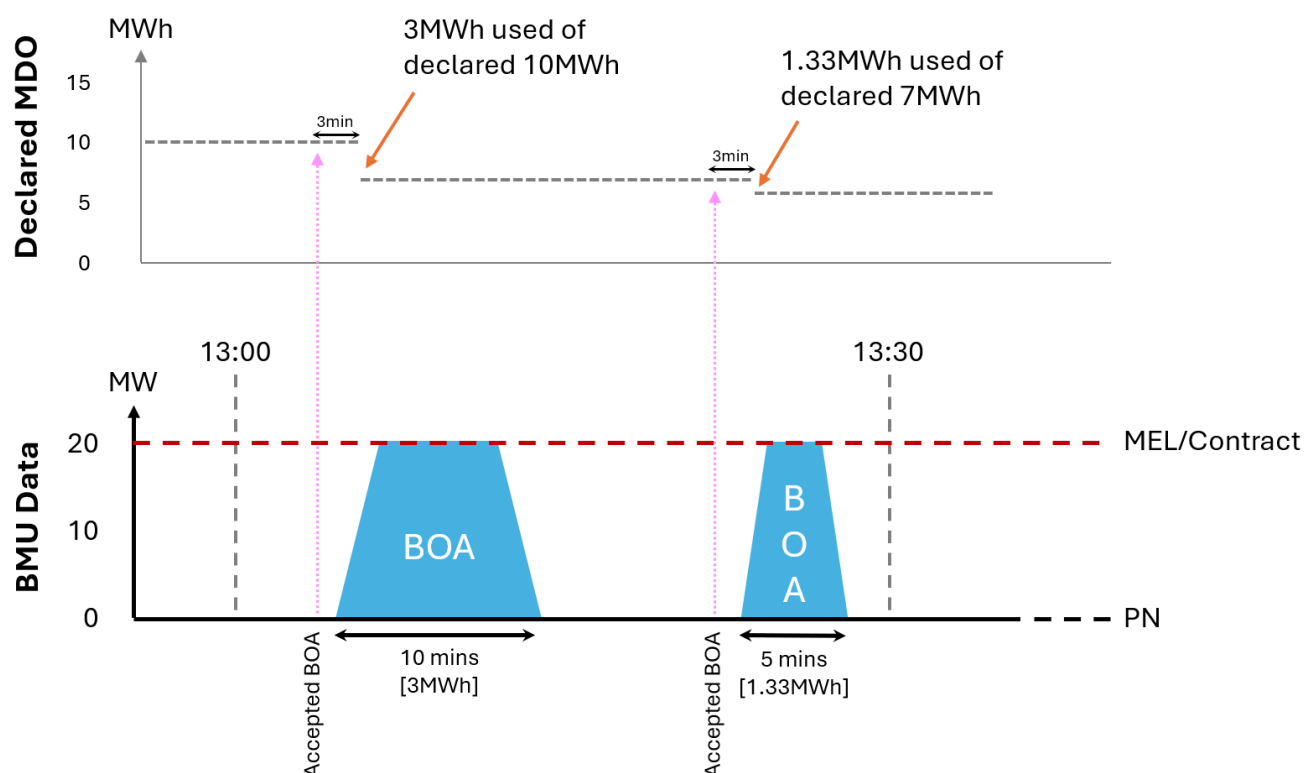
Min State of Charge: **PASS**

Redeclaration timings: **PASS**

Sufficient volume redeclaration: **FAIL**

Example 6 – FAIL 3

Contract	Expected min SoC	Contracted Period	Availability
20MW	10MWh	SP27 (13:00–13:30)	FAIL



- At the start of the SP, the unit is assessed for its State of Charge (SoC), where a minimum of 10MWh is required. The unit declares 10MWh, as expected.
- The unit receives a BOA instruction at 13:04 to start at 13:05 for the contracted 20MW. The unit redeclares its MDO from 10MWh to 7MWh 3 minutes after the acceptance (by 13:07), later than expected, reflecting its future SoC based on the latest BOA.
- The unit later receives a second BOA at 13:21 for the contracted 20MW starting at 13:22. The unit updates its SoC 3 minutes after the acceptance (by 13:24), later than expected, from 7MWh to 5.67MWh, reflecting its future SoC based on the latest BOA.

Min State of Charge: **PASS**

Redeclaration timings: **FAIL**

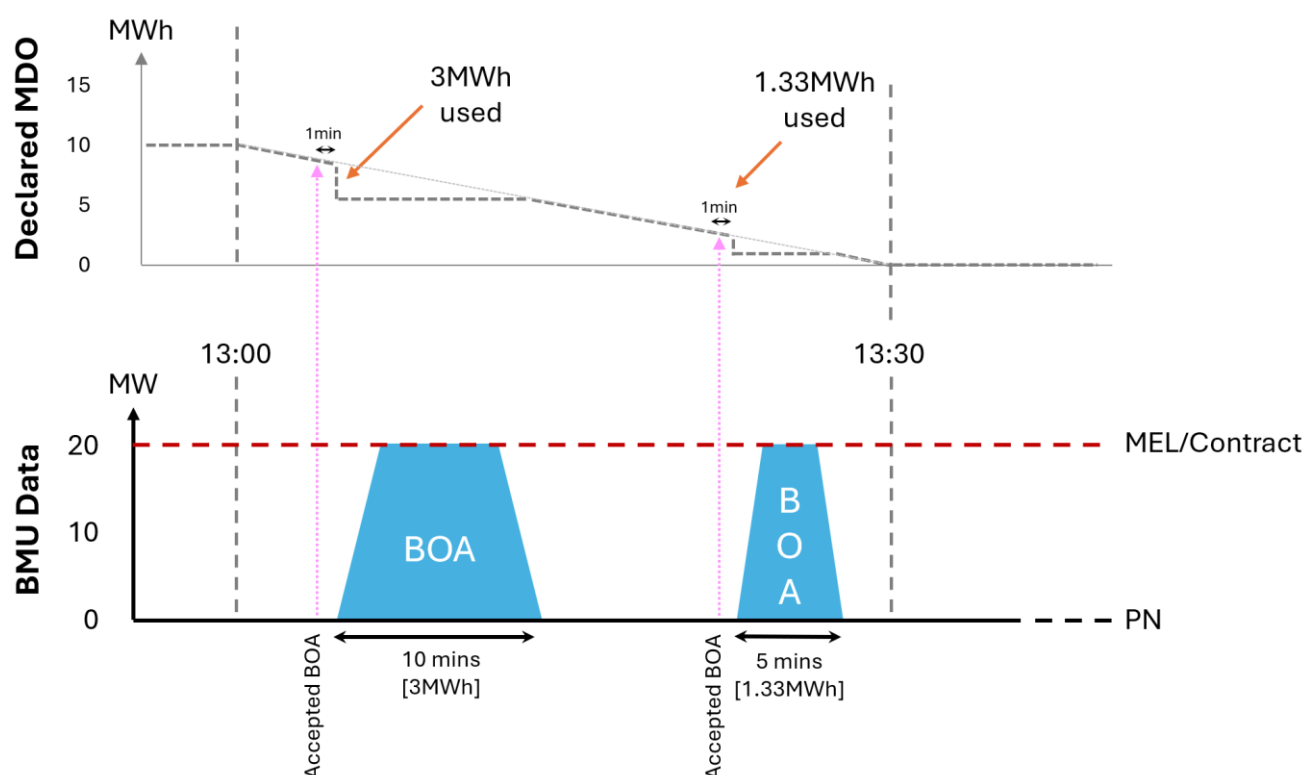
Sufficient volume redeclaration: **PASS**

Example 7 – Minimum requirement

Contract	Expected min SoC	Contracted Period	Availability
20MW	10MWh	SP27 (13:00–13:30)	PASS

The examples presented in Examples 1 to 6 demonstrate one illustrative approach to protecting energy volumes required to meet a Reserve obligation. Providers may choose to submit alternative MDO profiles, provided that the declared profile continues to accurately represent the unit's physical capability and maintains sufficient energy availability to satisfy the contracted service requirement.

One such alternative approach is illustrated below, where the minimum requirement is met through a decaying profile over time. BOAs are reflected through updates to the MDO declaration via plateaus in order to meet the minimum energy requirement.



- At the start of the SP, the unit is assessed for its State of Charge (SoC), where a minimum of 10MWh is required. The unit declares 10MWh, as expected.
- The unit receives a BOA instruction at 13:04 to start at 13:05 for 20MW. The unit redeclares its MDO down from 8.33MWh to 5.33MWh within 1 minute of the acceptance (by 13:05), which plateaus until 13:14, reflecting its future SoC based on the latest BOA.

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- The unit later receives a second BOA at 13:21 for 20MW starting at 13:22. The unit updates its SoC within 1 minute of the acceptance (by 13:22) from 2.67MWh down to 1.34MWh, which plateaus until 13:26, reflecting its future SoC based on the latest BOA.

Min State of Charge: **PASS**

Redeclaration timings: **PASS**

Sufficient volume redeclaration: **PASS**