Agenda

1. Review of Show & Listen 1
   a) General clarification of Q&A – e.g. product duration

2. Discussion points
   1. Service windows
   2. Auction timings
   3. Metering
   4. Baselines

3. Looking ahead to our next Show & Listen event
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• We will be recording the session in order to make sure we capture all feedback, this will not be published or shared.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 1

- We shared an overview of two new Slow Reserve products – Positive Slow Reserve and Negative Slow Reserve.

- Key discussion points included our proposals for ramping tolerances, product durations, performance monitoring and provider onboarding. We captured your feedback on Mural – a copy of the board can be located using the link below.

- Since our last session, we have refined our proposals for auction timings and service windows which we would appreciate your feedback on today.
Recap of Show & Listen 1

Activation Time or Non-Zero Time

- Activation Time or Non-Zero Time for assets at 0MW baseline.
- Min. Activation Time $\leq 30$ min
- Max. Activation Time $\geq 120$ min
Recap of Show & Listen 1

Activation Time or Non-Zero Time – Example of delivery

- Ramp to instruction = 15 min
- Time at full delivery = 5 min
- Ramp from instruction = 15 min
- Activation Time = 35 min
Recap of Show & Listen 1

Activation Time or Non-Zero Time – Example of delivery

- Ramp to instruction = 8 min
- Time at full delivery = 28 min
- Ramp from instruction = 5 min
- Activation Time = 41 min
- Recovery Time = 12 min
Slow Reserve – Service Windows

- The Service Windows refer to the period of time in which providers must have their assets ready for delivery if instructed by the Control Room.
- If the Service Windows are too long, some units with variable outputs (e.g. DERs) might be excluded from the market.
- Longer windows generally lead to over-holding, as NGESO would need to procure the maximum requirement over the full window length.
- If the windows are too short, then the number of transactions and associated costs could be difficult to manage.

Current proposal for NSR

<table>
<thead>
<tr>
<th>Window 1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>W5</th>
<th>W6</th>
<th>W7</th>
<th>W8</th>
<th>W9</th>
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<tbody>
<tr>
<td>23:00</td>
<td>01:00</td>
<td>03:00</td>
<td>05:00</td>
<td>07:00</td>
<td>09:00</td>
<td>11:00</td>
<td>13:00</td>
<td>15:00</td>
</tr>
</tbody>
</table>

Time

![NSR Requirement](image)
Slow Reserve – Service Windows

- The delivery could extend beyond the contracted service window. If requested, the unit must deliver for a specific duration after the window crossover, defined by their window crossover parameter. This should be at least 15 minutes.

- No availability payments will be made outside of the availability window.

- If a provider is required to deliver beyond the end of a service window (see below), they will be paid either the utilisation price submitted for the relevant window, or by default the utilisation price submitted for the window in which a unit was instructed.
Slow Reserve – Auction Timings

- Based on industry feedback, a single daily auction for availability is proposed.
- This replaces previous two-auction proposal (AM/PM) in favour of market simplicity/efficiency.

- Simultaneous with Response Auction (14:30h).
- Allows future interaction response + reserve.
- Close enough to delivery. (Better estimates for DER).
- Clear view of the IC positions for the day-ahead so a more accurate estimate of the requirements can be used.
Slow Reserve – Metering

• We require two types of metering for Slow Reserve – operational and performance metering.
• Operational metering provides our control room with critical real-time visibility, as well as facilitating better demand forecasting and prediction.
• Performance metering allows us to monitor and settle the Slow Reserve service.
• Both of these are in place for existing Reserve products
Slow Reserve – Metering

- We are proposing that Slow Reserve has 1Hz (once per second) read frequency for both operational and performance metering for all participating units.

- **Operational metering** to align with the Balancing Mechanism. It is needed to aid control room visibility of units when dispatched and ramping. We are also developing new systems which will enhance forecasting capability, also improved by more granular metering data.

- We are also aligning with work being explored through Power Responsive to reduce the operational data burden on aggregated portfolios.

- For **performance metering**, it is important to be able to check compliant ramping within the envelope for performance monitoring purposes.

- We would not be able to do this with 1-minute granularity data, as per STOR.
Slow Reserve – Baselines

- We require baselines for both operational and performance purposes. They provide visibility to our control room of expected asset output and help create a datum against which to monitor performance.

- The Balancing Mechanism is founded upon a nomination baselining technique – known as the Physical Notification.

- New Response services DC, DM & DR have also adopted a PN-style operational baseline and we are proposing that the new Reserve products also implement this as a Day 1 solution.

- 60-minute nomination baselines will be expected from both BM and non-BM participants for both Positive and Negative Slow Reserve products.

- The nomination-style baseline is broadly supported by industry; however, we recognise the challenges which some industry participants have with forecasting output 60+ minutes ahead.

  - We are working with industry to explore alternative ways of baselining, such as using a data-derived approach to isolate critical site load from balancing services response.
Slow Reserve – Baselines

Positive Slow Reserve – Deviation from zero baseline

50MWh Delivered

Positive Slow Reserve – Deviation from non-zero baseline

50MWh Delivered

Reserve Baseline

Service Delivery
Slow Reserve – Baselines

Negative Slow Reserve – Deviation from zero baseline

Negative Slow Reserve – Deviation from non-zero baseline

-50MW

0MW

14:00 14:30 15:00 15:30 16:00

50MWh Delivered

50MWh Delivered

Reserve Baseline

Service Delivery
Slow Reserve – Baselines

 Negative & Positive Slow Reserve – Deviation from non-zero baseline

Service Window Boundary

-25MW

-25MW

0MW

+25MW

14:00 14:30 15:00 15:30 16:00 16:30 17:00 17:30 18:00 18:30 19:00

2 x 25MWh NSR Delivered

25MWh PSR Delivered

Reserve Baseline

Service Delivery
Slow Reserve – Next Steps

• Feedback from today’s session – does this style and structure work for you?
  Box.futureofbalancingservices@nationalgrideso.com

• We would like to propose another session in June where we hope to share more information around other Reserve products.

• Further written feedback appreciated via the Slow Reserve Feedback Proforma
  (https://www.nationalgrideso.com/industry-information/balancing-services/future-balancing-services)
Appendices
## Slow Reserve – Timeline

<table>
<thead>
<tr>
<th>Service</th>
<th>BM dependency</th>
<th>NBM dependency</th>
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</thead>
<tbody>
<tr>
<td>Optional</td>
<td>Ofgem approval</td>
<td>Ofgem approval ASDP release</td>
</tr>
<tr>
<td>Firm</td>
<td>Balancing Transformation release</td>
<td>ASDP release</td>
</tr>
<tr>
<td></td>
<td>Enduring Auction Capability project</td>
<td>Enduring Auction Capability project</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependency</th>
<th>Estimated timescales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ofgem approval</td>
<td>4 months</td>
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<tr>
<td>ASDP release</td>
<td>6 months</td>
</tr>
<tr>
<td>Balancing Transformation release</td>
<td>12+ months (tbd)</td>
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<tr>
<td>Enduring Auction Capability project</td>
<td>Q4 22/23</td>
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</table>
## Slow Reserve: Indicative Product & Service Design

<table>
<thead>
<tr>
<th>Product Criteria</th>
<th>Proposal</th>
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<tbody>
<tr>
<td>Minimum Capacity</td>
<td>1.0MW of generation reduction (increase) / demand increase (reduction)</td>
</tr>
<tr>
<td>Full Activation Time</td>
<td>Providers must reach full activation within 15 minutes of instruction</td>
</tr>
<tr>
<td>Maximum Activation Time</td>
<td>A minimum of 120 minutes</td>
</tr>
<tr>
<td>Minimum Activation Time</td>
<td>A maximum of 30 minutes</td>
</tr>
<tr>
<td>Maximum Recovery Period</td>
<td>A maximum of 30 minutes</td>
</tr>
<tr>
<td>Aggregation rules</td>
<td>Providers can aggregate units within a GSP Group</td>
</tr>
<tr>
<td>Market Window</td>
<td>A series of service windows across the operational day</td>
</tr>
<tr>
<td>Availability Pricing</td>
<td>Pay-as-clear (Day-ahead)</td>
</tr>
<tr>
<td>Utilisation Pricing</td>
<td>Pay-as-bid (Within-day)</td>
</tr>
<tr>
<td>Dispatch Solution</td>
<td>BM – BOAs / Non-BM - ASDP</td>
</tr>
<tr>
<td>Linking of Bids</td>
<td>No linking of bids between products or procurement windows</td>
</tr>
<tr>
<td>Stacking</td>
<td>No stacking with other ancillary services</td>
</tr>
<tr>
<td>Operational Metering</td>
<td>1Hz</td>
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<tr>
<td>Performance Metering</td>
<td>1Hz</td>
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<tr>
<td>Ramp rates</td>
<td>As per envelope restrictions</td>
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<tr>
<td>Baselining</td>
<td>60-minute nomination baseline</td>
</tr>
</tbody>
</table>
Meet The Team

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