Reserve Reform Show & Listen 1

28 April 2022

Agenda

1. Introductions and Objectives
2. Slow Reserve: Indicative Product & Service Design Summary Document
3. Discussion points
    1. Ramp Rate proposals
    2. Performance monitoring
    3. Service Windows
    4. Auction Timings
    5. Provider Onboarding
4. Next Steps – agreeing future S&L events

Meet The Team

Adam Sims

Reserve Reform Product Manager

Ed Farley

Reserve Reform Product Owner

Ewa Krzywkowska

Reserve Reform Product Design

Francisco Sanchez Gorostiza

Reserve Reform Product Design

Steve Dugmore

Reserve Reform Market Services Lead

Mike Coldwell

Market Requirements Future Design Manager

How to engage

- We will be using Mural to gather detailed feedback: < link >
- 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- We will be recording the session in order to make sure we capture all feedback, this will not be published or shared

Introduction

- Our proposed Slow Reserve service will be split into two products: Positive Slow Reserve (PSR) and Negative Slow Reserve (NSR).
- Today's session will build on the Indicative Product & Service Design Summary shared last week for Slow Reserve and previously for Negative Slow Reserve.
- Future sessions will refer to other new Reserve products which are currently being explored.
- Many topics covered today may be relevant to the development of other products and discussions shall be considered as part of the design process.

Objectives

Reserve Reform Project

- To reach net zero, we need **competitive markets** which **unlock new flexibility** and secure the future operation of the electricity system
- Existing reserve products are not **standardised**, making auction-based procurement difficult
- Existing products have been designed around available technologies rather than to **meet statutory obligations**
- New operability challenges require products that are **faster** and also **access to downward flexibility**

Today's Show & Listen Event

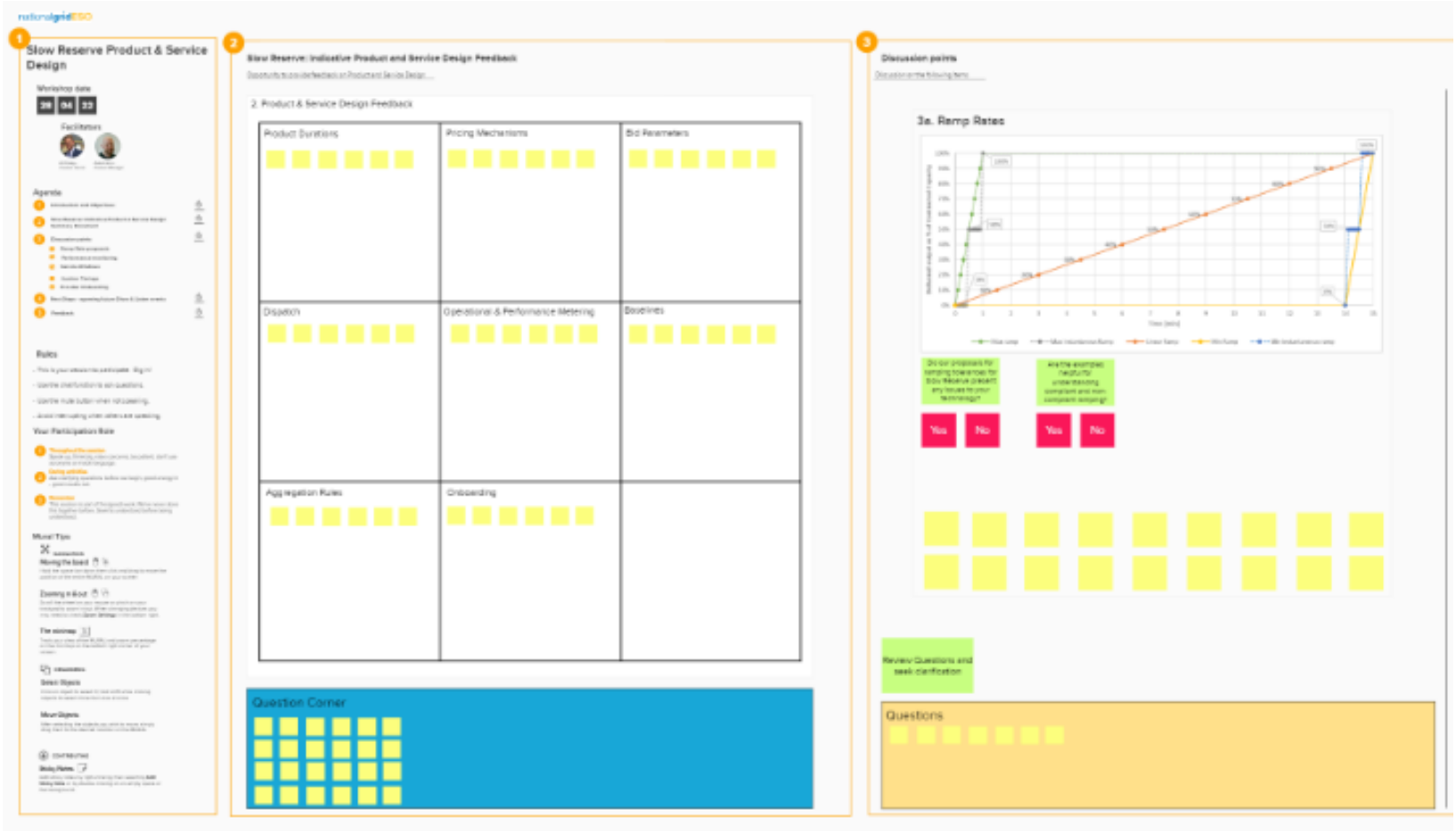
- To share our proposals for the development of two new Slow Reserve services
- To seek industry feedback on service criteria and identify areas for improvement
- To agree next steps for industry engagement, including format and frequency

Slow Reserve: Indicative Product & Service Design

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

Mural

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



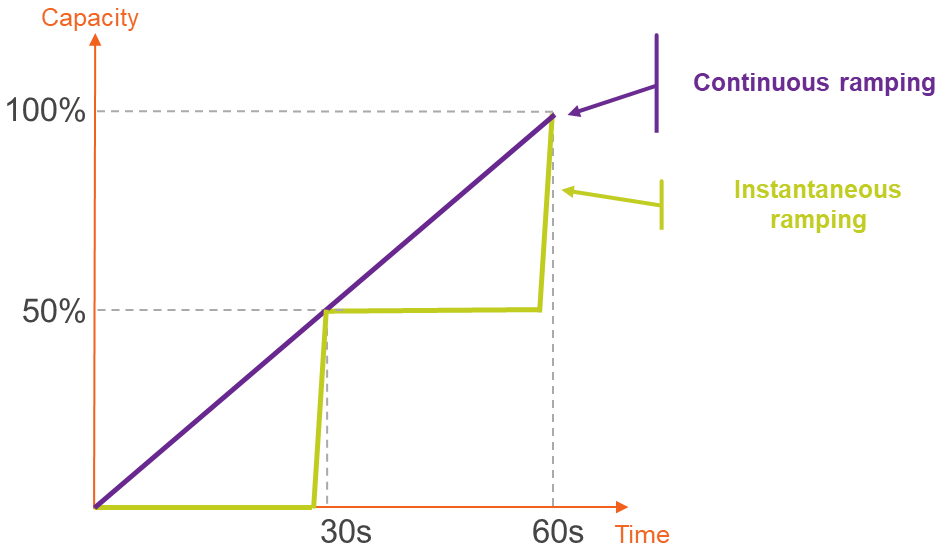
Slow Reserve – Ramp Rates

Principle:

We are proposing to introduce ramping restrictions when ramping towards instructions to ensure we avoid unwanted impact on frequency quality and we give ENCC enough reaction time after the loss.

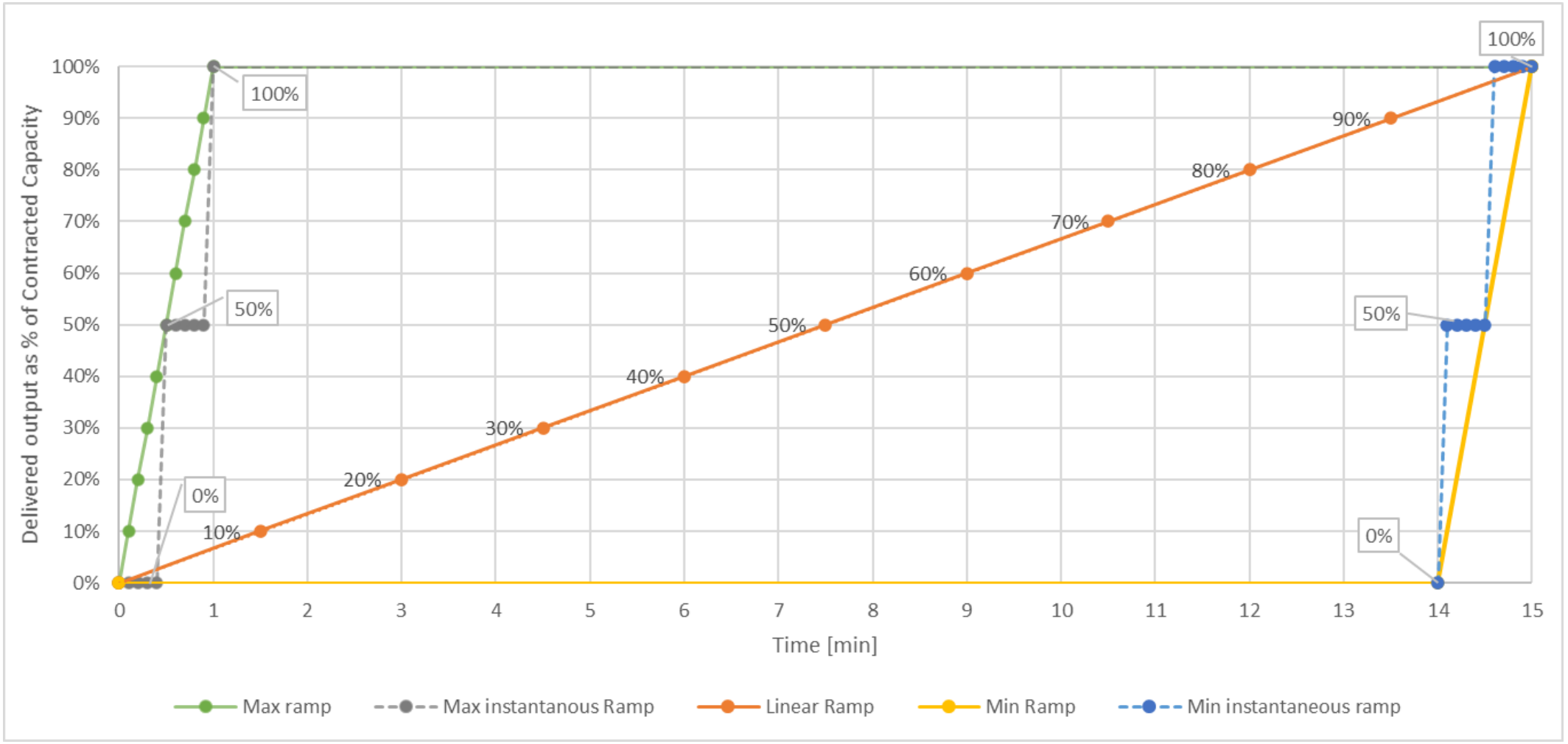
Proposal:

- For all ramping, **the unit must not deliver at a rate greater than 100% of contracted capacity per minute** (maximum ramp rates).
- For instantaneous ramping, **the unit must not deliver more than 50% of contracted capacity in any 30 seconds period of ramping.**
- The unit may start delivery immediately after accepting a dispatch instruction.



Slow Reserve – Ramp Rates

Proposed envelope of delivery:



Slow Reserve – Modelling

How we produced our modelling:

Task 1: Simulate demand/generation loss at 50.1Hz starting frequency

Demand: 16GW

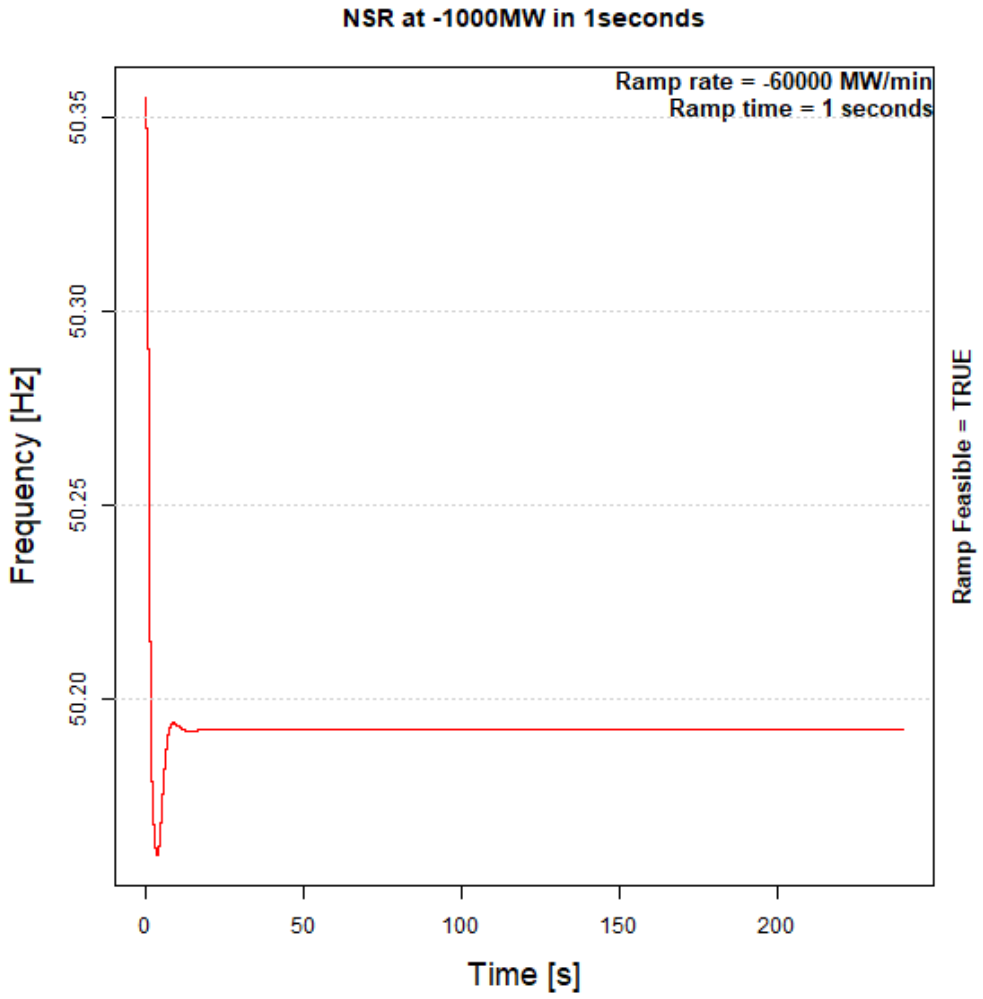
Inertia: 140 GVAs

Pre-fault frequency: 50.1Hz

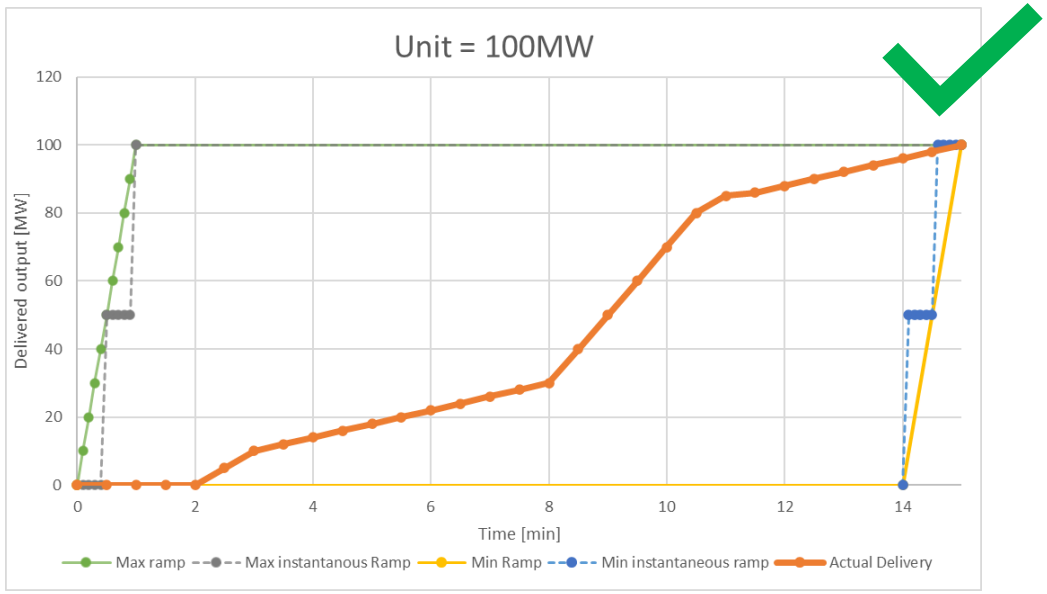
Loss: 1,000MW

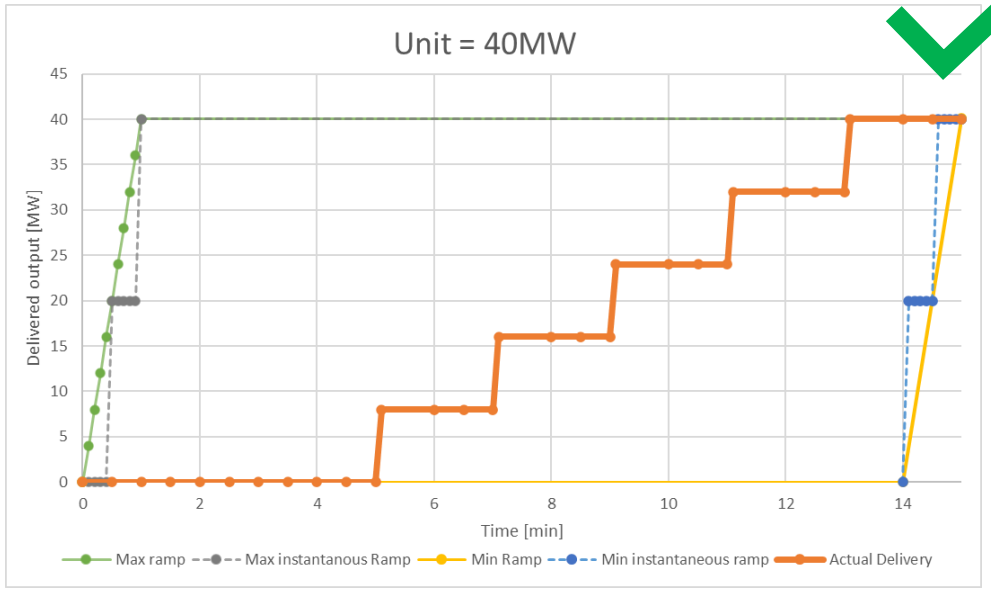
Task 2: Simulate activation of Slow Reserve at various ramp time

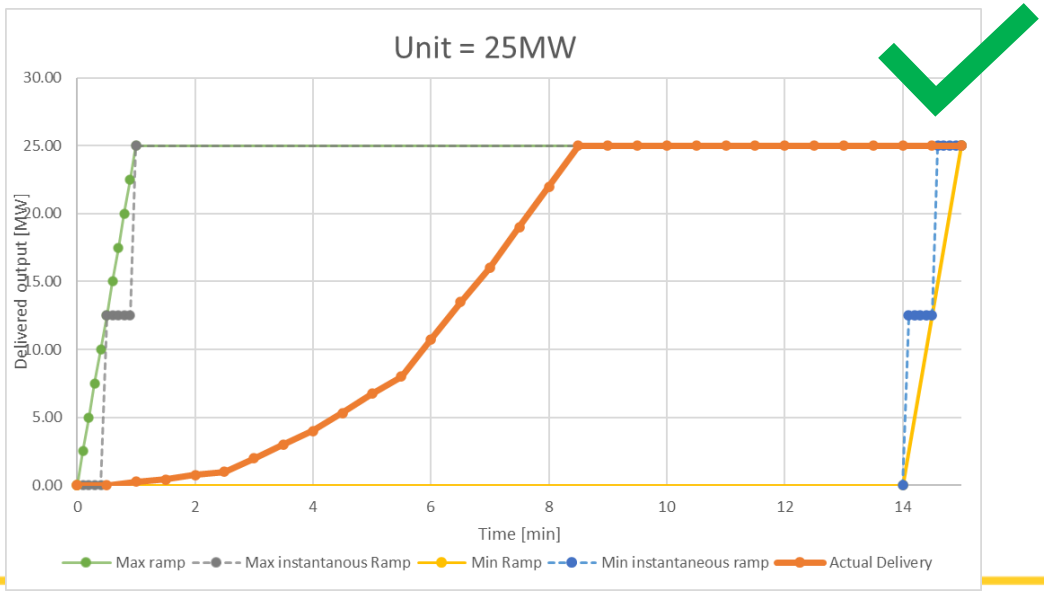
Post-fault frequency: 50.36Hz

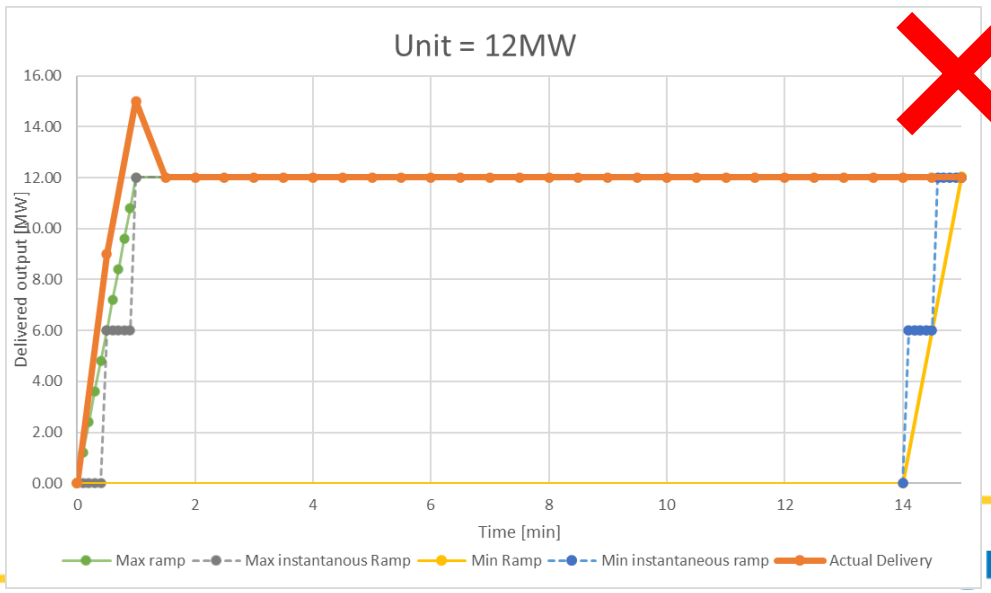


Slow Reserve – Ramp Rates – Examples of delivery



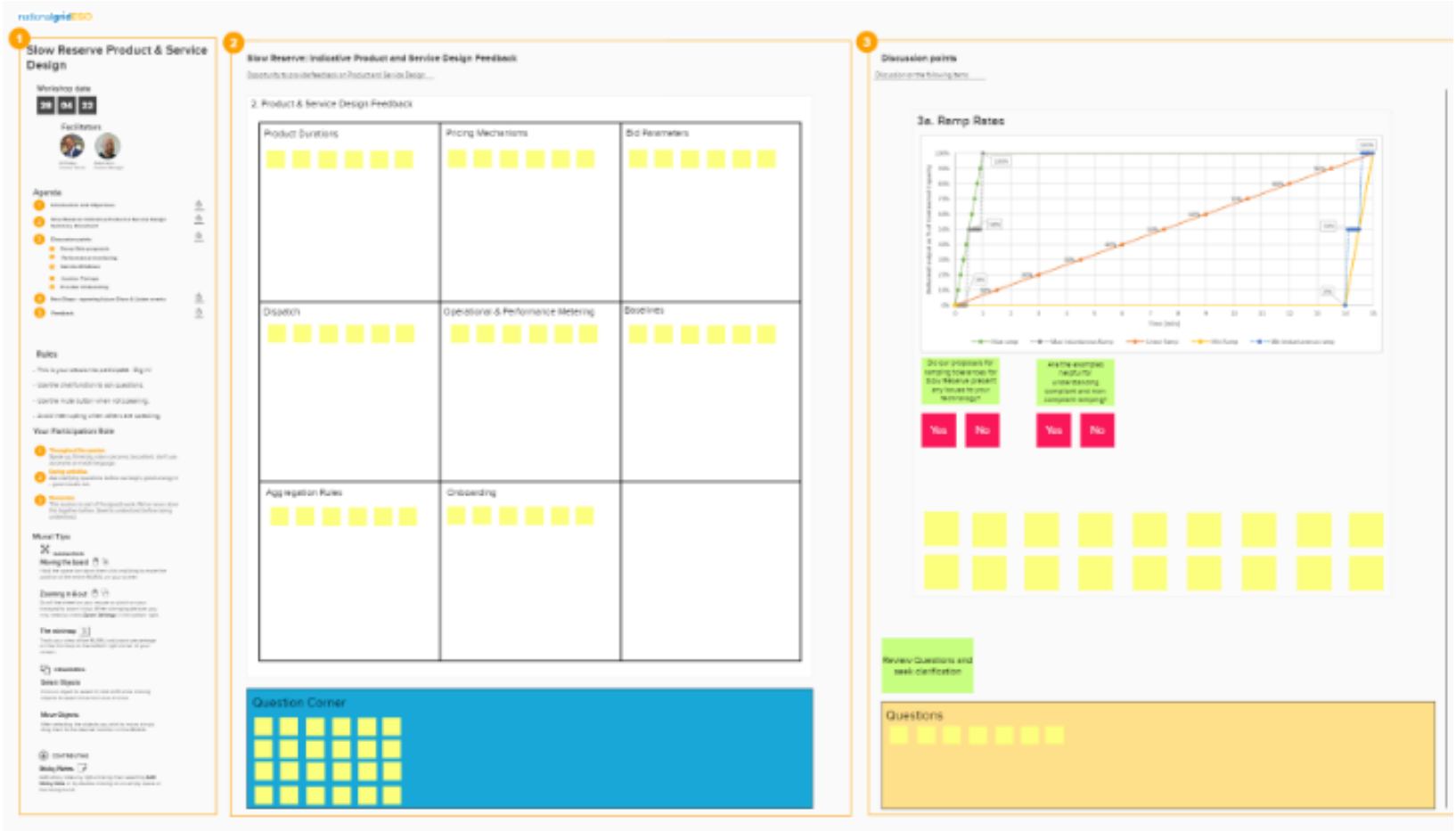






Mural

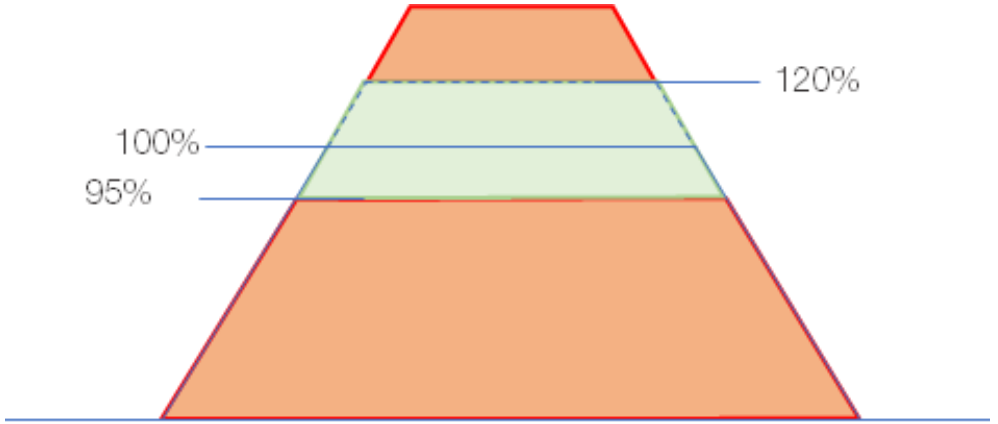
Please head to the Reserve Show & Listen Mural board to provide feedback on our proposals.



Slow Reserve – Performance Monitoring

- As per all ESO balancing services, we will monitor performance to ensure compliant delivery.

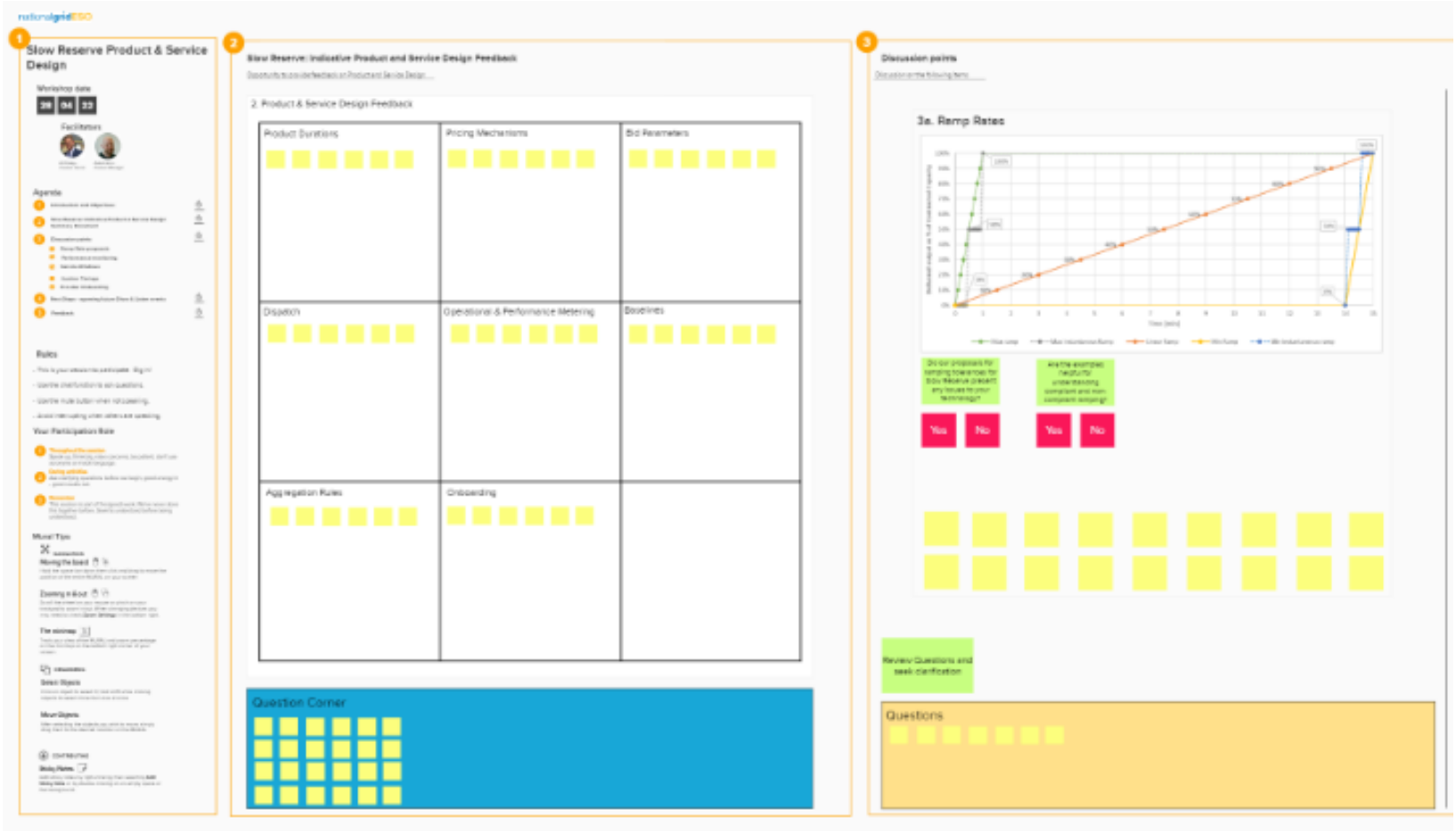
- **Under-delivery** below 95% contracted capacity will mean availability payments for the relevant service window will be withheld. Utilisation payments will be made for all energy delivered.



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

Mural

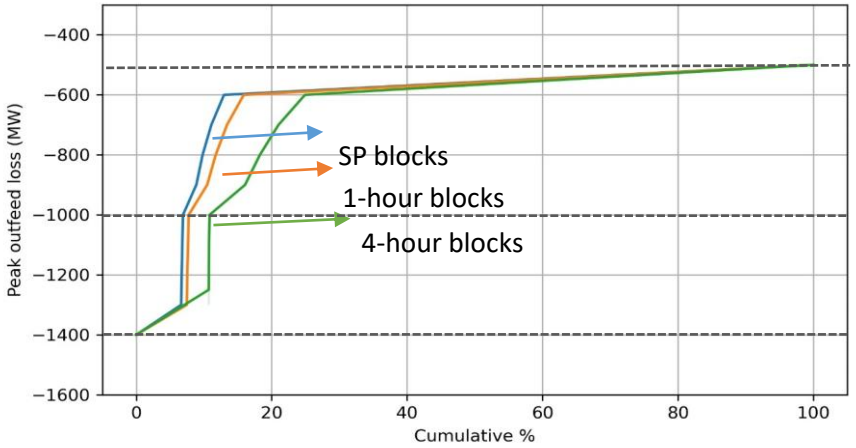
Please head to the Reserve Show & Listen Mural board to provide feedback on our proposals.



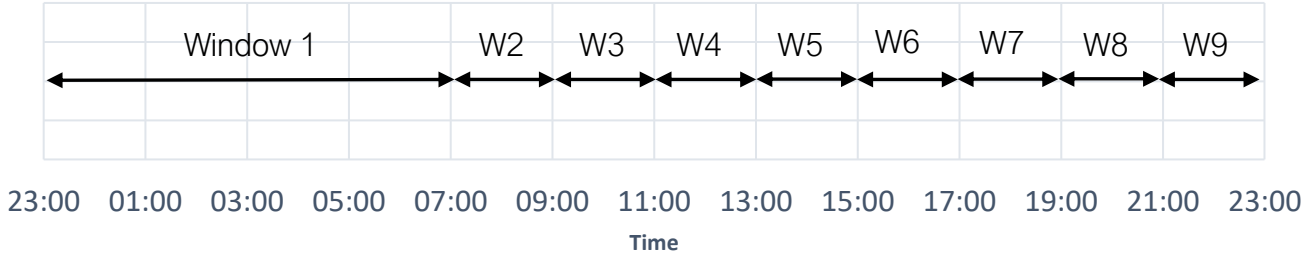
Slow Reserve – Service Windows

- 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.

NSR Requirement

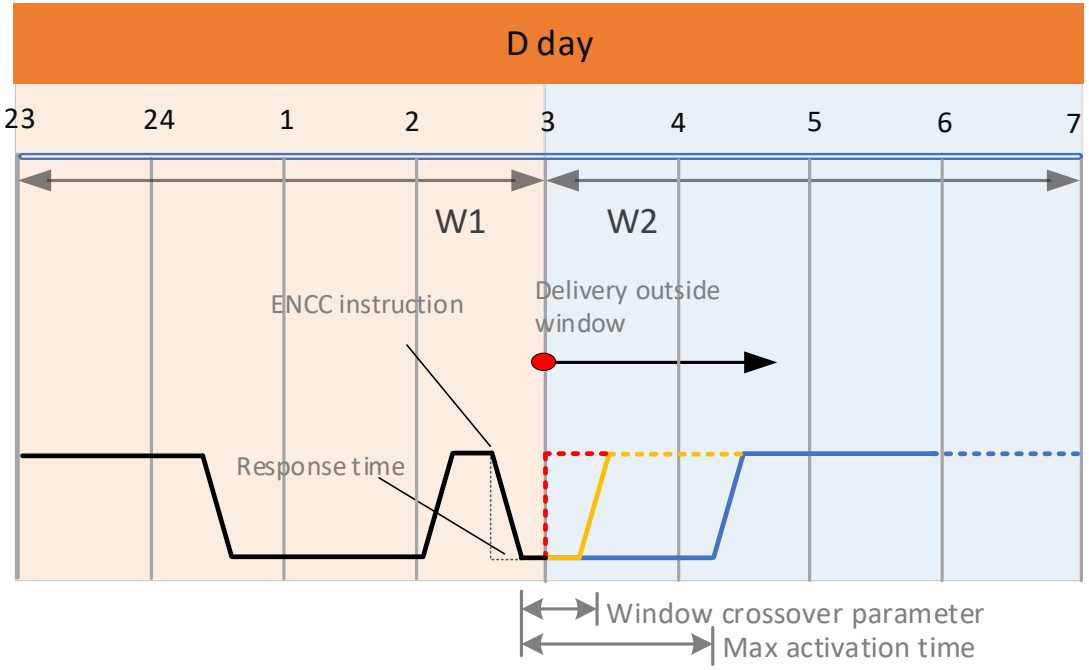


Current proposal



Slow Reserve – Service Windows

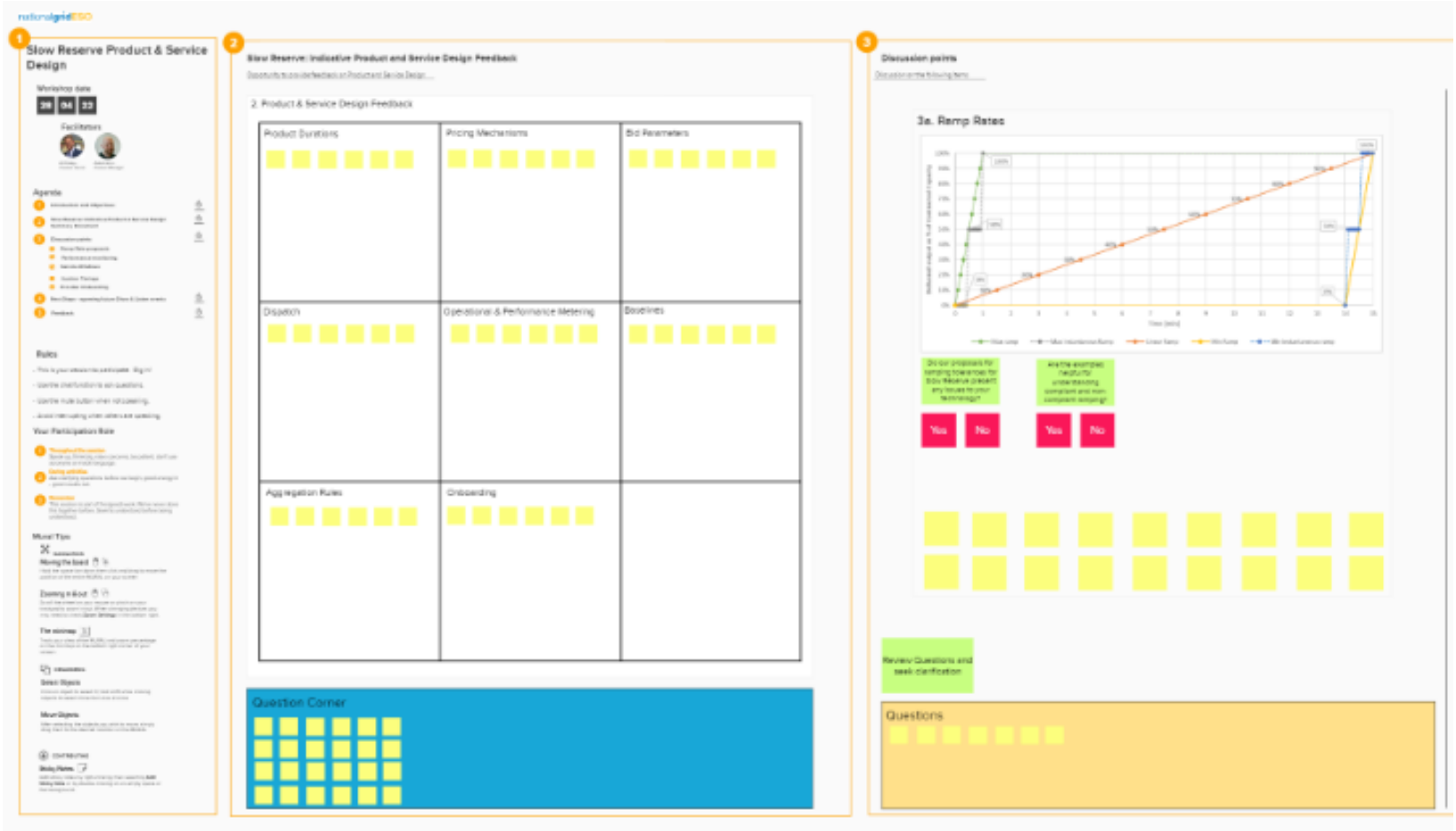
- Because the Slow Reserve product has a maximum activation time of 120 **minutes**, the capacity procured within a service window could be instructed to deliver within the window but the delivery continues outside the window.
- The figure below shows an example with a 4-hour service window and different options for delivery post-window.



Option	Description
A	Hard stop at the end of the window. Delivery not expected outside of the dispatch window independent of the unit's maximum activation time.
B	The unit must deliver for a specific duration after the window crossover, defined by their **window crossover parameter**. This should be at least its minimum activation time.
C	The unit must be ready to deliver if instructed just before the end of the delivery window. Potentially for a maximum of 2 hours.

Mural

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

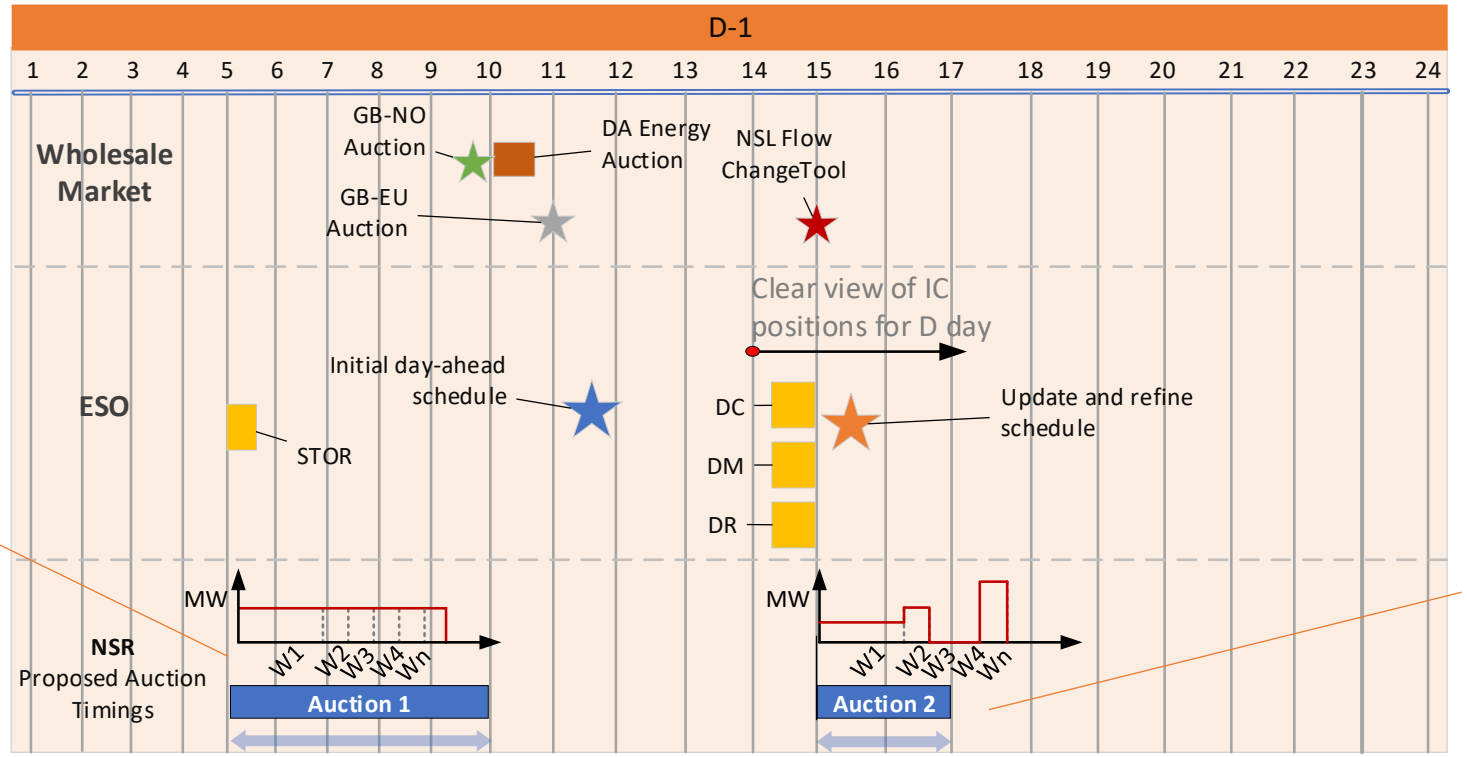


Slow Reserve – Auction Timings

- Two daily auctions for availability are proposed:

Early knowledge of source of reserve gives confidence to the Control Room

Base requirement (560MW), independent of IC positions.



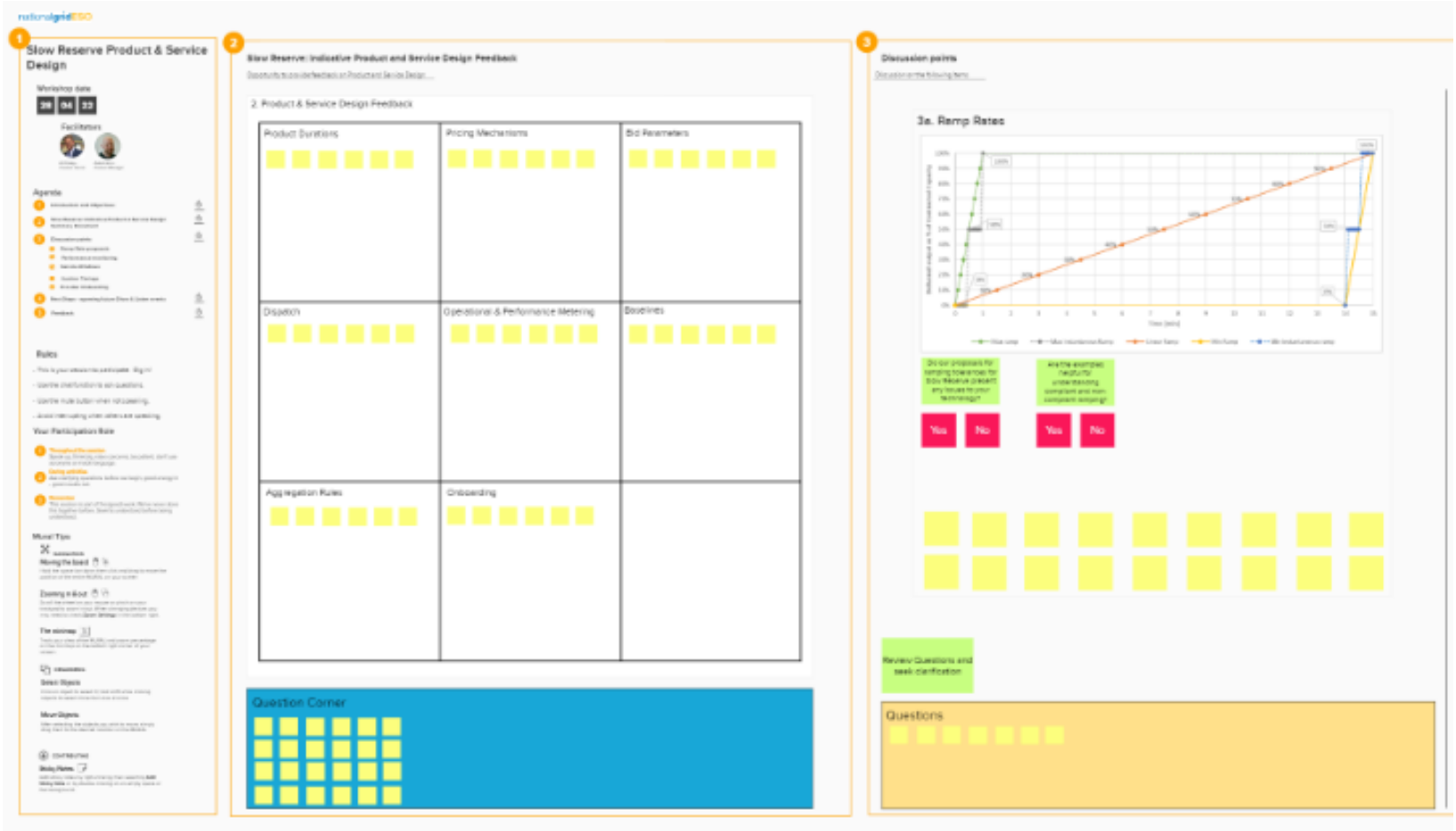
After response auctions. (Allows interaction response + reserve)

Closer to delivery. (Better estimates DER)

- The requirement for each of the service windows will be cleared at the day-ahead auctions.
- Initially though, it will be an optional service, i.e. providers will submit prices and capacity and NGESO will instruct them as and when required within gate closure), and it will be for NBM only (as BM units will continue to use the BM).

Mural

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



Provider Onboarding

In line with existing new product launches, registration and pre-qualification will be completed via our Single Market Platform (SMP). High level steps:

- participant requests registration as a Registered Service Provider
- NGESO validates registration and issues user IDs
- participant (now Registered Service Provider) accedes to relevant contract documentation to facilitate Slow Reserve participation (electronic signature on platform)
- provider uploads details of one or more Eligible Assets for pre-qualification
- NGESO undertakes any necessary validation

provider allocates Eligible Assets to Slow Reserve Unit(s)

- · Non-BM providers will be required to establish and complete testing of the required web-based solution for communications with ESO via the Platform for Ancillary Services (PAS).
- NGESO confirms completion of prequalification process and providers are assigned a login to the dedicated auction platform.
- Provider is now able to participate in Slow Reserve daily auctions

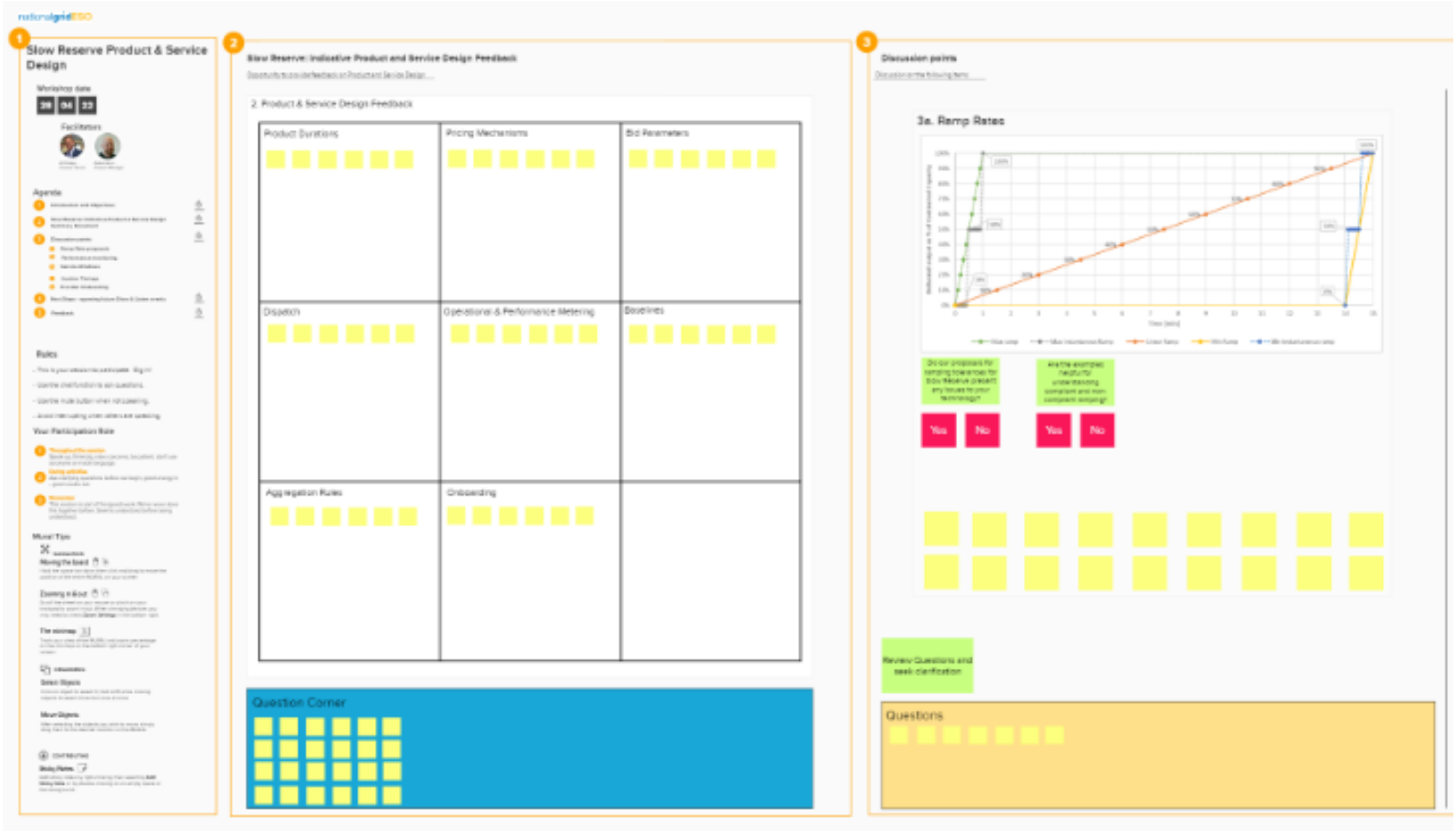
Slow Reserve – Timeline

Service	BM dependency	NBM dependency
Optional	Ofgem approval	Ofgem approval ASDP release
Firm	Balancing Transformation release Enduring Auction Capability project	ASDP release Enduring Auction Capability project

Dependency	Estimated timescales
Ofgem approval	4 months
ASDP release	6 months
Balancing Transformation release	12+ months (tbd)
Enduring Auction Capability project	Q4 22/23

Mural

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



Slow Reserve – Next Steps

- Feedback from today's session – does this style and structure work for you? Box.futureofbalancingservices@nationalgrideso.com
- Agreeing cadence of future sessions
- Next session – metering and baselining
- Further written feedback appreciated via the Slow Reserve Feedback Proforma (https://www.nationalgrideso.com/industry-information/balancing-services/future-balancing-services)