

# Reserve Reform

September 2021

Product and Service Design Update



## What have we done so far?

- At our [kick-off webinar in December](#) we shared some information on why we need reserve balancing services and the drivers for the development of a suite of new reserve products through reserve reform.
- In March we published a [consultation](#) to gather the thoughts of industry on two products: Quick Reserve and Slow Reserve. This covered key topics such as product durations, dispatch method and procurement options. We analysed consultation responses in detail to understand core themes and suggestions for improving service design.
- In May we held a series of co-creation webinars with industry to explore views and comments on the draft service design for these new products. At these workshops we set out where our red lines were and why they existed for each aspect of the design. We then asked providers what our design should be within those boundaries.
- We have now completed an internal challenge and review on the designs and what our approach to implementation should be.

## What are the next steps?

- The first product we intend to implement is Negative Slow Reserve (generation reduction or demand increase) which we will be launching in March 2022. This document sets out some of the high-level service criteria and the feedback you provided to us in our earlier workshops.
- In preparation for the March 2022 launch of Negative Slow Reserve, we will share a more detailed summary on service design once we have worked through some final remaining questions.
- We will consult on the final service design through an Article 18 EBGL consultation in the autumn.

## What about other Reserve products?

- There are additional products being developed as part of the Reserve Reform project which will be introduced following the launch of Negative Slow Reserve in March 2022. This includes Positive Slow Reserve to replace the current STOR day-ahead service. We anticipate that the launch of Positive Slow Reserve will take place towards the end of 2022 and the existing day-ahead STOR service will not be replaced until this is completed.
- There is a system need for a service to work in harmony with the new frequency response services, Dynamic Containment (DC), Dynamic Moderation (DM) and Dynamic Regulation (DR). Further work is required to explore the interaction between the new response products and a potential Quick Reserve product which we discussed in our earlier co-creation workshops. We will explore this further throughout 2022.
- A potential need for an intermediate Reserve service which is dispatchable with ~2-3 minutes notice is also being explored and will be discussed with industry. This means that the existing optional Fast Reserve product will not be phased out until the appropriate enduring solution is established or we are satisfied we don't have a system need for it.
- A draft service design for all new Reserve services will be shared with industry at the earliest opportunity for comment.

## Negative Slow Reserve

### Summary

Slow Reserve is a post-fault service designed to provide distinct positive and negative reserve and support the ESO with meeting our obligations to restore frequency to +/- 0.2Hz within 15 minutes. Negative Slow Reserve will be the first product in the new Reserve suite to be launched in March 2022 and will be instructed to correct short-term imbalances where supply outstrips demand.

These events may be caused by sudden large demand losses on the system, such as interconnector trips. With >2GW new interconnector connections in 2022 and the pipeline growing exponentially, it is important that ESO have a close to real-time tool which can mitigate large demand losses. Additionally, Negative Slow Reserve will be used to address sustained periods of high renewables and low demand, as experienced during Summer 2020.

Negative Slow Reserve will provide firm replacement energy to follow automatic Response products and endure until further BM capacity can be instructed.

A timeline for implementation is being finalised in accordance with some outstanding questions on service design. This will be shared with industry at the earliest opportunity.

### Draft Service Criteria

Minimum Unit Size	1MW
Full Activation Time	Full output at 15 minutes from instruction
Minimum Activation Time	Up to 30 minutes, as specified by providers
Maximum Activation Time	A minimum of 120 minutes
Operational & Performance Metering read frequency	1Hz
Market Procurement Window	Contracted availability windows Optional activation outside of availability windows
Stacking	No stacking between ancillary services
Linking of Bids	No linking of bids between products or procurement windows
Availability Pricing	Pay-as-clear (Day-ahead)
Utilisation Pricing	Pay-as-bid (Within-day)
Aggregation rules	GSP
Baselining	60-minute operational baseline submission

### ‘You Said, We Did’ – Co-creation Feedback

During the two workshops held on 27<sup>th</sup> and 28<sup>th</sup> May we discussed each element of the product and service design with a broad selection of industry stakeholders. For each element we explained our considerations, whether there were any ‘red lines’ and why they existed. We then asked parties to comment and propose solutions, whether that was a value or a description, within our red lines. This approach allowed for genuine industry co-creation whilst also ensuring that any ESO limitations were set out and clearly explained up front.

The results of the workshops as they pertain to Slow Reserve are set out below. The results for Quick Reserve will be published in due course once the results of the interaction with future frequency response service is fully explored.

Slow Reserve Service Topic	ESO requirements	You Said	We Did
<b>Product Instruction</b>	<ul style="list-style-type: none"> <li>Manual instruction through one system.</li> </ul>	<ul style="list-style-type: none"> <li>Manual instruction for Slow Reserve is acceptable.</li> </ul>	<ul style="list-style-type: none"> <li>Manual instruction by ESO.</li> </ul>
<b>Product Durations</b>	<ul style="list-style-type: none"> <li>Minimum run time should not be longer than a settlement period.</li> <li>Maximum endurance time should be more than 89 minutes to allow for instruction of the slowest BMU.</li> </ul>	<ul style="list-style-type: none"> <li>30 minutes minimum duration for Slow Reserve would be acceptable and avoid damaging assets.</li> <li>120 minutes maximum endurance time was preferred to 240 minutes.</li> </ul>	<ul style="list-style-type: none"> <li>Agree with industry and propose 30 minutes and 120 minutes for minimum run and maximum endurance times respectively.</li> </ul>
<b>Ramp Rates</b>	<ul style="list-style-type: none"> <li>Ramp rates must not be vertical.</li> <li>Early delivery of the product in the ramping window will give control room confidence.</li> </ul>	<ul style="list-style-type: none"> <li>Avoid prescriptive ramp rates as it will exclude some technology types.</li> <li>Look to standardise with the BM or other markets where possible.</li> <li>Consider whether ramp-down time is included in recovery.</li> </ul>	<ul style="list-style-type: none"> <li>Allow generous ramp-up tolerance.</li> <li>Ramping down time will be included in recovery periods.</li> </ul>
<b>Recovery Periods</b>	<ul style="list-style-type: none"> <li>No longer than 30 minutes as this would affect scheduling decisions and hence reduce the value of assets with &gt;30 minutes recovery periods.</li> </ul>	<ul style="list-style-type: none"> <li>30-minute recovery period suggested for Slow Reserve assets (e.g. reciprocating engines, DSR), although some may require longer.</li> </ul>	<ul style="list-style-type: none"> <li>Include 30-minute recovery period, including ramping down time.</li> </ul>
<b>Over-delivery</b>	<ul style="list-style-type: none"> <li>Seek industry views on over-delivery.</li> </ul>	<ul style="list-style-type: none"> <li>Do not penalise over-delivery and expect participants to alter contracted capacity if differences in delivered volumes are consistent.</li> </ul>	<ul style="list-style-type: none"> <li>No penalties applied for over-delivery but payments will be capped.</li> </ul>
<b>Stacking</b>	<ul style="list-style-type: none"> <li>No stacking as the products are firm.</li> </ul>	<ul style="list-style-type: none"> <li>Agreed with no stacking as different asset types and 'reserve erosion'.</li> </ul>	<ul style="list-style-type: none"> <li>No stacking between services.</li> </ul>
<b>Procurement Timing</b>	<ul style="list-style-type: none"> <li>Availability auctions to be scheduled at day-ahead.</li> </ul>	<ul style="list-style-type: none"> <li>Support for day-ahead close to real-time procurement.</li> <li>Mixed thoughts on auction timings as providers would like Reserve to interact with wholesale markets, interconnector declarations and other ESO markets.</li> <li>End state should be co-clearing algorithm which facilitates all ESO markets.</li> </ul>	<ul style="list-style-type: none"> <li>Availability auction to be scheduled day-ahead. Timings to be coordinated with procurement of new frequency response services.</li> </ul>
<b>Linking of Bids</b>	<ul style="list-style-type: none"> <li>No linking of bids to reduce complexity and increase market transparency.</li> </ul>	<ul style="list-style-type: none"> <li>Agreement that linking of bids increases complexity, but there are concerns about how market windows will be created.</li> <li>Multiple bids per asset could be useful.</li> </ul>	<ul style="list-style-type: none"> <li>No change. No linking of bids.</li> <li>Multiple bids per asset not in scope for initial launch but included in delivery backlog.</li> </ul>

<b>Aggregation Rules</b>	<ul style="list-style-type: none"> <li>In line with approach for frequency response service.</li> </ul>	<ul style="list-style-type: none"> <li>GSP concerns are well voiced across Response.</li> <li>Clear justification is required if GSP is chosen solution.</li> </ul>	<ul style="list-style-type: none"> <li>Aggregation restricted to GSP to provide visibility for dispatching assets behind a constraint and to provide clear direction aligned with frequency response.</li> </ul>
<b>Pricing</b>	<ul style="list-style-type: none"> <li>Pay as Bid for utilisation to align with BM.</li> </ul>	<ul style="list-style-type: none"> <li>Supportive of PAC and PAB for availability and utilisation respectively.</li> </ul>	<ul style="list-style-type: none"> <li>Availability – pay-as-clear</li> <li>Utilisation – pay-as-bid</li> </ul>
<b>Operational Metering</b>	<ul style="list-style-type: none"> <li>Seek views from industry and look to standardise with other ESO products.</li> </ul>	<ul style="list-style-type: none"> <li>Supportive of proposed metering standards which seemed appropriate for Reserve.</li> <li>Standardisation of operational metering across ESO would be welcomed and CoP11 sensible option for accuracy.</li> </ul>	<ul style="list-style-type: none"> <li>1Hz read frequency</li> <li>5-second latency for submission to ESO.</li> </ul>
<b>Baselining</b>	<ul style="list-style-type: none"> <li>Seek views from industry and look to standardise with other ESO products.</li> </ul>	<ul style="list-style-type: none"> <li>60-minute nomination baseline is a barrier to entry for some providers (e.g. non-dedicated assets).</li> </ul>	<ul style="list-style-type: none"> <li>Operational baselines will be required as per Dynamic Containment for initial launch.</li> <li>Additional methods are being explored with industry to address barriers to entry.</li> </ul>

There are still some outstanding questions which we are working through to complete the service design for Negative Slow Reserve. These include:

- Structuring of service availability windows
- Auction timings to align with other ESO markets
- Methodology for performance monitoring
- Specific dispatch methods for BM and non-BM units

Please direct any questions or feedback on Negative Slow Reserve to the Reserve Reform team at:

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