ESO Reserve Reform
Quick Reserve & Slow Reserve

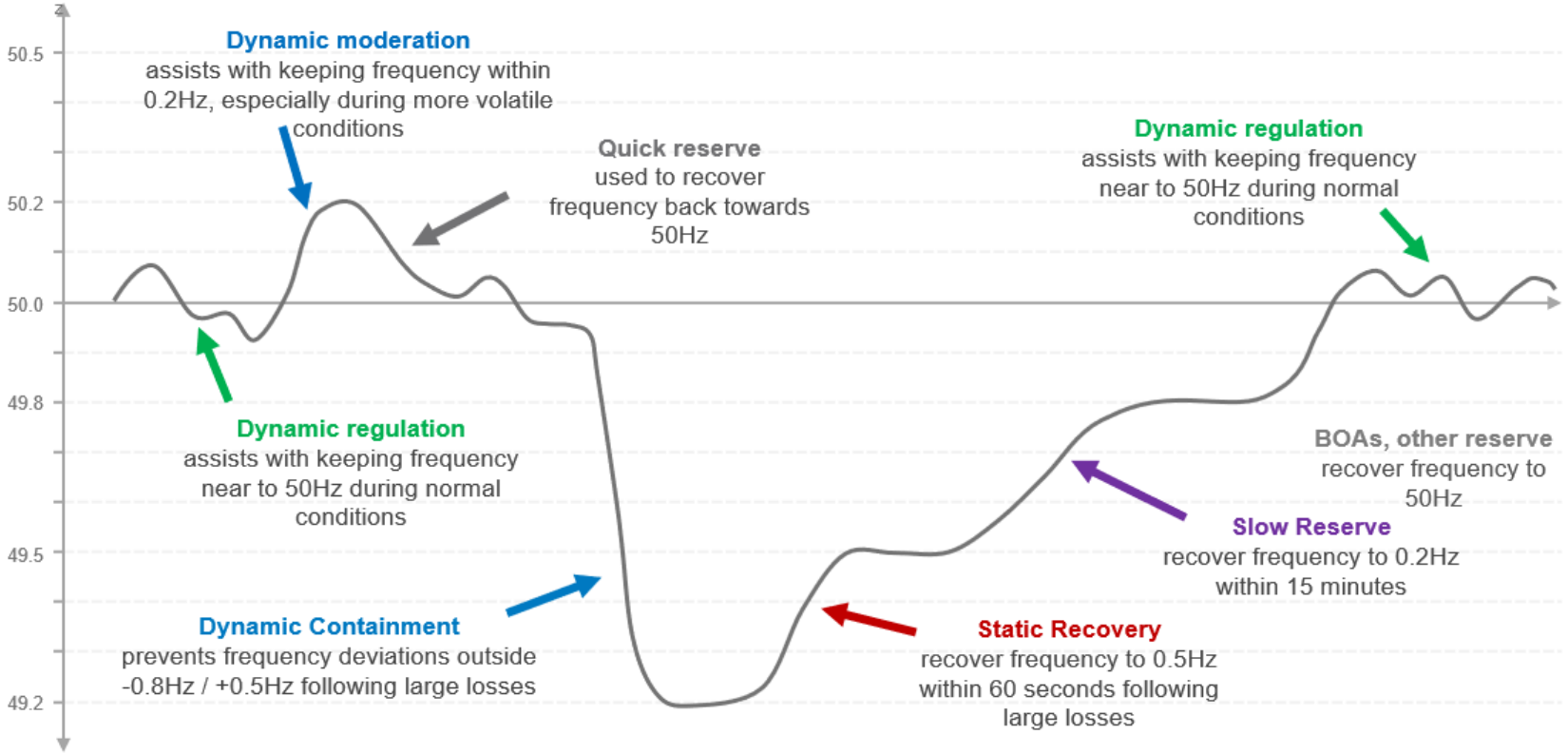
19 December 2023

- The webinar will start shortly
- Please make sure your microphone is muted and your camera is turned off

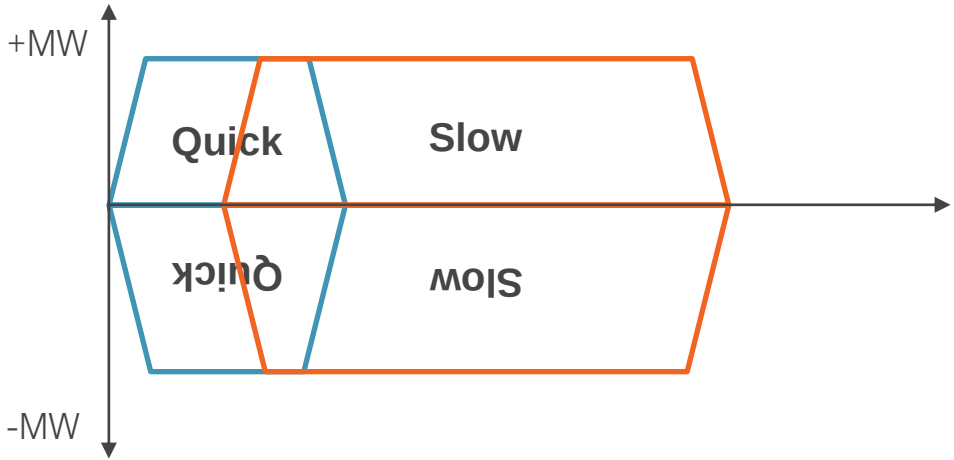
ESO

Contents

Use of Quick and Slow Reserve



Proposed new reserve products



Quick Reserve

Full output within 1 minute from instruction.

Up to 5-minute minimum activation time

15-minute maximum activation time

Slow Reserve

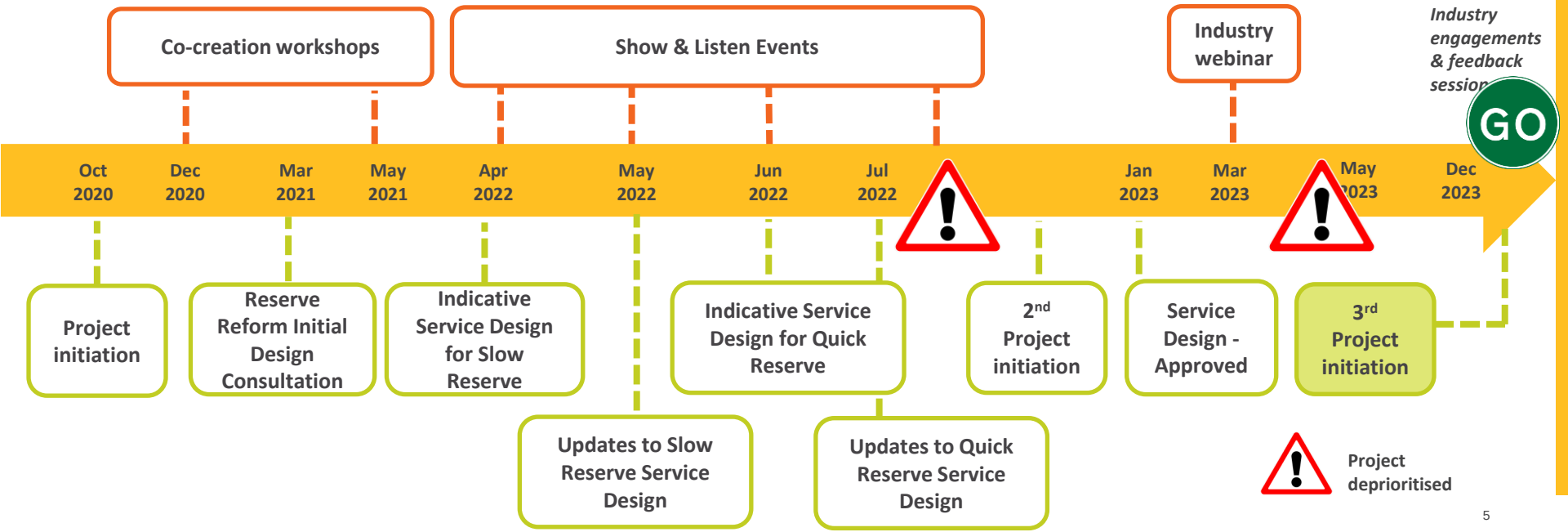
Full output within 15 minutes

Up to 30-minute minimum activation time

120-minute maximum activation time

Background

- Response & Reserve Roadmap December 2019 - Reserve Reform Project Initiation October 2020
- Lots of engagement and service design development have since taken place with industry and Ofgem
- Go live has been delayed twice; as a consequence of reprioritisation in reaction to world events and IT challenges



Technology Considerations

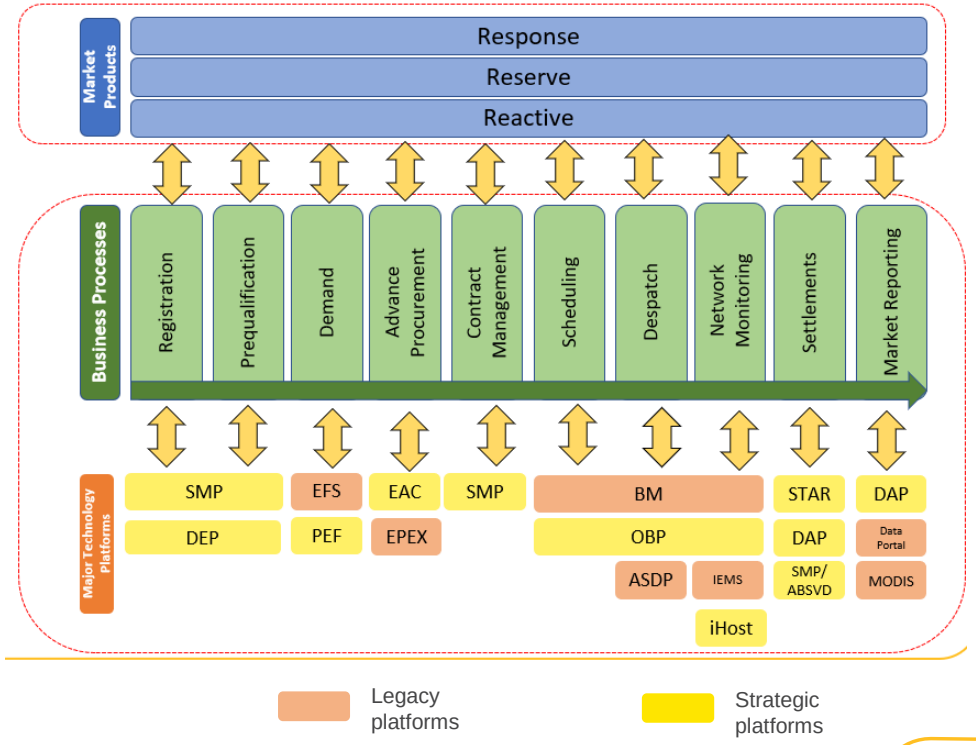
We are currently transforming our digital estate so have to consider the need to implement change alongside the roadmaps for replacing our legacy systems

When launching a new markets product, consideration is required of how the end to end customer journey, business processes and supporting platforms are impacted.

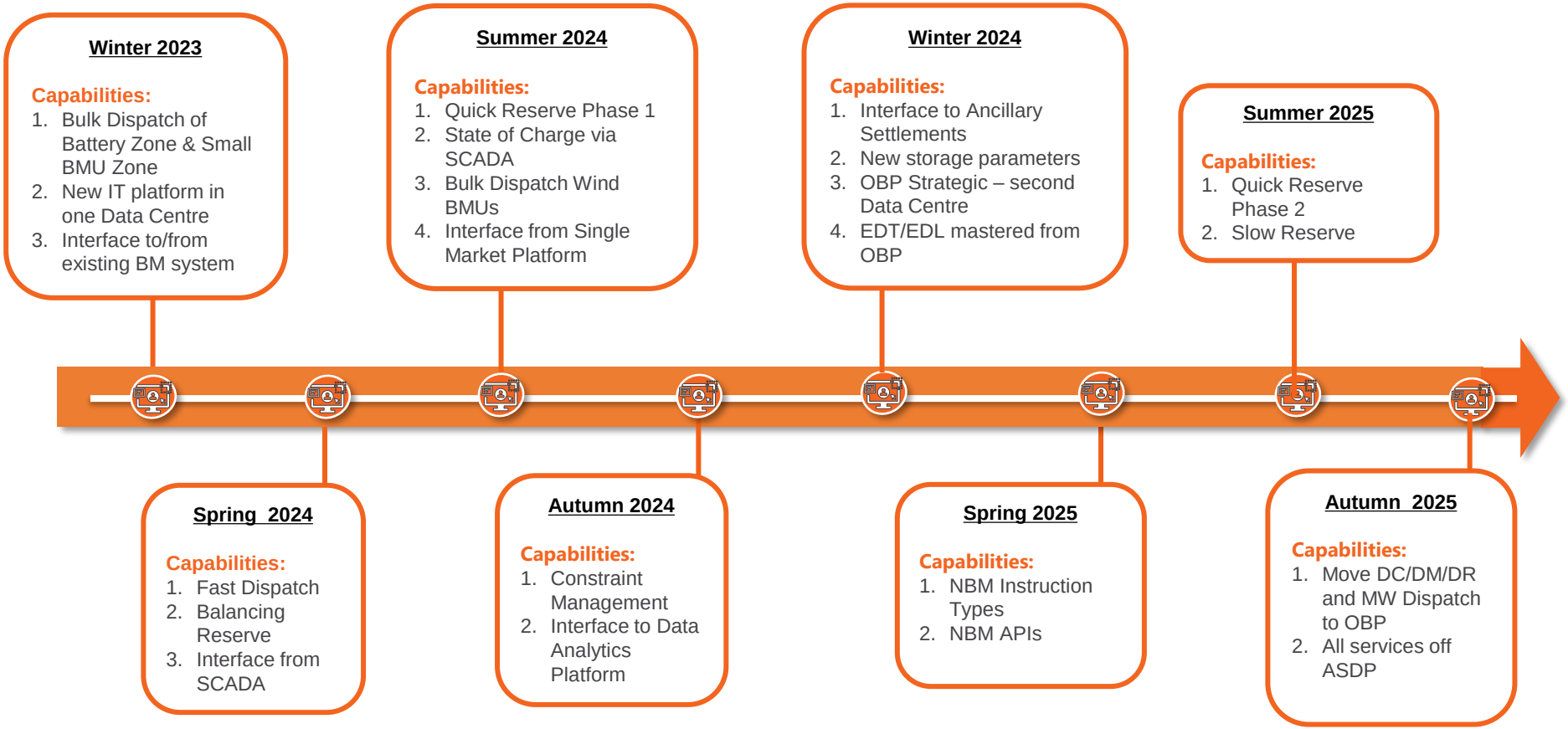
A decision was made in May 23 following assessment of the detailed system requirements for delivering Reserve services, to pause and re-evaluate a delivery path on the Open Balancing Platform. The main drivers for this were:

- Complexity of Service Design
- Operational constraints on ENCC users
- Considerable time and cost to implement on platforms being phased out vs investment on strategic intuitive solutions

A technology delivery plan has now been developed aligned to the OBP roadmap



Open Balancing Platform Release Plan timeline



Proposed Implementation

- We recognise that participants want to see reserve services delivered as soon as possible
- There is a balance to be struck between fast implementation for consumer and industry value and delivering enduring solutions

Phase 1:

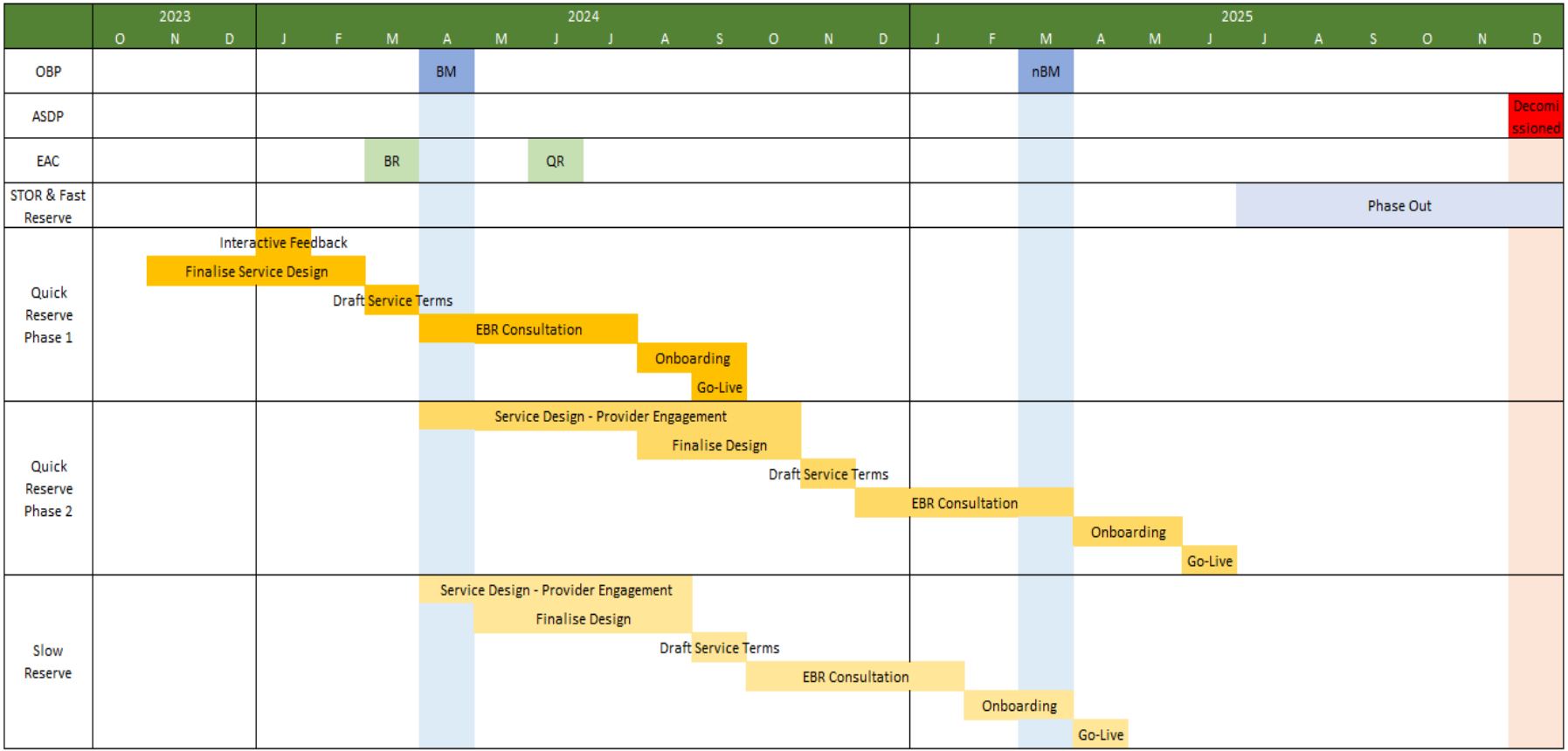
We are proposing that Quick Reserve is delivered in 2024, with participation enabled through our existing BM legacy systems in combination with OBP multi-dispatch. Providers will be able to participate by going through the BM registration process & following BM operational requirements to be able to access these systems. Practically this means that providers will need to be or become Balancing Mechanism Units to provide the service initially. We are proposing this accelerated version as there is currently not a firm market for a similar service.

Phase 2:

In parallel, we will continue to develop OBP to enable functionality to dispatch and monitor non-BM units. This will enable another route to market for assets to use in addition to the BM route.

As we have a liquid day ahead market for STOR in place, we are proposing to deliver Slow Reserve in line with OBP in 2025 and use OBP to enable the non-BM route for Quick Reserve at that time as well.

Delivery Plan



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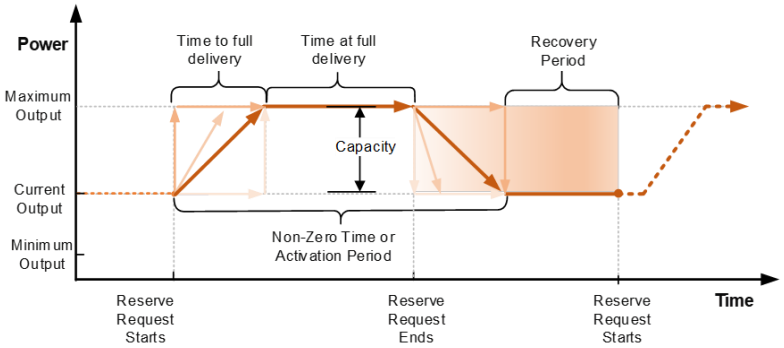
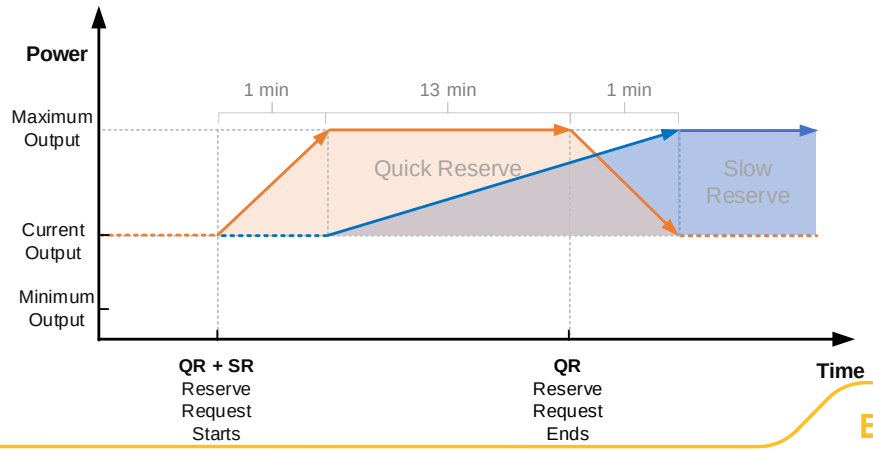
Quick Reserve

- Negative Quick Reserve (NQR) and Positive Quick Reserve (PQR).
- Standardised parameters and minimising barriers to entry.
- Replacement of the legacy Fast Reserve service.
- Manually activated and aiming at anticipating or reacting to pre-fault disturbances to restore the energy imbalance quickly to maintain frequency close to 50.0 Hz.
- Delivered in two phases:
  - Phase 1: Dispatch via BOAs
  - Phase 2: Dispatch via BOAs and OBP NBM platform instructions





Quick Reserve – Proposed Technical & Procurement Service Design (Phase 1)

Technical Design Element	Quick Reserve Proposal
Direction	Positive and Negative
Minimum Contract Size	1 MW
Time to full delivery	1 minutes from instruction
Maximum Activation Period	At least 15 minutes
Minimum Activation Period	Not greater than 5 minutes
Maximum Recovery Period	3 minutes
Energy Requirement	Unit must be able to deliver the full contracted capacity per Service Window
Operational Metering	1 Hz
Dispatch mechanism	**BOAs via EDL/EDT or wider access equivalent and control/system telephony as alternative dispatch solution during contracted windows**
Notice to Start Ramping	**0 minutes**
Ramp rates	No maximum ramp up or ramp down rates Minimum ramp-up and ramp-down rate to be in line with Time to Full Delivery.
Performance Metering	**30 minutes using settlement operational data**
Performance Monitoring	Time to Full Delivery, Availability and Utilisation - Penalties for over (>120%) and under (95%) delivery
Baselining	As per BM – Physical Notifications 24 hours in advance, final at 60 mins ahead of Settlement Period. Both zero and non-zero baselines
Aggregation	Yes, per GSP group
Passing through zero	Yes

Procurement Design Element	Quick Reserve Proposal
Service Window	**30 minutes blocks**
Maximum Bid Size	300 MW
Frequency of Procurement	Daily – Firm procurement Within day – optional procurement
Locationality	National
Auction Platform	EAC
Auction Timing	Results by D-1 14:30
Stacking & Splitting	Same MW cannot be sold twice For a given Service Window, splitting only allowed between Positive & Negative QR Stacking with CM, stability and voltage services
Bid Sizing	Above or equal 1MW
Linking of bids	Yes, by Service Window and Product (Positive QR and Negative QR only)
Bid Curtailment Rules	User defined
Payment Structure	Firm: Availability + Utilisation Optional: Utilisation only
Payment Mechanism	Availability: Pay-as-Clear Utilisation: Pay-as-Bid through BOAs

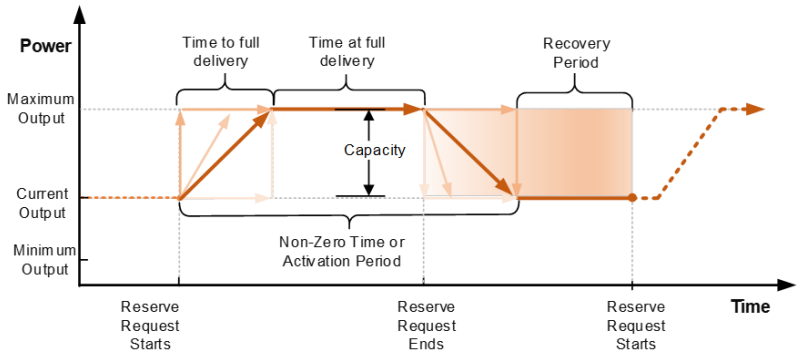
Quick Reserve – Enduring Service Design (Phase 2)

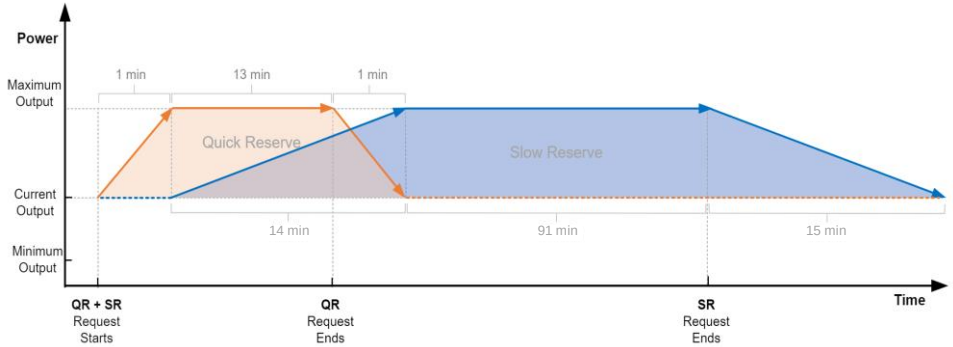
- Key changes from Phase 1 to Phase 2 service design includes NBM dispatch mechanism through the new OBP platform as well as BOAs.
- We expect all providers to continue submitting operational information in advance, before and after contracted service windows and those information can include: providers availability, dynamic parameters, prices, metering with 1Hz resolution & location.

Service Design Element	Quick Reserve Proposal for Phase 2
Dispatch mechanism	BOAs via EDL/EDT or wider access equivalent **or OBP NBM platform dispatch instruction** and control/system telephony as alternative dispatch solution during contracted windows
Operational Data Requirements	**All providers to submit operational data before and after service windows**
Baselining	**Physical Notifications or equivalent 24 hours in advance for all providers** final at 60 mins ahead of Settlement Period Both zero and non-zero baselines
Payment Mechanism	Availability: Pay-as-Clear Utilisation: Pay-as-Bid through BOAs **or OBP dispatch mechanism**
Performance Metering	**1-sec or 1Hz performance metering**
Ramp rates for baseline	**Yes – rate to be confirmed**
Auction Timing	Results by D-1 **09:00 am**
Stacking & Splitting	Same MW cannot be sold twice For a given Service Window, splitting allowed between Positive & Negative QR & **Response (DC, DM & DR) services** Stacking with CM, stability and voltage services

Slow Reserve

- Negative Slow Reserve (NSR) and Positive Slow Reserve (PSR).
- Standardised parameters and minimising barriers to entry.
- Replacement of the legacy STOR service.
- Covering 24 hours of operation.
- Manually activated and aiming at reacting to post-fault disturbances to restore the energy imbalance quickly to +/- 0.2 Hz from nominal within 15 mins of a loss event.
- Delivered in single phase in 2025.





Slow Reserve - Service Design

Technical Design Element	Slow Reserve Proposal
Direction	Positive and Negative
Minimum Contract Size	1 MW
Time to full delivery	15 minutes from instruction
Maximum Activation Period	At least 120 minutes
Minimum Activation Period	Not greater than 30 minutes
Maximum Recovery Period	30 minutes
Energy Requirements	Unit must be able to deliver the full contracted capacity per contracted period
Operational Metering	1 Hz
Dispatch mechanism	BOAs via EDL/EDT or wider access equivalent or **OBP NBM platform** dispatch instruction and control/system telephony as alternative dispatch solution during contracted windows
Notice to Start Ramping	Up to 2 minutes
Ramp rates	Max ramp rates ≤100% contracted capacity/minute. For max instantaneous ramp rates, unit cannot deliver >50% contracted capacity in any 30s ramping period. Min ramp-up and ramp-down rate to be in line with Time to Full Delivery, incl. notice to start ramping
Performance Metering	1-sec or 1Hz performance metering
Performance Monitoring	Time to Full Delivery, Availability, Ramp rates and Utilisation - Penalties for over (>120%) and under (95%) delivery
Baselining	**Physical Notifications or equivalent 24 hours in advance for all providers** final at 60 mins ahead of Settlement Period. Both zero and non-zero baselines
Aggregation	Yes, per GSP group
Operational data requirements	**All providers to submit operational data before and after service windows**
Passing through zero	Yes

Procurement Design Element	Slow Reserve Proposal
Service Windows	**30-minutes or 2-hours** Expected 2-hour availability when dispatched
Maximum Bid Size	N/A
Frequency of Procurement	Daily – Firm procurement Within day – optional procurement
Locationality	National
Auction Platform	EAC
Auction Timing	**Results by D-1 09:00am**
Stacking & Splitting	Same MW cannot be sold twice Facilitate splitting/stacking where system and performance monitoring rules allow
Bid Sizing	Above or equal 1MW
Linking of bids	Yes, by Service Window and Product (Positive SR and Negative SR only)
Bid Curtailment Rules	User defined
Payment Structure	Firm: Availability + Utilisation Optional: Utilisation only
Payment Mechanism	Availability: Pay-as-Clear Utilisation: Pay-as-Bid through BOAs **or OBP dispatch mechanism**

Next Steps.

- Feedback from today's webinar – send by email: box.futureofbalancingservices@nationalgrideso.com
- Industry Interactive Webinar Focusing on Quick Reserve (BM) Service Design Late January 2024
- Finalise Quick Reserve (BM) Service Design Late February 2024
- A18 Consultation End March 2024
- Industry engagement on Slow/Quick (NBM) Service Design spring 2024

Q&A