Reserve Reform Show & Listen #4

12 July 2022

Agenda

I. Review of Show & Listen 3

II. Focus topics:

    1. Minimum Activation Period
    2. Recovery Period
    3. Performance Monitoring
    4. Energy Requirements

III. Slow & Quick Reserve – overview

    I. Technical design
    II. Procurement design

IV. Close down

How to engage

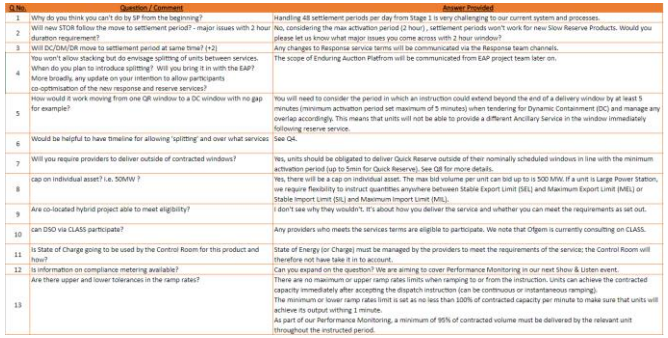
- We will be using Mural to gather detailed feedback.
- If you have a clarification, question or discussion point, please use the "*raise your hand*" function in MS Teams and wait to be called.
- We will be recording the session in order to make sure we capture all feedback, this will not be published or shared.


Recap of Show & Listen 3

Recap of Show & Listen 3

- We shared initial proposal for two new Quick Reserve products – Positive Quick Reserve and Negative Quick Reserve.
- Key discussion points included our proposals for time to full delivery, recovery period, activation period and ramping envelope. We addressed your feedback points on the Q&A document, which can be located using the link below.

Slides



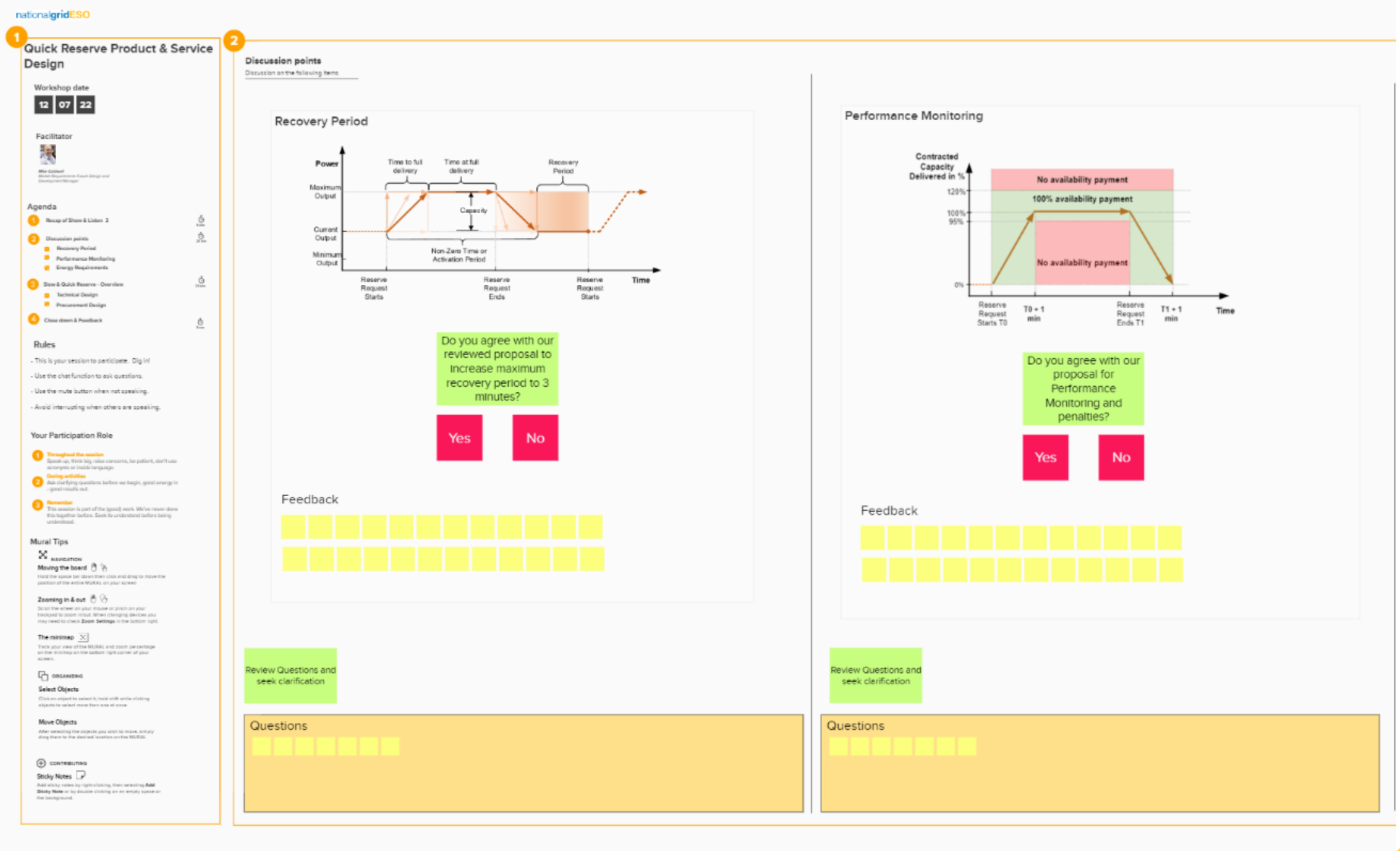
Q No.	Question / Comment	Answer Provided
1	Why do you think you can't do by SP from the beginning?	Handling 48 settlement periods per day from Stage 1 is very challenging to our current system and processes.
2	Will new STOR follow the move to settlement period? - major issues with 2 hour duration requirement?	No, considering the max activation period (2 hour) , settlement periods won't work for new Slow Reserve Products. Would you please let us know what major issues you come across with 2 hour window?
3	Will DC/DM/DR move to settlement period at same time? (+2)	Any changes to Response service terms will be communicated via the Response team channels.
4	You won't allow stacking but do envisage splitting of units between services. When do you plan to introduce splitting? Will you bring it in with the EAP? More broadly, any update on your intention to allow participants co-optimisation of the new response and reserve services?	The scope of Enduring Auction Platfrom will be communicated from EAP project team later on.
5	How would it work moving from one QR window to a DC window with no gap for example?	You will need to consider the period in which an instruction could extend beyond the end of a delivery window by at least 5 minutes (minimum activation period set maximum of 5 minutes) when tendering for Dynamic Containment (DC) and manage any overlap accordingly. This means that units will not be able to provide a different Ancillary Service in the window immediately following reserve service.
6	Would be helpful to have timeline for allowing 'splitting' and over what services	See Q4.
7	Will you require providers to deliver outside of contracted windows?	Yes, units should be obligated to deliver Quick Reserve outside of their nominally scheduled windows in line with the minimum activation period (up to 5min for Quick Reserve), See Q8 for more details.
8	cap on individual asset? i.e. 50MW ?	Yes, there will be a cap on individual asset. The max bid volume per unit can bid up to is 500 MW. If a unit is Large Power Station, we require flexibility to instruct quantities anywhere between Stable Export Limit (SEL) and Maximum Export Limit (MEL) or Stable Import Limit (SIL) and Maximum Import Limit (MIL).
9	Are co-located hybrid project able to meet eligibility?	I don't see why they wouldn't. It's about how you deliver the service and whether you can meet the requirements as set out.
10	can DSO via CLASS participate?	Any providers who meets the services terms are eligible to participate. We note that Ofgem is currently consulting on CLASS.
11	Is State of Charge going to be used by the Control Room for this product and how?	State of Energy (or Charge) must be managed by the providers to meet the requirements of the service; the Control Room will therefore not have take it in to account.
12	Is information on compliance metering available?	Can you expand on the question? We are aiming to cover Performance Monitoring in our next Show & Listen event.
13	Are there upper and lower tolerances in the ramp rates?	There are no maximum or upper ramp rates limits when ramping to or from the instruction. Units can achieve the contracted capacity immediately after accepting the dispatch instruction (can be continuous or instantaneous ramping). The minimum or lower ramp rates limit is set as no less than 100% of contracted capacity per minute to make sure that units will achieve its output withing 1 minute. As part of our Performance Monitoring, a minimum of 95% of contracted volume must be delivered by the relevant unit throughout the instructed period.

Q&A document

Quick Reserve – Focus topics

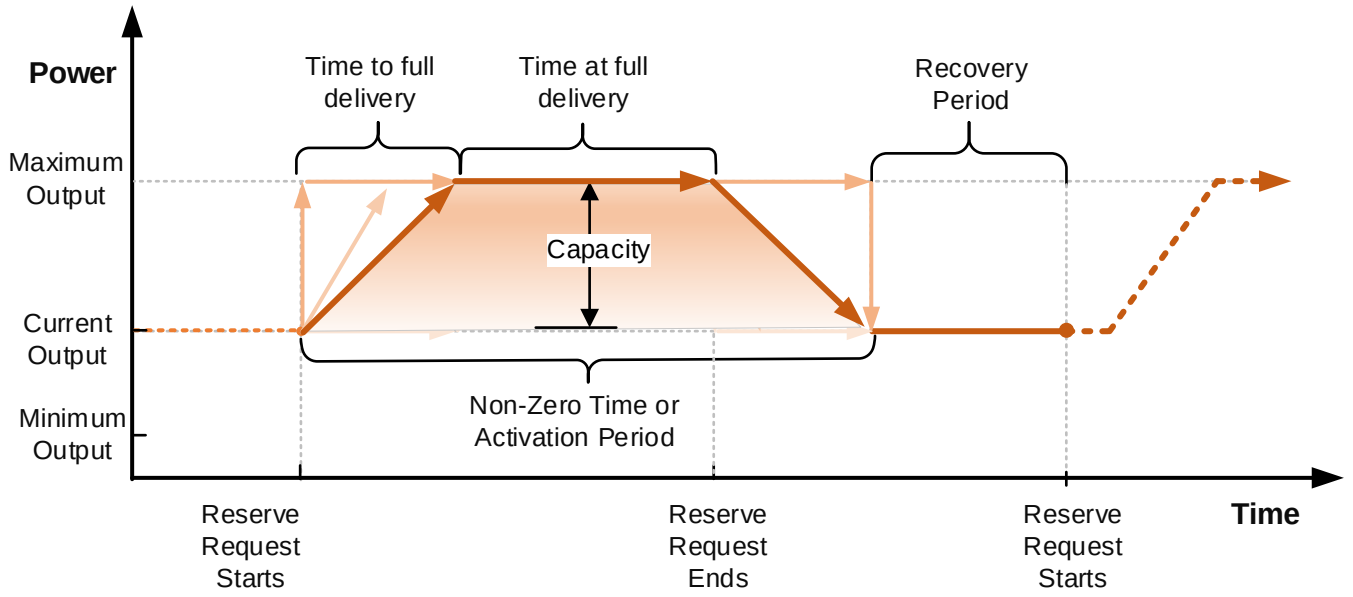
Mural

How to use Mural for live feedback in this event?



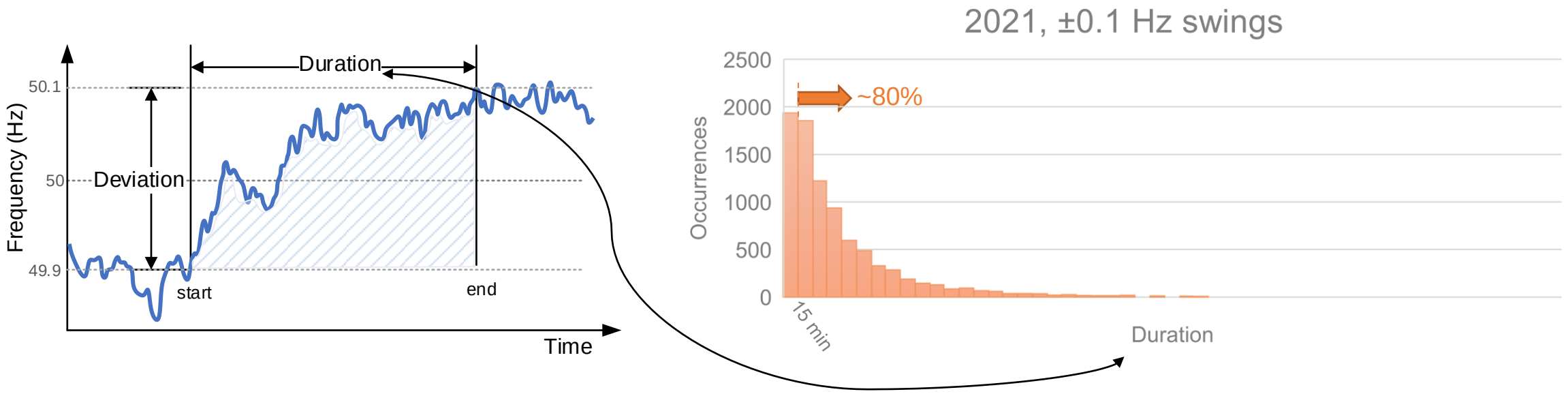
Minimum Activation Period

- This refers to the minimum duration for which an instruction can be issued, as specified by providers. The upper limit for this parameter is **5 minutes**.



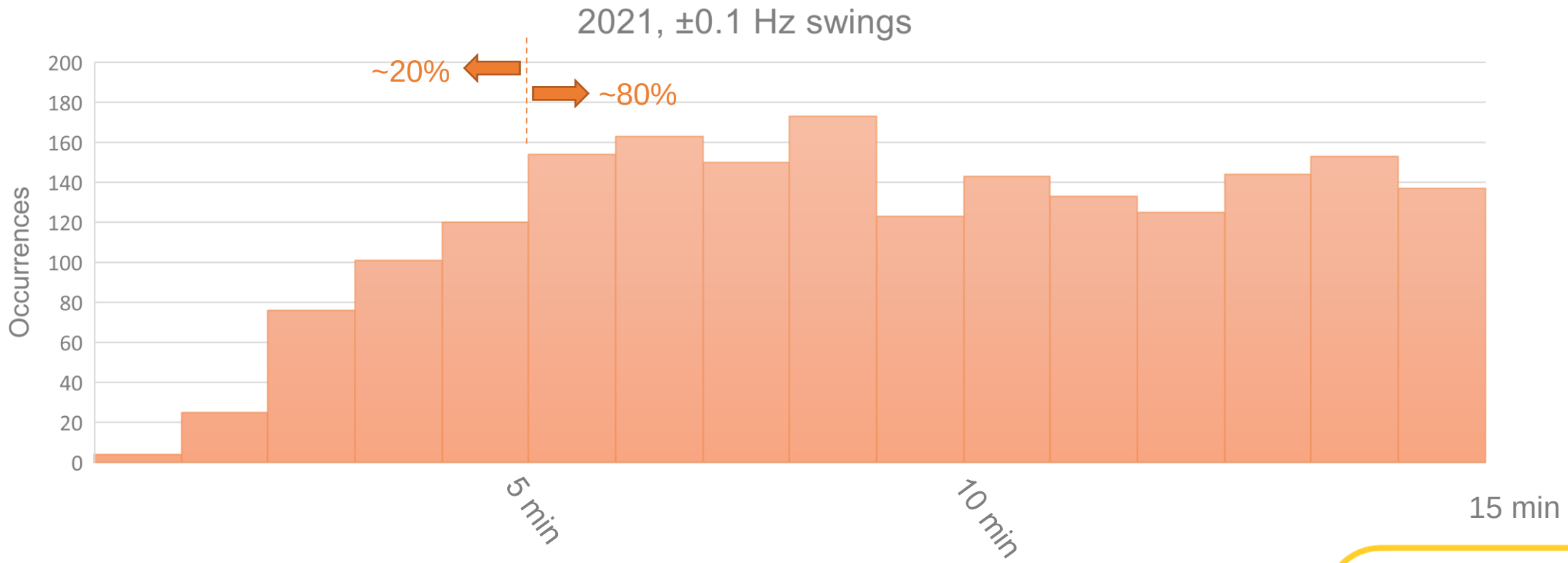
Minimum Activation Period

- To specify this parameter we looked at the number and duration of frequency swings, e.g. 49.9 Hz to 50.1 Hz (see figure below).
- Swings with durations over 15 minutes were discarded as unlikely to be linked.
- Around 8742 swings of ±0.1 Hz for 2021. About 1924 less than 15 minutes.



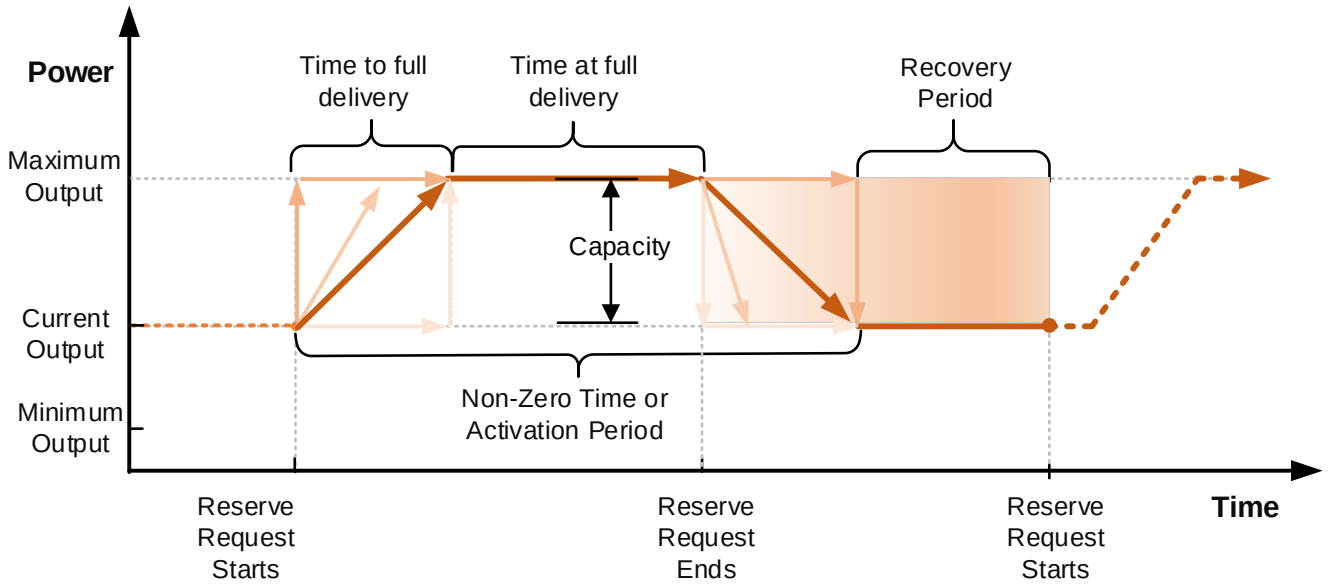
Minimum Activation Period

- Only around 20% of ±0.1 Hz swings (~330 per year) are less than 5 minutes.
- Minimum Activation Period **up to 5 minutes** has the potential to shorten the duration of the remaining 80% of swings.



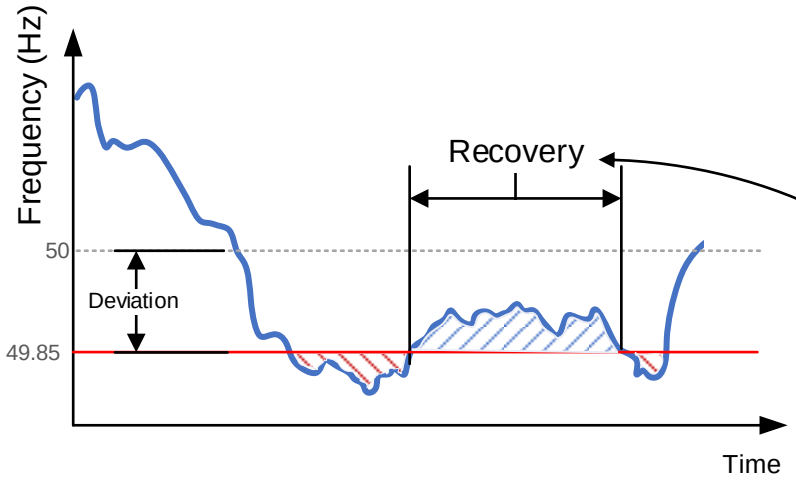
Recovery Period

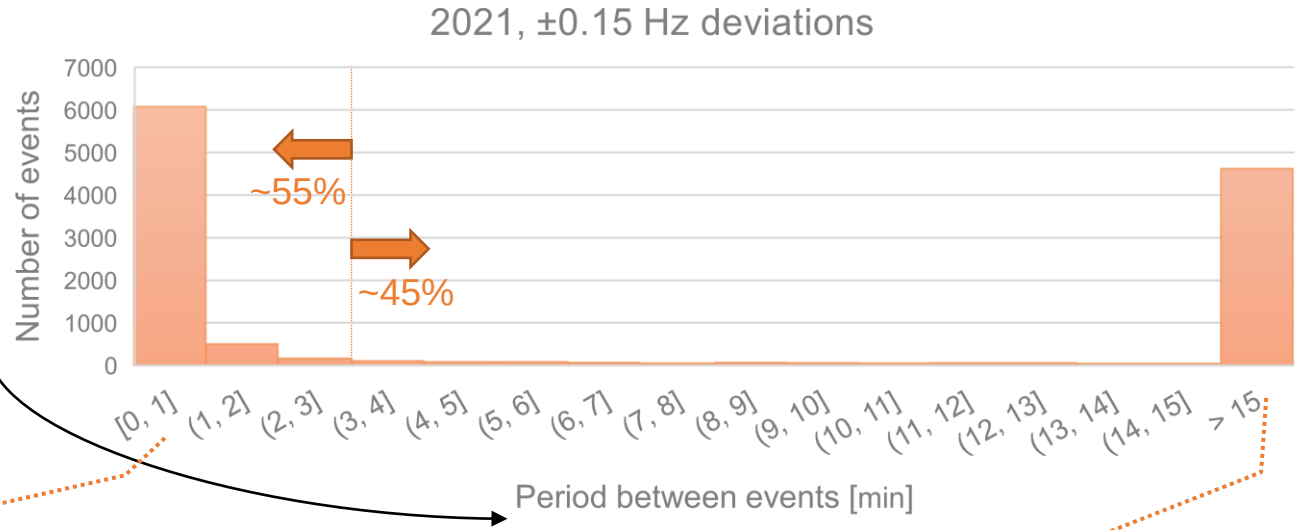
- This refers to the time interval in which a unit is allowed to recover and return to availability following an instruction.
- Initially, this parameter was specified as 1 minute or less. Following feedback from the previous S&L, we are now proposing a recovery period of **3 minutes or less**.



Recovery Period

- To specify this parameter we looked at the interval between frequency events of different magnitudes, e.g. ±0.1 Hz, ±0.15 Hz (see figure below).





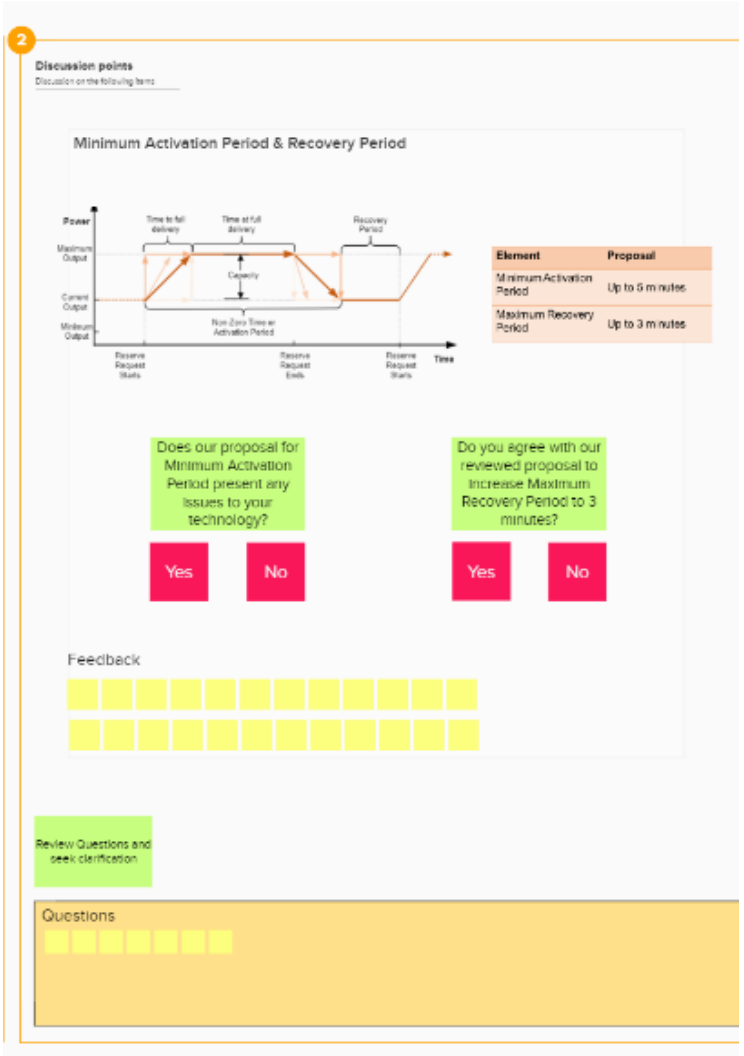
❑ Around 50% of the ±0.15 Hz events are separated by 1 minute or less.

❑ Around 38% of the ±0.15 Hz events are separated by 15 minutes or more.

- A Recovery Period of 3 minutes or less represents a good compromise between unit's ability to deliver and historic system needs.

Mural

Please head to the [Reserve Show & Listen Mural board] to provide feedback on our proposals.

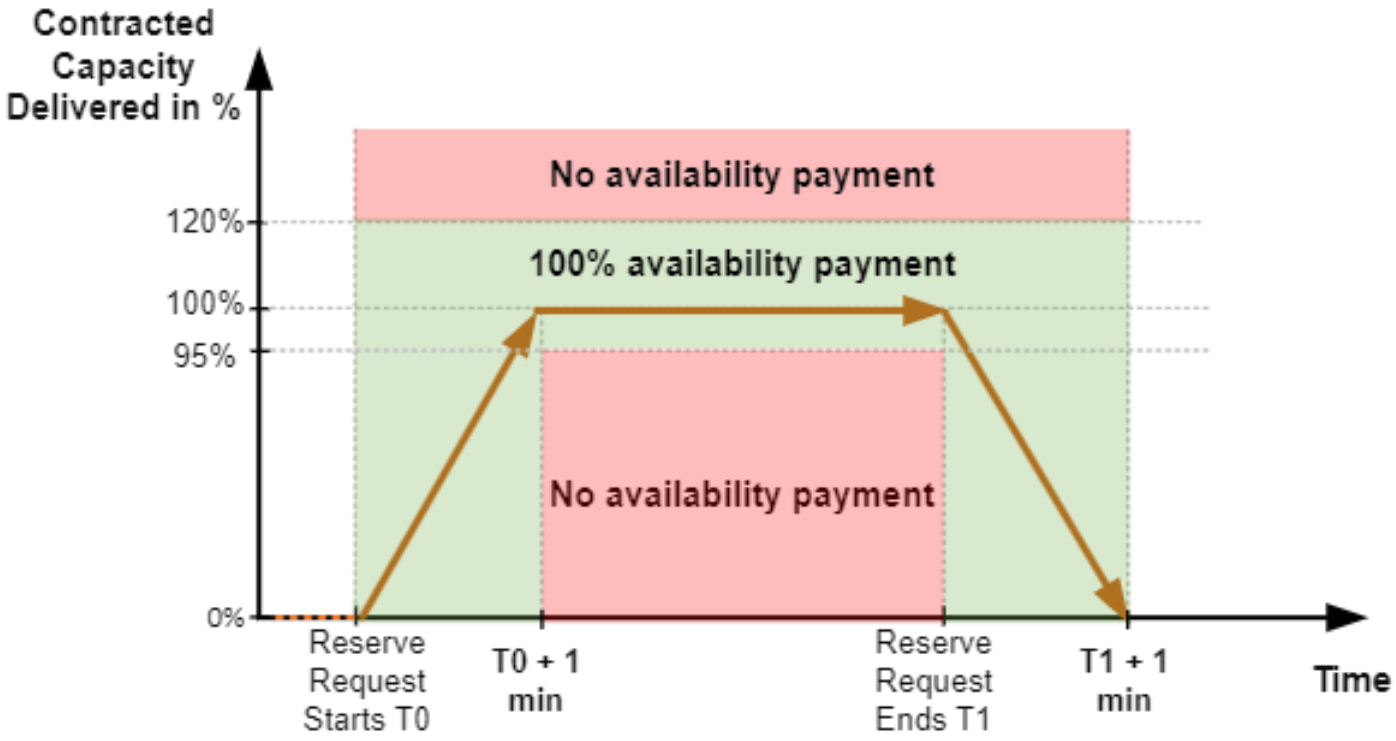


Performance Monitoring

- NGESO will conduct regular performance monitoring of service delivery.

- **Under-delivery** below 95% contracted capacity will mean availability payments for the relevant service window will be withheld. Utilisation payments will be made for all energy delivered.

- **Over-delivery** will be permitted up to 20% in addition to contracted capacity, however utilisation and availability payments will be capped at 100%.



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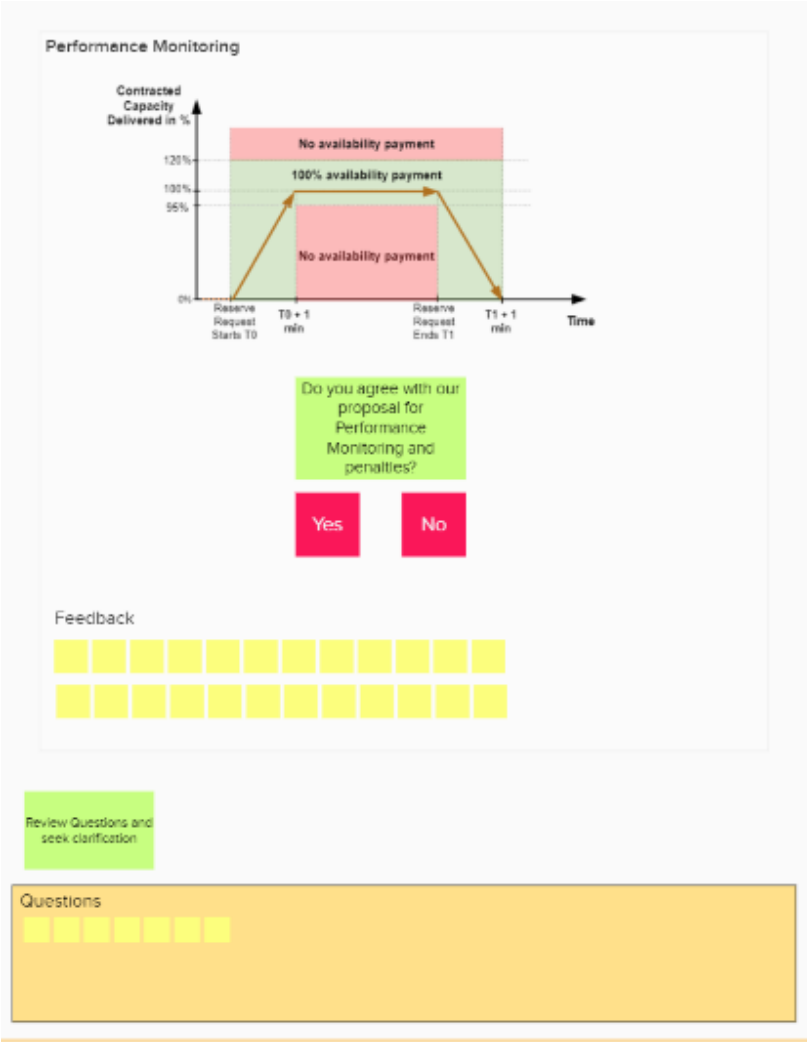
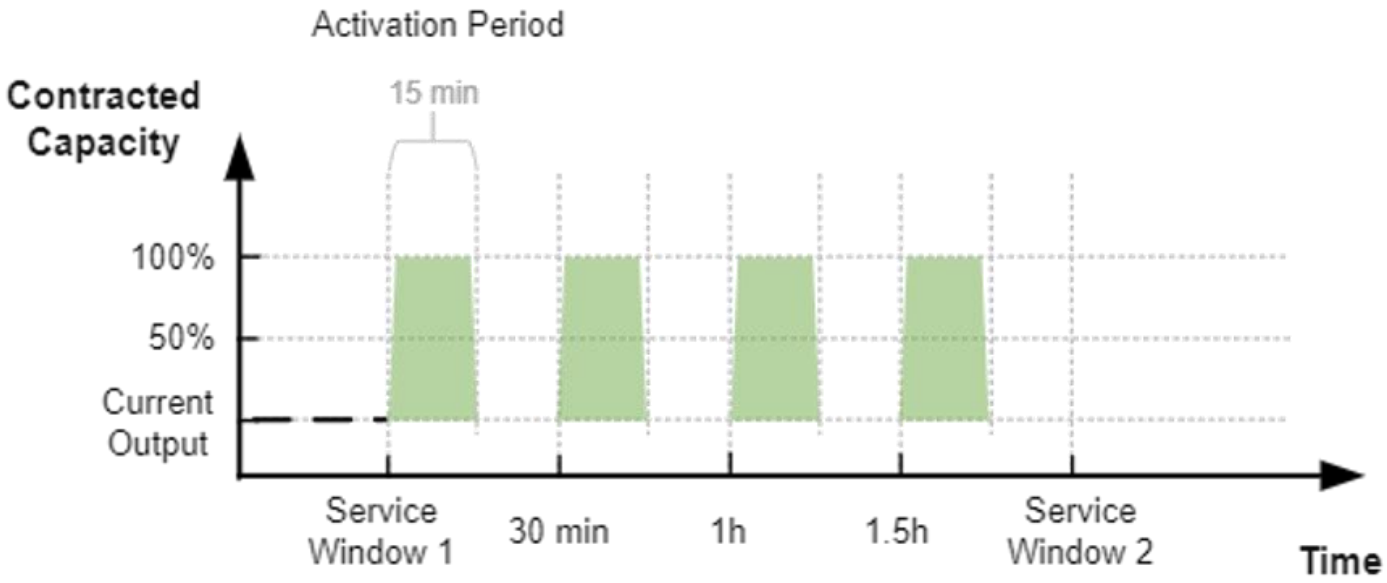


Energy Requirements

- For energy-limited assets, we propose a requirement for at least 1 activation at full contracted output per Settlement Period.
- As with other Response Services, it falls on providers to work out appropriate energy management strategies to avoid being penalised.



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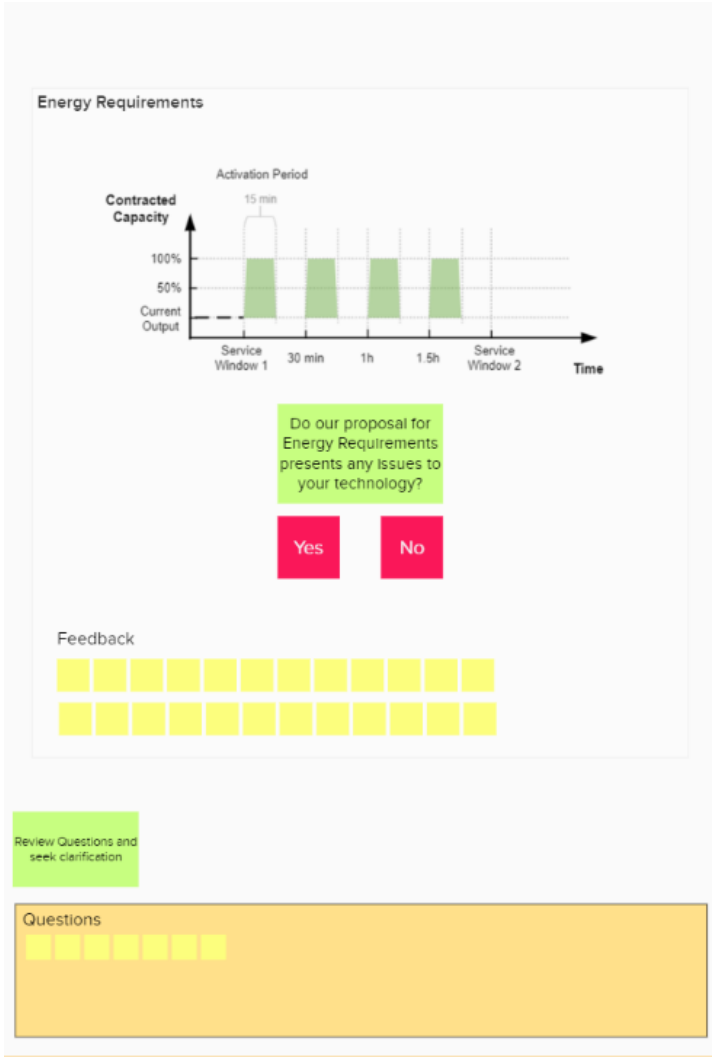

Slow & Quick Reserve – Overview

Technical Design Recap

Product Criteria	Slow Reserve	Quick Reserve
Direction	Low (Positive Reserve) & High (Negative Reserve)	
Minimum Capacity	1 MW	
Time to full output	Maximum of 15 minutes of instruction	Maximum of 1 minute from instruction
Maximum Activation Period	A minimum of 120 minutes	A minimum of 15 minutes
Minimum Activation Period	A maximum of 30 minutes	A maximum of 5 minutes
Maximum Recovery Period	A maximum of 30 minutes	A maximum of 3 minutes
Aggregation rules	Providers can aggregate units within a GSP Group	
Dispatch Solution	BM – BOAs / Non-BM - ASDP	
Operational & Performance Metering	1Hz	
Ramp rates	Maximum ramp rates - not greater than 100% of contracted capacity per minute. Maximum instantaneous ramp rates – unit cannot deliver more than 50% of contracted capacity in any 30 seconds period of ramping.	No maximum ramp rate limits.
Performance Monitoring	Penalties for over and under deliveries	
Baselining	60-minute nomination baseline	
Energy Requirements	N/A	At least 1 activation at 100% of contracted capacity per Settlement Period

Mural

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Procurement Design Recap

Product Criteria	Slow Reserve	Quick Reserve
Unit Cap/ Bidding Volume Cap	N/A	300 MW
Frequency of Procurement	Daily	
Auction Timing	D-1 14:30	
Service Window	1* 8 hour overnight block (23:00-07:00) + 8 * 2 hour blocks	Interim: 2h Window Enduring: Settlement Period
Auction Platform (for Firm Requirement)	Enduring Auction Platform	
Stacking	Same MW cannot be sold twice	
Payment Structure	**Firm service**: Availability+ Utilisation **Optional service**: Utilisation	
Payment Mechanism	Availability: Pay-as-clear Utilisation: Pay-as-bid	

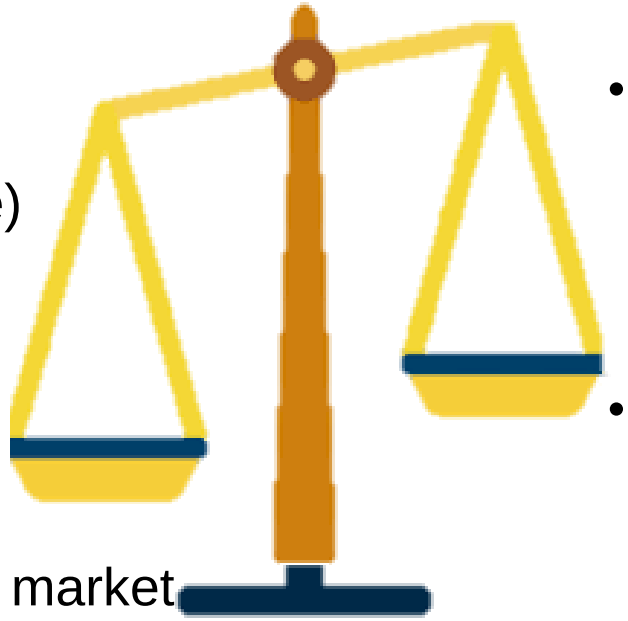
Crossovers

We recognise the complexity of the window crossover period but it is our best view at present of how we can manage the transition from one service window to the next without losing Reserve capacity across the boundary.

Product Criteria	Slow Reserve	Quick Reserve
Requirement	• Max **15 min** extending beyond the procured service window • Unless specified by the providers via the minimum activation time	• Max **5 min** cross window boundaries • Unless specified by the providers via the minimum activation time
Payment	• Availability payment for procured service window. **No additional availability** payment for window crossover periods. • **Utilisation payment** based on the utilisation price submitted for the relevant periods	
Penalty	• Normal Performance Monitoring rules applies (check slide 14 for more details)	

Service Window

- Fit for technical design (e.g., Activation Time)
- Wider market access
- Mitigate overholding risk / Be cost effective
- Better support “crossovers”
- Transaction Costs & Readiness of ESO and market participants (IS system/ Processes/ Resources)



- Standardised service window across Response and Reserve products
- Suitable for future needs

Payment Mechanism

Why should we pay for utilisation?

- Reserve products have a high energy throughput
- Win-win for both ESO and market participants

Why chose Pay-as-bid for Utilisation?

- Utilisation cannot meet the criteria of “Full information available to market prior to price being set”

Mural

Please head to the [Reserve Show & Listen Mural board] to provide feedback on our proposals.


Close down

Reserve Reform – Thank you

- Thank you for participating in our last Show & Listen event from the Reserve Reform team!

- You can leave us feedback on the Mural board – it will remain open for comments for next 7 days.

- Further written feedback would be appreciated on Reserve Products via email: (Box.futureofbalancingservices@nationalgrideso.com)

Appendices

Meet The Team

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Market Requirements Future Design Manager

Steve Dugmore

Reserve Reform Market Services Lead

Yingyi Wang

Reserve Reform Procurement Design

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Reserve Reform Product Design

Rob Westmancoat

Reserve Reform Product Design

Ewa Krzywkowska

Reserve Reform Product Design