Public

Balancing Programme Event

18 November 2025

NESO
National Energy System Operator

Housekeeping

Please note we will be taking **photos** throughout the day for use in the NESO newsletter – please let a member of the NESO team know if you don't want to be captured

NESO
National Energy System Operator

Q&A via Slido

Please post any questions you have for our speakers on Slido - **#BPNOV25** - ensuring to list both your full name and organisation; this will enable us to follow up with you after the event where necessary.

All questions posted in Slido will be published online with answers after the event; this will include any questions we are unable to answer in the session due to time constraints or the need for further information.

Out of scope questions will be forwarded on to the appropriate NESO team or expert for a direct response. We may ask you to contact us by email to ensure we have the correct contact details for the response.

Slido will close at the end of the event; if you have any further questions, please get in contact with us at box.balancingprogramme@neso.energy

Please scan this QR code to participate on Slido or search for Slido online and enter **#BPNOV25**

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Public

#BPNOV25

November Balancing Programme External Event Agenda

Time	Agenda Item	Details
9:00 – 9:30	**Registration (refreshments will be provided)**	
9:30 – 9:45	**Balancing Programme Overview**	• Balancing Programme system transformation overview • Roadmap updates & delivery progress • Putting your feedback into action
9:50 – 10:30	**Breakout: Capability Journey 2023 – 2028**	Participants will be divided into groups A, B, C & rotate around 3 breakout rooms with 40 mins in each; system capability journeys will be presented followed by an interactive feedback exercise.
10:30 - 10:50	**Morning Break (refreshments will be provided) – 10:50 move to breakout room for 10:55 start**	
10:55 – 11:35	**Breakout: Capability Journey 2023 – 2028**	As above
11:40 – 12:20	**Breakout: Capability Journey 2023 – 2028**	As above
12:20 – 13:10	**Lunch (provided) – 13:10 move to breakout rooms for 13:15 start**	
13:15 – 14:00	**Breakout Session A, B, or C**	All participants will rotate around 3 breakout rooms with 45 mins in each. A. OBP Demo B. Dispatch Transparency C. A Day in the Life of a Control Room Engineer
14:05 – 14:50	**Breakout Session A, B, or C**	As above
14:50 – 15:10	**Afternoon Break (refreshments will be provided) – 15:10 move to breakout rooms for 15:15 start**	
15:15 – 16:00	**Breakout Session A, B, or C**	As above
16:05 – 16:25	**Q&A**	Ask your questions to our panel of SMEs; Slido will remain open throughout the day
16:25 – 16:30	**Next Steps & Closing Remarks**	Future engagement opportunities
16:30 – 17:30	**Networking Event**	

Balancing Programme Overview

Brendan Lyons, Balancing Programme Director

NESO
National Energy System Operator

System Transformation – Where are we?

Previous landscape

System

Energy Forecasting System (EFS)

Electricity Balancing System (EBS)

Balancing Mechanism Systems (BM)

- SPICE (scheduling)
- SORT (dispatch)
- Vergil (dispatch)
- Demand Predictor
- Clogs (back-up system)

Ancillary Services Dispatch Platform (ASDP)

- Non-BM Response & Reserve services
- MW dispatch

November 2025

System

EFS

Platform for Energy Forecasting (PEF)

BM

- Scheduling
- National Optimisation
- Electronic Dispatch & Logging (EDL) / Electronic Data Transfer (EDT)

Open Balancing Platform (OBP Lite)

- Bulk dispatch capabilities
- OBP is a fully integrated system
- New Secure Internet Gateway
- Market Services Deployed
- Manual instructions
- Ancillary Service instructions
- Constraint management
- Real Time Predictions phase 1

ASDP

- Non-BM Responses
- MW dispatch

April 2026

System

PEF

BM

15% of SORT functionality
60% of SPICE functionality

Fully Resilient OBP (OBP Strategic)

85% of SORT functionality
40% of SPICE functionality

Including:

- Constraint Optimisation
- National Optimisation
- BM & Non-BM Slow Reserve
- Network Services
- EDL/EDT Mastering
- New storage parameters
- Real Time Predictions phase 2
- PEF integration

April 2027

System

PEF

Fully Resilient OBP

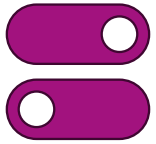
- Complete migration of balancing functions to OBP
- Modern, resilient, adaptable and scalable system
- Reduced downtime
- More opportunities for Flexibility Providers
- No differentiation between BM and non-BM units
- Improved situational awareness
- More economic dispatch & lower consumer costs
- Reduced CO2 emissions

If you missed our June 2025 event, catch-up *here* to listen to more detail about where we are in our balancing & forecasting transformation journey.

Key Areas of Progress since September 2025

Open Balancing Platform:

- **Ancillary Service Instructions**



Deliverable: Addition of further ancillary service instruction types: Mandatory Frequency Response, Synchronous Compensation, Static Reactive Power, Low Frequency Relay & Fast Start.

Benefit: Improves operational efficiency and resilience by migrating instruction workflows from legacy systems.

What does this mean for you?: Supports security of supply by enabling more reliable service execution.

Open Balancing Platform:

- **Bulk Dispatch from a Price Stack**

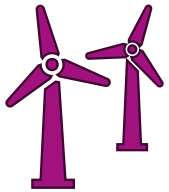
Deliverable: Provides an alternative method to bulk dispatch optimisation - dispatch engineers manually select multiple units from a price stack creating a bulk volume of energy in price merit order; instructions are then created in bulk and dispatched automatically.

Benefit: Better constraint management and lower consumer costs.

What does this mean for you? More efficient dispatch and reduction in skips, including those behind constraints.

Open Balancing Platform:

- **Wind Instructions**



Deliverable: Ability for control engineers to issue individual or bulk instructions to wind BMUs.

Benefit: Improves operational efficiency and resilience by migrating instruction workflows from legacy systems.

What does this mean for you?: Supports more economic dispatch and security of supply by enabling faster and more reliable service execution.

Open Balancing Platform:

- **Pumped Storage Monitoring**

Deliverable: New OBP displays supporting the visualisation of pumped storage states.

Benefit: Enables further pumped storage functionality from legacy systems to be moved to OBP.

What does this mean for you? Supports improved economic dispatch.

OBP Roadmap – Upcoming Delivery FY 25/26

PI 15 (Jan 25 - Apr 25)

OBP Capabilities:
1. Constraint Management
2. Manual BOAs

OBP Enablers:
1. Interface to Ancillary Settlement for NBM
2. Non-BM APIs

PI 16 (Apr 25 - Jul 25)

OBP Capabilities:
1. Non-BM Instruction Types

PI 17 (Jul 25 - Oct 25)

OBP Capabilities:
1. Non-BM Quick Reserve
2. Bulk Dispatch (price stack based)

PI 18 (Oct 25 - Jan26)

OBP Capabilities:
1. National Dispatch Optimisation
2. Pumped Storage BOAs
3. Constraints Pathfinder
4. Stability Pathfinder
5. Move Response (DC/DM/DR)

OBP Enablers:
1. OBP becomes Operationally Critical

PI 19 (Jan 26 - Apr 26)

Capabilities:
1. BM & Non-BM Slow Reserve
2. GC0166**
3. Move MW Dispatch
4. Optimisation within a Constraint

OBP Enablers:
1. EDT/EDL mastered from OBP
2. PEF Integration
3. CLOGS enhancement
4. Ready to decommission ASDP

Retire ASDP, VERGIL

Key:
- New
- Complete
- Moved
- **PI:** Programme Increment

Abbreviations: **DC:** Dynamic Containment **DM:** Dynamic Moderation **DR:** Dynamic Regulation **BOA:** Bid Offer Acceptance **DX:** Dynamic Response **VERGIL:** Versatile Graphical Instruction Logger **EDL:** Electronic Dispatch & Logging **EDT:** Electronic Data Transfer **ASDP:** Ancillary Services Dispatch Platform **CLOGS:** Contingency Logging System, **API:** Application programming interface, **NBM:** Non-BMU, **BMU:** Balancing Mechanism Unit

****Please note** – GC0166 was approved by Ofgem in October 2025 and has been committed to the delivery plan****

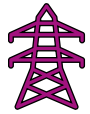
Changes to the Balancing Systems Release Plan

National Dispatch Optimisation: The delivery of OBP becoming Operationally Critical has been prioritised and will be released ahead of deploying further functionality. This enables us to accelerate delivery on to a single strategic platform with increased resilience. The National Dispatch Optimiser will be deployed in OBP in December, the first release after the go-live of OBP Strategic.

Pumped Storage BOAs: The delivery of OBP becoming Operationally Critical has been prioritised and will be released ahead of deploying further functionality. This enables us to accelerate delivery on to a single strategic platform with increased resilience. Pumped Storage BOAs will be deployed in OBP in December, the first release after the go-live of OBP Strategic.

GC0166: Grid Code change GC0166 introduces new parameters for storage devices. Following Ofgem approval in Oct 2025 we will implement the change on our strategic platform ahead of the transition of EDT/EDL.

Move MW Dispatch: We have been co-ordinating our work plans with those of the DNOs. To get better alignment we are proposing to move MW Dispatch to the period Jan 2026 to April 2026.

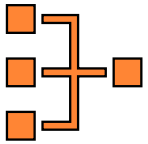


Optimisation within a Constraint: To allow further Proof of Concept testing we will deliver this capability between Jan 2026 and April 2026. We have provided a new capability in October 2025 to allow bulk dispatch (price-stack based) which can be used behind constraints and in several zones.

PEF Integration: OBP will integrate with PEF once PEF has completed its migration from the National Grid Azure Tenancy to the new NESO Azure tenancy. This is planned between Jan 2026 and April 2026.

Contingency Logging System (CLOGs) Enhancement: Following feedback from the Control Room we will provide an enhancement to CLOGs to enable it to work with OBP and BM systems simultaneously. This mitigates any operational risk to the unlikely event of an unplanned failure of the OBP system. This will be delivered ahead of the EDL/EDT transition between Jan 2026 and April 2026.

You Said, We Did . . .

Activity was needed to improve the use of assets behind a constraint		We continue to make improvements which enable more efficient use of assets behind a constraint – we have recently introduced two new pieces of functionality into OBP to support this – Margin Based Exclusions & Bulk Dispatch (price stack based) – You will hear more on these today.
Increased resilience of our EDT / EDL communication interfaces was required		We have modified our network design to ensure that this is addressed. The new design will provide cross-site resilience across both the EDT and EDL connections to the Open Balancing Platform.
Input into shaping the Programme's future roadmap		We engaged with you via our Stakeholder Focus Groups and Beyond 2025 workstream to generate insights which have fed into the NESO business plan for April 2026 – March 2028; we will provide an update on the roadmap today.
Valued interactive breakouts & specific sessions on topics inc. Dispatch Transparency		Today's event is packed full of interactive breakouts with opportunities for you to feedback and ask questions. We have also included a session on 'A day in the life of a Control Room Engineer' which is back by popular demand, alongside a breakout on 'Dispatch Transparency'.
Wanted to better understand OBP deliverables inc. what was being delivered, when, & the benefit		In the morning breakout sessions, you will walk through 3 of our capability journeys – dispatch, scheduling & ancillary services – exploring what has been delivered to date & what is still to come & the benefit.

NESO's Purpose, Vision & Strategic Goals for 2026–2031

Our purpose is to forge the path to a sustainable future for everyone.

Our vision is a future where everyone has access to reliable, clean and affordable energy; our work will be a catalyst for change across the global community.

Drive consumer value

Deliver a secure, resilient and operable energy system

Pave the way to sustainable energy

Lead as a trusted expert

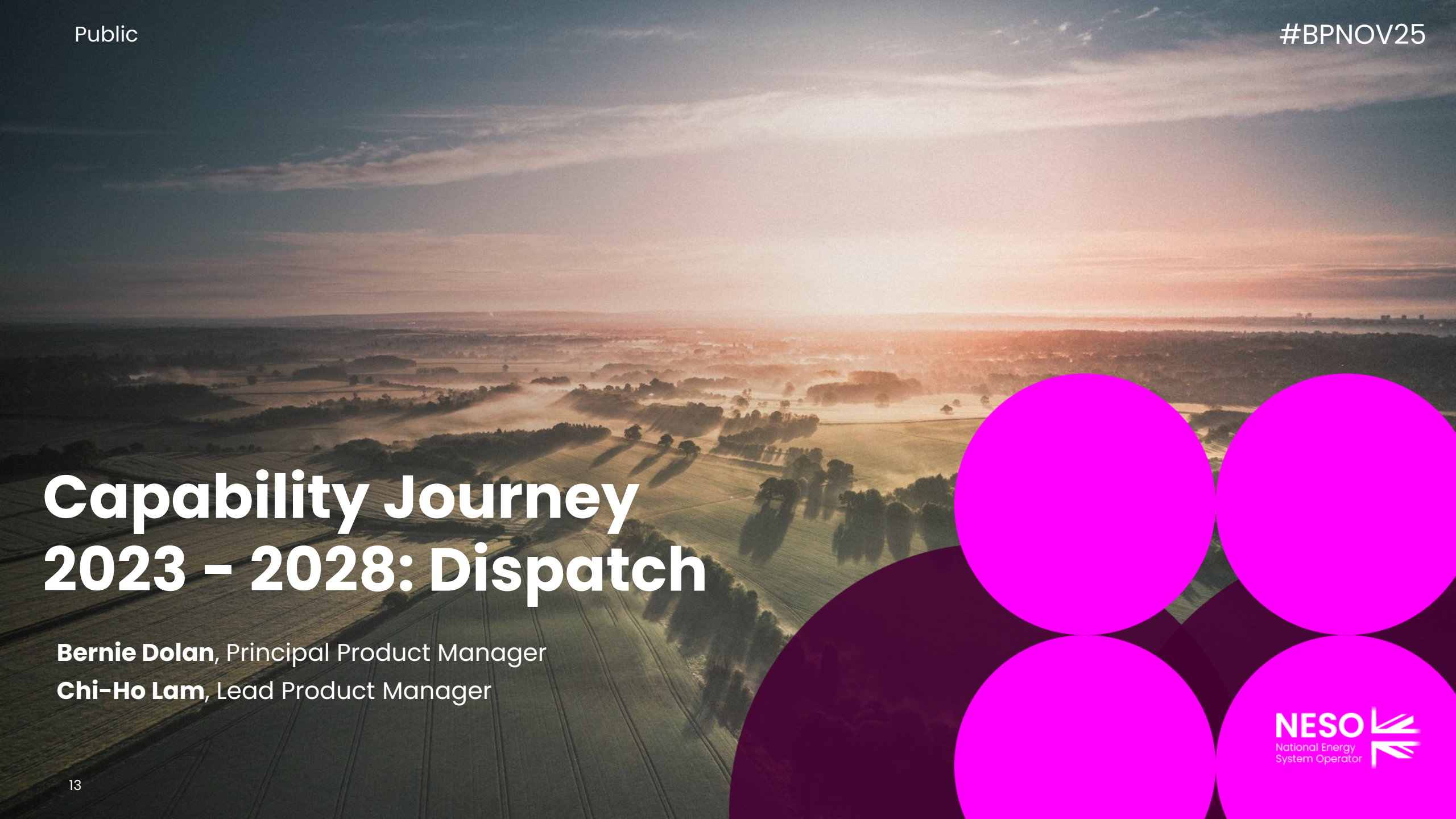
This Morning's Sessions: Capability Journey Exploration

Rotate across 3 breakout rooms (40 mins in each) exploring balancing transformation capability journeys - dispatch, scheduling, & ancillary services.

Hear what has been delivered to date & the impact/benefit of it, what is still to come between Dec 2025 - March 2028, how it will be used by the Control Room, and the anticipated impact & benefits.

Reflect & feedback on co-created journeys out to 2028.

#BPNOV25



Capability Journey 2023 – 2028: Dispatch

Bernie Dolan, Principal Product Manager
Chi-Ho Lam, Lead Product Manager

NESO
National Energy System Operator

2023 – 2028 Dispatch Capability Journey

Explore what has been delivered to date & the impact/benefit of it.

Outline what is proposed for delivery between December 2025 - March 2028, how it will be used by the Control Room, and the anticipated benefits for NESO operations, Industry, & the wider energy agenda.

The capabilities that you see have been shaped through a combination of external engagement (Industry events / webinars / focus groups) & internal NESO workshops.

DRAFT

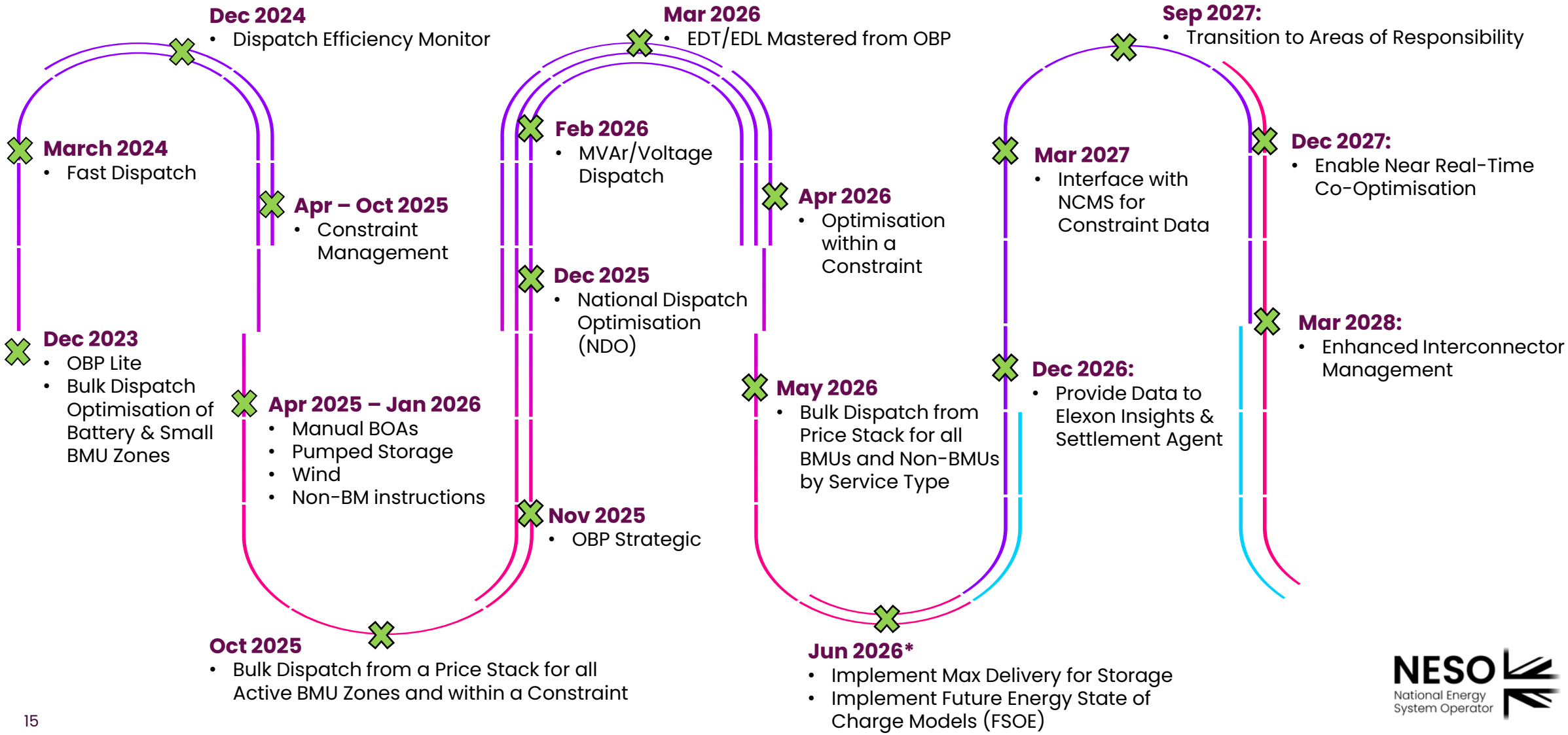
Capabilities from April 2026 – March 2028 are currently draft until the new business plan is officially signed off later in November – therefore may be subject to change.

Some of the capabilities are new functionality, whilst others are migrations from our legacy BM systems but with any identified enhancements included.

After the journey walk throughs, it's over to you! We want to hear your hopes, concerns, & questions on our draft capabilities between 2026 – 2028.

Let's dive in!

2023 – 2028 Dispatch Capability Journey



Public

Key:

- Drive Consumer Value
- Deliver a Secure, Resilient & Operable Energy System
- Pave the Way to Sustainable Energy
- Lead as a Trusted Expert
- Digital Enabler

Open Balancing Platform (OBP) Lite

System impacted: OBP

What does it do? New IT Platform in one data centre that accelerates digital transformation by providing a secure, scalable, and consistent environment for modern application development. Developers and testers can build, deploy, and manage microservices applications across hybrid clouds with development and test environments. Has supported 2 weekly release cadence from onset. Interface to/from OBP to existing BM system created.

Did it exist before? No – this is a new platform

Impact / Benefit to NESO operations: Easier to detect issues, monitor for failures and trace problems through the system; reduces planned outages through rolling deployments; agile way of working enables control room engineers feedback to shape the future releases.

Impact / Benefit to Industry: Early launch of bulk dispatch capability in battery and small BMU zone in response to Industry feedback.

Bulk Dispatch Optimisation of Battery & Small BMU Zones

Otherwise known as 'Target Dispatch'

System impacted: OBP

What does it do? Used by the control room to issue multiple instructions based on a least cost solution that satisfies the requirement in a semi-automated way (in one example it took seven button clicks in OBP to do the same in legacy systems took 600 button clicks).

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Reduces manual processes & time taken to issue a collection of instructions to smaller, flexible units.

Impact / Benefit to Industry: Supports activity to level the playing field across asset types, reducing skip rates for batteries & small BMUs; ultimately creating confidence for future investment in these flexible technologies.

£66m of annual benefits by use of flexible assets & reduced CO2 emissions

START → **Dec 2023** → **Dec 2023**

#BPNOV25

Fast Dispatch

System impacted: OBP

What does it do? Provides functionality to the control room to dispatch batteries quickly, providing a solution in <10sec, enabling it to be used in cases where immediate corrections to frequency are required.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Supports system security & reduces manual processes & time taken to issue a collection of instructions to flexible units.

Impact / Benefit to Industry: Supports activity to level the playing field across asset types, reducing skip rates for batteries; ultimately creating confidence for future investment in these flexible technologies.

Mar 2024

Dispatch Efficiency Monitor

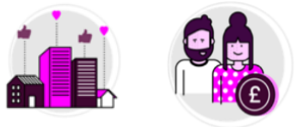
System impacted: Legacy BM systems

What does it do? Ability to monitor dispatch efficiency in near real-time.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Real time data on instructed dispatch visible to the control room desks to enable skip rate performance to be monitored.

Impact / Benefit to Industry: Improvements in economic dispatch; this new monitor has enabled the reporting of skip rate data on the NESO website.



Dec 2024

Constraint Management

System impacted: OBP

What does it do? The first release of this capability provided control engineers with enhanced situational awareness with new graphical screens showing when a constraint would be breached and providing data in a way to help resolve this. Subsequent releases provided the ability to manually create instructions within these screens, allowed easier system tagging of instructions and margin-based exclusions. This latter capability makes more units available to the optimisers for energy even if they are behind a constraint.

Did it exist before? No – this is new functionality.

Impact / Benefit to NESO operations: Provides reduction in workload and better economic decisions by providing superior situational awareness.

Impact / Benefit to Industry: Reduction in skips, including those behind constraints.

Apr-Oct 2025

Manual BOAs, Pumped Storage, Wind & Non-BM Instructions

System impacted: OBP

What does it do? Our legacy systems support rich functionality that allows control engineers to create and send instructions for a variety of services such as BOAs in the BM, Pumped Storage with their multiple states (spin gen etc), Wind units with Power Available and Forecast considerations and instructions to non-BM units. With the introduction of non-BM instruction support, both BM and non-BM units are "harmonised" to provide equal processing from a single system, with the non-BM Quick Reserve supported from OBP only.

Did it exist on our legacy BM/ASDP systems? Yes, albeit as separate systems. This is the first time Control Room have both BM and non-BM in a single system, allowing for example, a combined Price Stack.

Impact / Benefit to NESO operations: Control room can instruct both BM and non-BM in a single system and have greater situational awareness of the available resources.

Impact / Benefit to Industry: Supports activity to level the playing field across asset types, also leading to improved economic dispatch.

Apr 2025 -Jan 2026

Bulk Dispatch from a Price Stack for all active BMU Zones and within a Constraint

System impacted: OBP

What does it do? It provides the control room with an alternative method to choose units to fulfil a requirement - dispatch engineers select multiple units creating a bulk volume of energy in price merit order; instructions are then created in bulk and dispatched automatically.

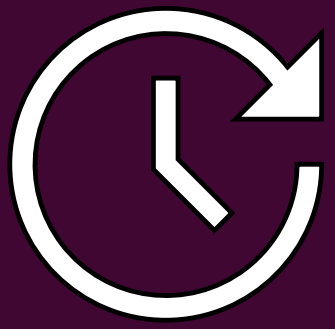
Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Provides control engineers with all information in one place and reduces the number of "button clicks" and manual workload.

Impact / Benefit to Industry: Reduction in skips, including those behind constraints by providing increased situational awareness to the control room & allowing easier dispatch of multiple smaller BMUs.

£46m of annual benefits by improved situational awareness & bulk dispatch

Oct 2025



Dispatch Capability Journey

November 2025 – March 2028

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OBP Strategic

System impacted: OBP

What does it do? A new deployment of the OBP system on strategic infrastructure and networking across multiple datacentres; removes the need for planned down-time & outages on the OBP system.

Did it exist on our legacy BM systems? No – this is a new platform.

Impact / Benefit to NESO operations: Increased resilience of dispatch by moving to an operationally critical platform; reduces use of telephone instructions which increases workload and is sub-optimal due to the impracticality of dispatching large numbers of small units using telephone.

Impact / Benefit to Industry: Market Participants will not have to deal with planned balancing system outages, which involve manual telephone dispatch and non-economic dispatch decisions.

Did you know, each two-hour outage has been estimated at a cost of £700k.

Nov 2025

National Dispatch Optimisation (NDO)

System impacted: OBP

What does it do? NDO co-optimises energy (generation vs demand) and mandatory frequency response while respecting transmission system constraints. NDO generates "advice" at individual unit level, running every five minutes to give a full solution for the GB system. The output MW of individual BMUs are aggregated by ZONE for dispatch – these are the target programs. ZONEs is a mechanism for managing the workload in the Control Room involved in issuing individual BOAs.

Did it exist on our legacy BM systems? The existing Legacy Dispatch Advisor (LDA) supporting BM is built on old technology which does not efficiently support today's energy technology landscape. The NDO solution provides enhancements to better manage flexible assets.

Impact / Benefit to NESO operations: Provide improved economic dispatch advice ensuring that units can be instructed in merit while respecting the physical constraints of the transmission system.

Impact / Benefit to Industry: Anticipated to improve economic dispatch and reduce skip rates.

Dec 2025

MVAr/Voltage Dispatch

System impacted: OBP

What does it do? Allows control room to send MVAr and target Volt instructions to BMUs. These instructions are used to manage voltage levels on the transmission system. This capability expands the use of OBP to new roles in the control room.

Did it exist on our legacy BM systems? Yes

Impact / Benefit to NESO operations: Transmission desk can send voltage control instructions from a system with a higher level of reliability.

Impact / Benefit to Industry: Reduced need for telephone instructions in the event of an IT outage. Also lays the foundation for future reactive power market initiatives.

Feb 2026

EDT/EDL Mastered from OBP

System impacted: OBP

What does it do? EDT/EDL are the main communication links between NESO and Market Participants. These systems are how we send and receive key market information, such as technical parameters and dispatch instructions.

Did it exist on our legacy BM systems? Yes – however the new network is more resilient and the strategic nature of OBP will remove the need for planned outages.

Impact / Benefit to NESO operations: More resilient communication systems and reduced use of telephone instructions which increases workload and is sub-optimal.

Impact / Benefit to Industry: More resilient communication systems and consistent economic dispatch.

Mar 2026

Optimisation within a Constraint

System impacted: OBP

What does it do? Currently control engineers can manage transmission system constraints using "Bulk Dispatch from a price stack"; this capability enhances this through use of an optimiser. A control room engineer sets requirements against constraint limit/margin and selects the BMUs involved in the constraint - the optimiser then considers variation in prices over time and the variation of technical parameters and returns a cost optimised solution consisting of multiple units which can be dispatched in one button click.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Further automation of control room processes reducing workload and supporting consistent decision making; supports handling of more complex unit characteristics.

Impact / Benefit to Industry: Reduction in skips for units behind a constraint.

Apr 2026

Bulk Dispatch from Price Stack for all BMUs and Non-BMUs by Service Type

System impacted: OBP

What does it do? Supports dispatch of BMUs and non-BMUs using a price stack that can be filtered by service, allowing inclusion or exclusion of services such as Quick Reserve, Slow Reserve etc. For example, If the control room required Quick Reserve with frequency deviating very fast, they can filter on all fast services irrespective of assets being BM or NBM and choose the most in merit. This builds upon the "harmonisation" logic allowing NBM and BM units to be dispatched "equally" from a single system, instead of the multiple systems and logic which are used in the Control Room today.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Provides enhanced situational awareness for dispatch decisions, with awareness of different service types suited to supporting a variety of transmission system scenarios.

Impact / Benefit to Industry: Reduction in skips, including those behind constraints.

May 2026

Implement Max Delivery for Storage

System impacted: OBP

What does it do? There is currently no clear provision of current/projected energy capacity for Limited Duration Assets (LDA) & NESO currently uses an interim arrangement to get around this - the '30-minute rule' - which requires providers to submit MEL/MIL values which can be sustained for a 30-minute period (with one minute ramp either side); this however limits how NESO use these assets. GC0166 parameters (Maximum Delivery Offer & Maximum Delivery Bid) will feed into OBP (bulk dispatch optimisation & price stack) for real-time dispatch, enabling LDAs to inform NESO of energy available over time, instead of NESO having to derive this from existing parameters not intended for this purpose.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Enhanced information for the management of LDAs, enabling more efficient use of them in balancing.

Impact / Benefit to Industry: Adapted Grid Code rules & implementation on OBP supports improved economic dispatch of these asset types.

Jun 2026*

**Tech April 2026*

Implement Future Energy State of Charge Models (FSOE)

System impacted: OBP

What does it do? As part of the GC0166 Grid Code change Limited Duration Assets will need to provide NESO with a FSOE – Application of FSOE to NDO allows for the optimisation of batteries over a period of a day so that NESO can evaluate available levels of reserve from these assets in planning timescales.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Improved longer-term, operational planning by NESO and better management of margins and constraints, with what-if analysis of future scenarios on the transmission system with better modelling of batteries.

Impact / Benefit to Industry: Higher confidence in Limited Duration Asset behaviour will assist in removing caps on how NESO use them for future reserve and scheduling, supporting improved commercial opportunity.

Jun 2026

Provide Data to Elexon Insights and Settlement Agent

System impacted: OBP

What does it do? To support market transparency and analysis, OBP will publish market information to the Elexon Insights solution. To ensure accurate financial settlement of market activities, OBP will publish necessary market information to the Settlement Agent.

Did it exist on our legacy BM systems? Yes

Impact / Benefit to NESO operations: Aids market to reduce balancing actions.

Impact / Benefit to Industry: This aids regulatory oversight and market participant understanding of OBP operations.

Dec 2026

Interface with NCMS for Constraint Data

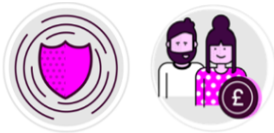
System impacted: OBP

What does it do? The NCMS is implementing a capability to run power network analysis tools that identify constraints in real-time. By interfacing directly with OBP we can make changes to constraint limits in shorter timescales as system conditions change.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Accurate forecasts allow for better decisions from both an economic and security point of view.

Impact / Benefit to Industry: With greater understanding of constraints there will be greater certainty in balancing actions.



Mar 2027

Transition to Areas of Responsibility

System impacted: OBP

What does it do? Move away from current zonal dispatch structure (e.g., battery, North Wind) to Areas of Responsibility that will allow dynamic allocation of work to desks based on workload.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: More flexibility for the Control Room with the ability to change distribution of work depending on system conditions.

Impact / Benefit to Industry: Improved economic dispatch.

Sep 2027

Enable Near Real-Time Co-Optimisation

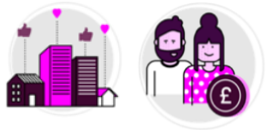
System impacted: OBP

What does it do? New response products will be included within the National Dispatch Optimiser, ensuring advice to the control room is accurate through the co-optimisation of energy with new response products in near real-time, while considering transmission constraints.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Supports automation of processes as new products are delivered into the control room so not increasing workload and ensuring most economic decisions are made.

Impact / Benefit to Industry: Ensures new products are instructed economically so reducing skips.



Dec 2027

Enhanced Interconnector Management

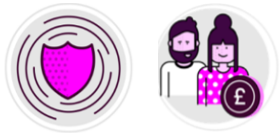
System impacted: OBP

What does it do? This will provide enhanced visibility of interconnector operational options within OBP and enable OBP to send emergency actions and instructions.

Did it exist on our legacy BM systems? Yes, but through a separate interconnector flow management system.

Impact / Benefit to NESO operations: Increased situational awareness and enhanced interconnector management capability.

Impact / Benefit to Industry: Supports security of supply and market integration through OBP.



Mar 2028

EDT / EDL Transition Update

Making OBP fully operationally critical in the Control Room

Upgrading EDL and EDT software and networks

Getting the Control Room ready to use OBP for all instructions

#BPNOV25

Now it's over to you!

- On each table there are sticky notes, a prompt sheet, and print outs of our dispatch journey.
- Capture your thoughts on the sticky notes and add them to the print outs on the wall.
- Questions captured on the print outs will be collated for the afternoons Q&A session.

#BPNOV25

What are your Reflections on the 2026 - 2028 Dispatch Journey?

NESO National Energy System Operator

Hopes

Prompts:

1. Which aspects of our dispatch journey are you most pleased or encouraged to see included?

Concerns

Prompts:

1. Do you have any concerns with the proposed capabilities in our dispatch journey? Please describe.

Do you have any Questions?

Prompts:

1. Do you have any questions on our dispatch journey between 2026 -2028?
2. Are there any capabilities you would like clarity / more information on? How would you like this communicated e.g., deep dive at future event / focus group etc.

Next Steps

- The feedback you have provided to us on our dispatch journey is important in helping us understand capabilities you require more information on and any concerns you have, so we can work collectively together to resolve these.
- Key questions & themes captured will be discussed in the afternoons Q&A session.
- If you think of any further questions after this session – don't forget to add them to Slido, so we can pick them up in the Q&A.

Thank you for your participation !

#BPNOV25

Capability Journey 2023 - 2028: Ancillary Services

Neil Morgans, Principal Product Manager

Jon Wisdom, Head of Market Change Delivery

Ayumu Suzuki, Product Manager

NESO
National Energy System Operator

Public

2023 – 2028 Ancillary Services Capability Journey

Explore what has been delivered to date & the impact/benefit of it.

Outline what is proposed for delivery between December 2025 - March 2028, how it will be used by the Control Room, and the anticipated benefits for NESO operations, Industry, & the wider energy agenda.

The capabilities that you see have been shaped through a combination of external engagement (Industry events / webinars / focus groups) & internal NESO workshops.

DRAFT

Capabilities from April 2026 – March 2028 are currently draft until the new business plan is officially signed off later in November – therefore may be subject to change.

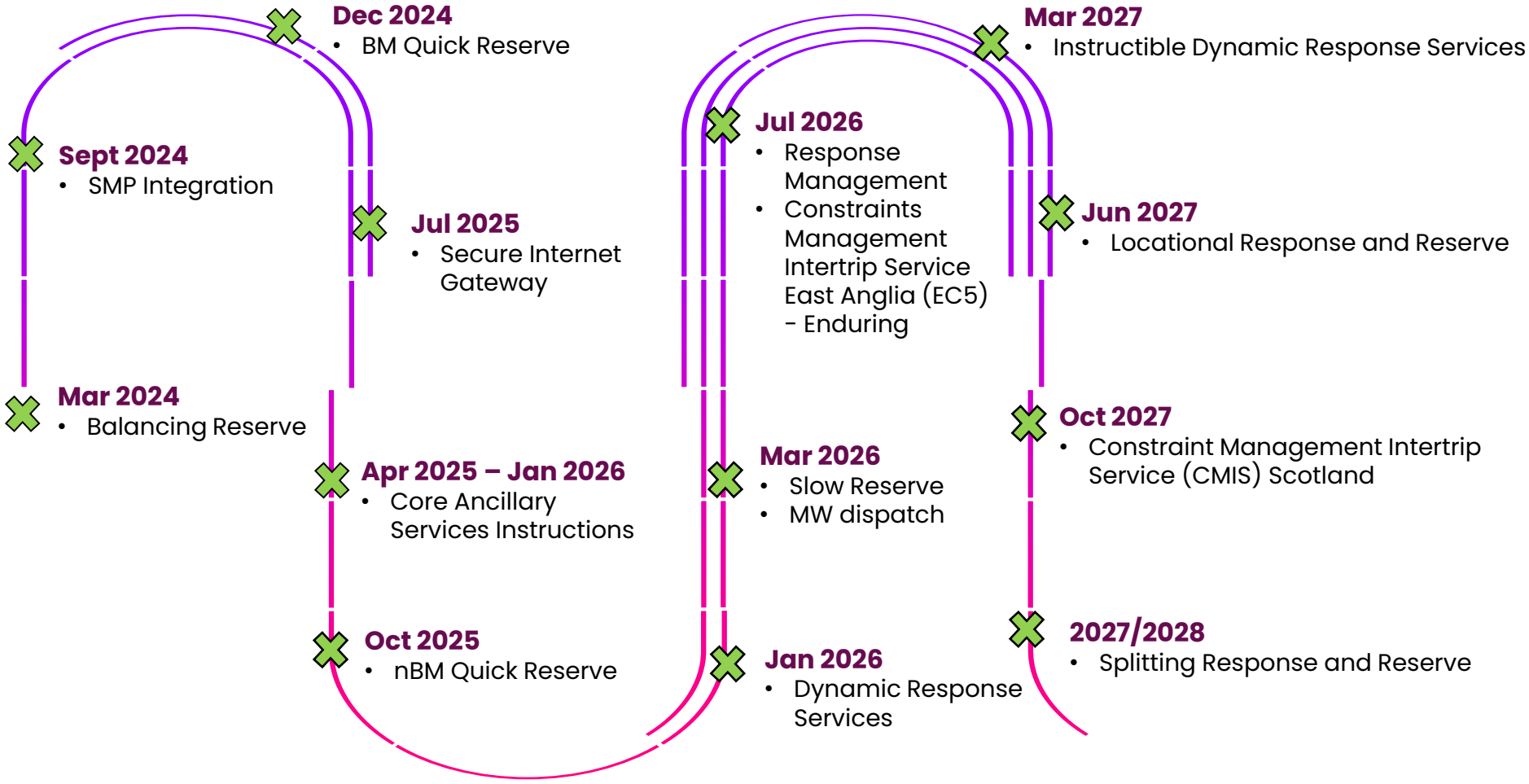
Some of the capabilities are new functionality, whilst others are migrations from our legacy BM systems but with any identified enhancements included.

After the journey walk throughs, it's over to you! We want to hear your hopes, concerns, & questions on our draft capabilities between 2026 – 2028.

Let's dive in!

#BPNOV25

2023 – 2028 Ancillary Services Capability Journey



Public

Key:

- Drive Consumer Value
- Deliver a Secure, Resilient & Operable Energy System
- Pave the Way to Sustainable Energy
- Lead as a Trusted Expert
- Digital Enabler

Balancing Reserve

System impacted: OBP & BM

What does it do? Provides the ENCC with guaranteed reserve capacity ahead of real-time operations. This is instructed within the Balancing Mechanism.

Did it exist before? No – this is new functionality that complements existing Services.

Impact / Benefit to NESO operations: Ensures contracted Balancing Reserve is available, reducing reliance on optional Balancing Mechanism offers which may not be available. Improvement in available margins and hence security of supply.

Impact / Benefit to Industry: Additional transparency at day-ahead stage and incentivisation to market participants of the price of Balancing Reserve. Supporting wider renewable participation in services.

More economic dispatch saving up to £35m per year

SMP Integration

System impacted: OBP

What does it do? Integrates SMP with OBP to provide a single authoritative source for unit registration data, Service pre-qualification status and Auctioned contract details.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Enhanced planning capability with fewer workarounds through timely access to auctioned reserves. Improved visibility of contracted reserves available for dispatch, enabling more efficient and cost-effective system operations.

Impact / Benefit to Industry: New automation streamlines onboarding for market participants, reducing costs and enabling earlier market entry. This fosters greater competition and expands opportunities across the market.

START

Mar 2024

Sept 2024

#BPNOV25

Quick Reserve

System impacted: BM & OBP

What does it do? Pre-contracted rapid reserve service that can be activated within one minute.

Did it exist before? No – this is new functionality that replaces legacy Optional Fast Reserve.

Impact / Benefit to NESO operations: Ensures quick reserve is available which allows recovery of Response services to respond to future events and maintain operational confidence. improving system resilience and frequency stability and reduces risk of instruction of more expensive services.

Impact / Benefit to Industry: Provides day-ahead transparency on Quick Reserve pricing and creates clear incentives for market participants. Supports broader renewable participation in ancillary services.

More economic dispatch potentially saving up to £60m per year

Secure Internet Gateway

System impacted: OBP

What does it do? New network and infrastructure that enables secure connectivity from internet to Critical Network Infrastructure (CNI) data centres with minimal complexity, used to connect internet based nBM providers to OBP.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Allows CNI and internet-based participants to be harmonised in a single system and price stack. Allows dispatch across the internet for the first time in OBP.

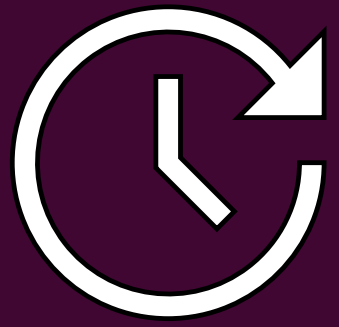
Impact / Benefit to Industry: Faster connectivity of non-CNI system allowing digitally transformed business processes for control room. This will enable nBM APIs.

Did you know? This enabled the launch of nBM in OBP which will result in more economic dispatch

Dec 2024 (BM)

Oct 2025 (nBM)

July 2025



Ancillary Services Capability Journey

November 2025 – March 2028

NESO
National Energy System Operator

Core Ancillary Services Instructions

System impacted: OBP

What does it do? Enables the delivery of Ancillary Service instructions (Mandatory Frequency Response, Synchronous Compensation, Reactive Power, LF Relay & Fast Start) directly within OBP, removing reliance on legacy Balancing Mechanism (BM) processes. Instructions will be issued from OBP without changes to existing control room operating practices.

Did it exist on our legacy BM systems? Yes

Impact / Benefit to NESO operations: Improves operational efficiency and resilience by migrating instruction workflows from legacy systems.

Impact / Benefit to Industry: Supports more economic dispatch and security of supply by enabling faster and more reliable service execution.

Apr 2025 -Jan 2026

Dynamic Response Services

System impacted: OBP

What does it do? Provides the Control Room with functionality to disarm and rearm Dynamic services (Dynamic Containment, Moderation, Regulation) within OBP.

Did it exist on our legacy BM systems?
Yes – This is migrating existing functionality from legacy systems.

Impact / Benefit to NESO operations: Enhances operational flexibility and security of supply by enabling rapid response to stability issues without relying on legacy tools, reducing risk during transition.

Impact / Benefit to Industry: Indirect benefit through improved system resilience and reduced risk of system instability.

Jan 2026

Slow Reserve

System impacted: OBP

What does it do? Provides reserve capacity to restore system balance following a major fault or largest loss event, ensuring security during recovery periods.

Did it exist on our legacy BM systems? No – this is new functionality. This will replace Short Term Operating Reserve (STOR).

Impact / Benefit to NESO operations: Enhances system resilience by enabling controlled post fault recovery.

Impact / Benefit to Industry: Expands opportunities for participation across a wider range of assets and markets.

More economic dispatch

Mar 2026

MW Dispatch

System impacted: OBP

What does it do? Enables ENCC to issue MW curtailment (dispatch/cease) instructions to DNO/DER units to manage transmission constraints; current service is "turn-to-zero" for pre-fault thermal export constraints.

Did it exist on our legacy BM systems? Yes – This is migrating existing functionality from legacy systems.

Impact / Benefit to NESO operations: Consolidates DNO/DER dispatch into OBP and provides merit-order based curtailment behind a boundary. Standardised interfaces for ENCC reduces complexity of decision making.

Impact / Benefit to Industry: Reduces reliance on ad-hoc constraint actions by providing a structured, lowest-cost curtailment route for DER during constraints, contributing to more economic dispatch. Standardised provider interfaces.

Mar 2026

Response Management

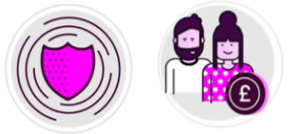
System impacted: OBP

What does it do? Provides real-time system security assessment and dynamic frequency response capability, enabling the Control Room to monitor/manage system security across the network.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Improves situational awareness and operational decision-making by integrating frequency risk forecasting and dynamic response actions into OBP.

Impact / Benefit to Industry: Supports system resilience and reduces risk of instability, and greater security of supply. Results in more economic dispatch.



Jul 2026

Constraints Management Intertrip Service East Anglia (EC5) - Enduring

System impacted: OBP

What does it do? Delivers an enduring intertrip service for the EC5 (East Anglia) boundary enabling automatic disconnection of armed generation units within 200ms following a network fault.

Did it exist on our legacy BM systems?
No – this is new functionality.

Impact / Benefit to NESO operations: Improves operational flexibility, reduces pre-fault curtailment and allows the Control Room to run circuits closer to thermal limits without breaching security standards.

Impact / Benefit to Industry:
Supports more efficient balancing actions through reduction in pre-fault curtailment.

£170m savings from efficient dispatch over life of service

Jul 2026

Instructible Dynamic Response Services

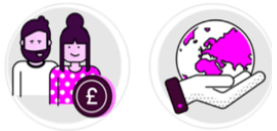
System impacted: OBP

What does it do? Adds real-time instruction capability to Dynamic services (Dynamic Containment, Moderation, Regulation).

Did it exist on our legacy BM systems? No – this is new functionality replacing Mandatory Frequency Response.

Impact / Benefit to NESO operations: Improves system security and operational flexibility by reducing over-procurement of day-ahead services and enabling targeted response when needed.

Impact / Benefit to Industry Greater transparency with more efficient instructions over a reduced number of markets. Supports decarbonisation by enabling greater participation of low-carbon technologies.



More economic dispatch saving ~£15m per year.

Mar 2027

Locational Response and Reserve

System impacted: OBP

What does it do? Enables NESO to procure response and reserve requirements on a locational basis.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Improves system security and operational flexibility by procuring day-ahead services considering network constraints.

Impact / Benefit to Industry: Enables participation to a wider spread of potential markets.

More economic dispatch saving between £12.5m to £30m per year

Jun 2027

Constraint Management Intertrip Service (CMIS) Scotland

System impacted: OBP

What does it do? Builds on the existing capability of the Scottish B6 boundary CMIS, which is to expire in September 2027. The new service will encompass B6 and wider boundaries in Scotland.

Did it exist on our legacy BM systems? Yes, with enhanced capabilities.

Impact / Benefit to NESO operations: Improves constraint management in Scotland by extending the contracts to wider boundaries, in addition to the existing B6 boundary. Improves operational flexibility, reduces pre-fault curtailment and allows the Control Room to run circuits closer to thermal limits without breaching security standards.

Impact / Benefit to Industry: Reduction in skips for units behind a constraint. Enables greater renewable participation from less constraint actions.

Oct 2027

Splitting Response and Reserve

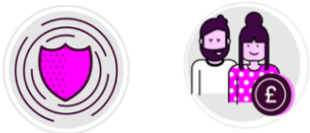
System impacted: OBP

What does it do? Enables providers to split capacity across multiple services in the same settlement period.

Did it exist on our legacy BM systems? No – this is new functionality.

Impact / Benefit to NESO operations: Increased provision of Response & Reserve Services.

Impact / Benefit to Industry: Enables more flexibility to providers in the participation across markets. Results in more economic dispatch.



2027/28

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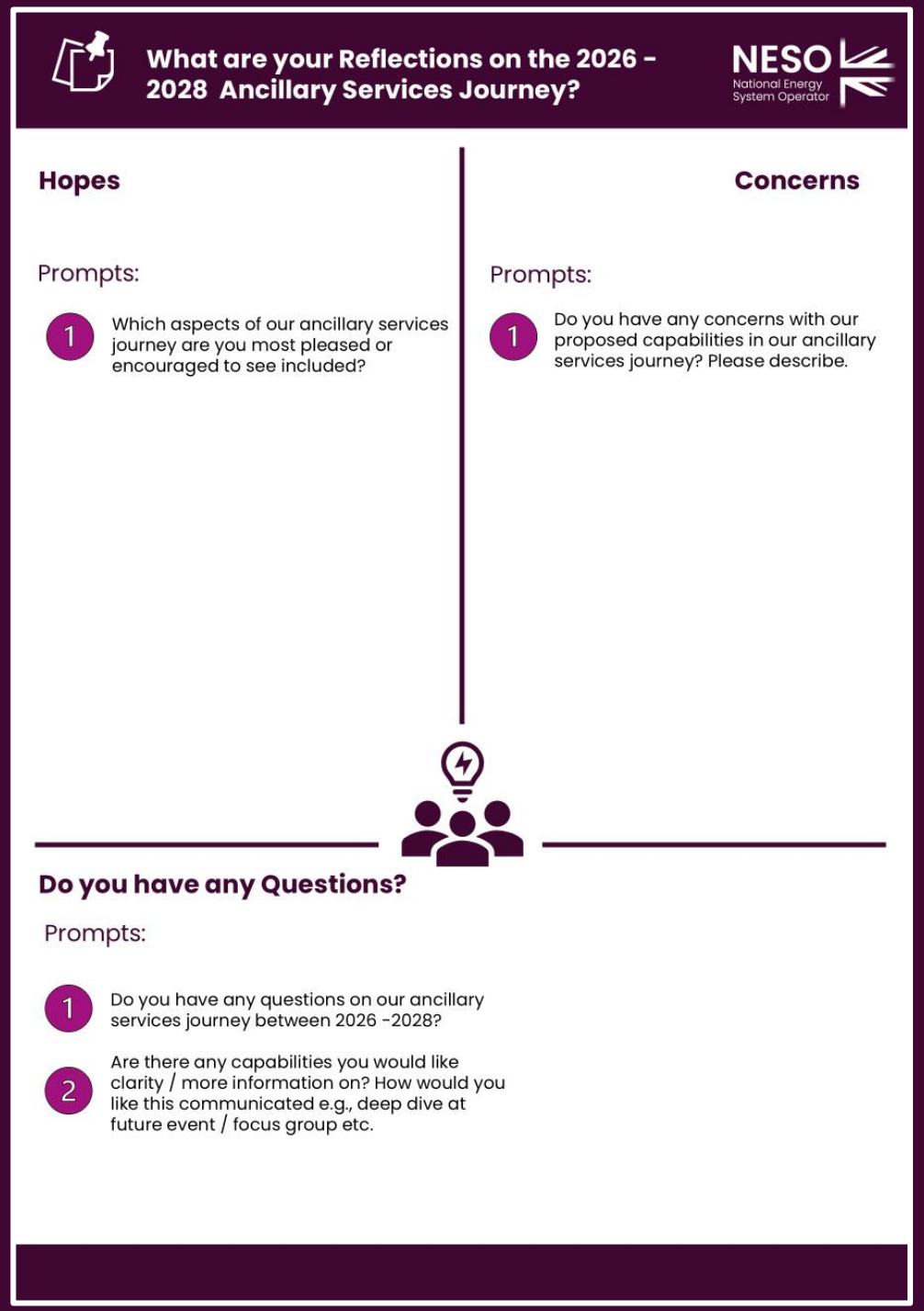

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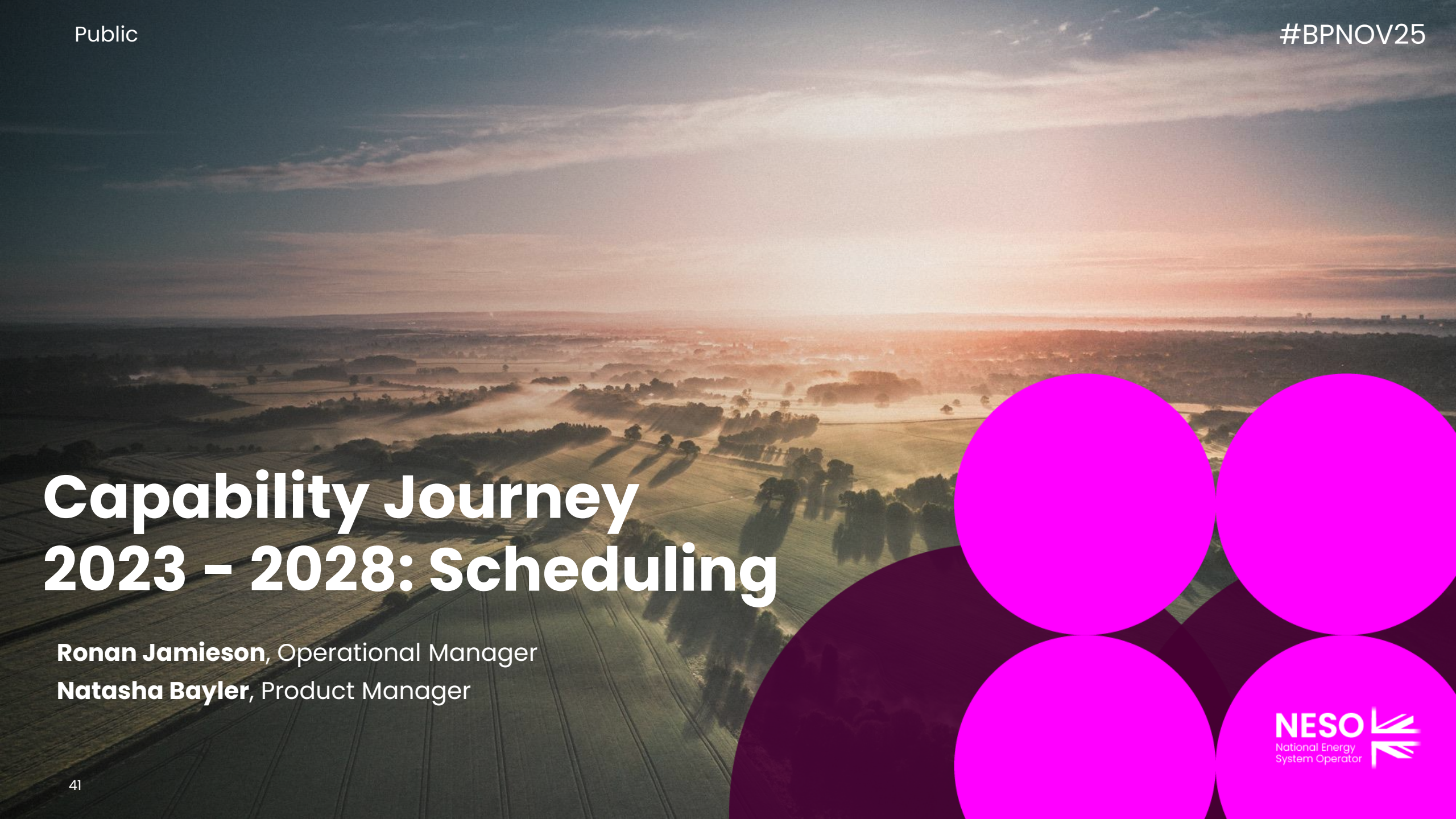

Capability Journey 2023 – 2028: Scheduling

Ronan Jamieson, Operational Manager
Natasha Bayler, Product Manager

NESO
National Energy System Operator

2023 – 2028 Scheduling Capability Journey

Outline what is proposed for delivery up to March 2028, how it will be used by the Control Room, and the anticipated benefits for NESO operations, Industry, & the wider energy agenda.

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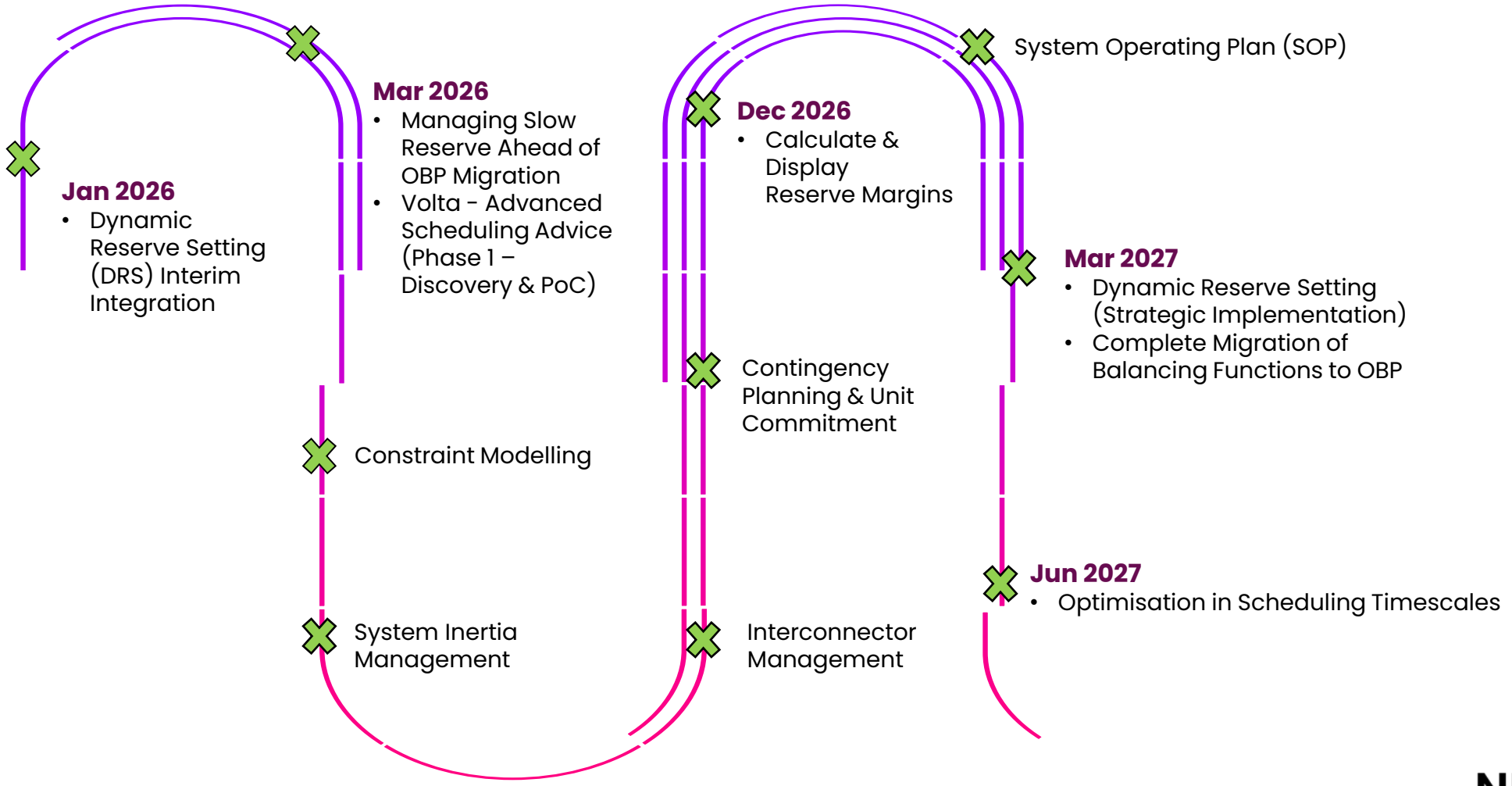
Let's dive in!

2023 – 2028 Scheduling Capability Journey



NESO
National Energy System Operator

Public

Key:

- Drive Consumer Value
- Deliver a Secure, Resilient & Operable Energy System
- Pave the Way to Sustainable Energy
- Lead as a Trusted Expert
- Digital Enabler

Dynamic Reserve Setting (DRS) Interim Integration

System impacted: BM - SPICE

What does it do? DRS adjusts reserve requirements based on current conditions (e.g., wind, temperature, time of day) and largest loss analysis.

This capability will enable machine learning driven recommendations to be uploaded in the current Scheduling system, SPICE, replacing static BST/GMT reserve requirements. This serves as an interim solution until required scheduling functions are moved to OBP.

Did it exist before? No – This is new functionality

Impact / Benefit to NESO operations: Enhances operational decision-making by incorporating dynamic reserve requirements, reducing reliance on fixed assumptions. Improves security of supply during periods of uncertainty.

Impact / Benefit to Industry: Supports innovation and modernisation of reserve-setting processes, enabling more accurate and cost-efficient procurement of reserve services.

DRS is anticipated to deliver a **£29m** per annum saving

Managing Slow Reserve Ahead of OBP Migration

System impacted: BM – SPICE

What does it do? Provides functionality on the current system to identify, manage and model contracted Slow Reserve capacity ahead of full migration to OBP. This ensures sufficient reserve is available to restore energy balance following major faults or largest loss events during recovery periods.

Did it exist before? No – This is new functionality

Impact / Benefit to NESO operations: Maintains operational resilience during the transition to OBP by ensuring reserve capability is managed effectively on existing platforms. Reduces risk of cascading failures and recover security of supply.

Impact / Benefit to Industry: Supports continuity of reserve services during transition to OBP. Expands opportunities for participation across a wider range of assets and markets.

Helps stabilise consumer costs by avoiding expensive last-minute interventions.

START

Jan 2026

Mar 2026

Volta - Advanced Scheduling Advice (Phase 1 – Discovery & PoC)

System impacted: Innovation Project

What does it do? Explores cutting edge machine learning and AI techniques for scheduling advice. This tests AI-assisted decision support for OBP schedulers and delivers an early Proof of Concept (PoC).

Did it exist before? No – Innovation project

Impact / Benefit to NESO operations: Supports future innovation in security of supply & scheduling methodologies, whilst identifying potential for improved optimisation and operational efficiency, through enhanced user decision making in scheduling, using ML/AI.

Impact / Benefit to Industry: No direct benefit to Industry at this stage.

Mar 2026

Constraint Modelling

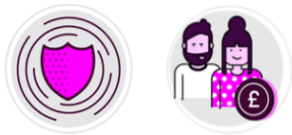
System impacted: OBP

What does it do? Models expected constraint margins based on the output of units behind the constraint boundary and the expected demand within the area. If the constraint limits are violated, allows users to plan necessary actions to stay at or below the set limits. This capability also includes scheduling voltage services with consideration for inertia and other stability requirements to maintain secure system operation.

Did it exist before? Yes – functionality is moving to OBP with any identified additional improvements to existing process included.

Impact / Benefit to NESO operations: Reduces reliance on legacy systems and improves efficiency of voltage and constraint requirement resolution whilst maintaining system stability.

Impact / Benefit to Industry: Supports cost-efficient management of voltage and constraints, while reducing curtailment.



System Inertia Management

System impacted: OBP

What does it do? Analyses operational conditions to identify the largest possible generation or demand loss, as well as the required response and system inertia requirements, to ensure security of supply.

Did it exist before? Yes – functionality is moving to OBP with any identified additional improvements to existing process included.

Impact / Benefit to NESO operations: Improves situational awareness and reduces risk of instability, supporting security of supply during low-inertia conditions; reducing risk of costly emergency actions.

Impact / Benefit to Industry: Facilitates efficient procurement of stability services and supports integration of low-carbon technologies.

Interconnector Management

System impacted: OBP

What does it do? Models interconnector schedules and identifies opportunities for interconnector trading to assist with Reserve procurement. This capability also enables the modelling of expected and enacted trades.

Did it exist before? Yes – functionality is moving to OBP with any identified additional improvements to existing process included.

Impact / Benefit to NESO operations: More effective ENCC processes interconnector trading decision making & improved security of supply.

Impact / Benefit to Industry: Facilitates efficient interconnector trading and enhances market liquidity.

Contingency Planning & Unit Commitment

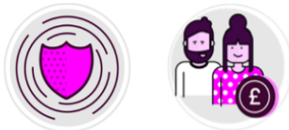
System impacted: OBP

What does it do? Models contingency reserve requirements over all timescales, enabling the control room to take necessary actions to solve any margin shortfall by scheduling sync and de-sync events for available units.

Did it exist before? Yes – functionality is moving to OBP with any identified additional improvements to existing process included.

Impact / Benefit to NESO operations: Improves operational efficiency and confidence increasing security of supply; reduces risk of costly interventions.

Impact / Benefit to Industry: Supports efficient market participation.



Calculate & Display Reserve Margins

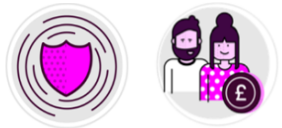
System impacted: OBP

What does it do? This enables the calculation and clear visibility of operating reserve and margins across a range of timescales and locations (geospatial). It allows users to identify any shortfall in available margins resulting from constraints and other limiting factors, and to plan actions to resolve.

Did it exist before? Yes – functionality is moving to OBP with any identified additional improvements to existing process included.

Impact / Benefit to NESO operations:. Streamlines workflows and improves resilience by removing dependency on multiple systems. Improves situational awareness and reduces risk of insufficient reserve capacity thereby increasing security of supply.

Impact / Benefit to Industry: Facilitates more efficient procurement & utilisation of reserve, supporting market confidence and transparency.



Dec 2026

System Operating Plan (SOP)

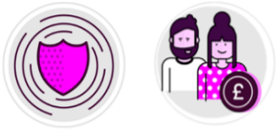
System impacted: OBP

What does it do? Enables the creation of a consolidated SOP that demonstrates system demand and reserve requirements are met economically while maintaining security of supply. Identifies potential actions to increase capacity or improve margins if required.

Did it exist before? Yes – functionality is moving to OBP with any identified additional improvements to existing process included.

Impact / Benefit to NESO operations:
Enhanced decision making and potential increases in security of supply and planning accuracy from reduced manual effort/data entry.

Impact / Benefit to Industry: Provides clearer signals on system needs, supporting efficient scheduling and market confidence.



Dynamic Reserve Setting (Strategic Implementation)

System impacted: OBP

What does it do? To productionise and integrate the DRS models into scheduling process on an enduring basis.

Did it exist before? No – This is new functionality

Impact / Benefit to NESO operations:.
Enhances operational decision-making by incorporating dynamic reserve levels, across the day reducing reliance on fixed assumptions. Improves security of supply during periods of higher uncertainty.

Impact / Benefit to Industry: Enabling more accurate and cost-efficient procurement of reserve services.

Mar 2027

Complete Migration of Balancing Functions to OBP

System impacted: OBP

What does it do? OBP has taken over all scheduling and dispatch capabilities allowing retirement of BM systems.

Did it exist before? No

Impact / Benefit to NESO operations: Operational efficiencies and reduction in manual effort, with all functions streamlined into one modern & resilient system, which is adaptable to future requirements & has reduced downtime.

Impact / Benefit to Industry: OBP is adaptable to future market changes and new technologies; reduced downtime and market risk.

Subsequent Relevant Milestones:

- Retirement of BM SPICE – Sept 2027
- Full Decommissioning of BM Systems - Dec 2027

Mar 2027

Optimisation in Scheduling Timescales

System impacted: OBP

What does it do? OBP will optimise the commitment of units in scheduling timescales to meet the required system needs for voltage, inertia, reserve, response and constraints. Integrates learnings from the Volta Advanced Scheduling Advice Proof of Concept - AI-driven Scheduling Advisor.

Did it exist before? No – This is new functionality.

Impact / Benefit to NESO operations: Delivers cost-effective security of supply by automating optimisation decisions, reducing reliance on manual processes and improving decision making.

Impact / Benefit to Industry: Supports efficient market behaviour.

Jun 2027

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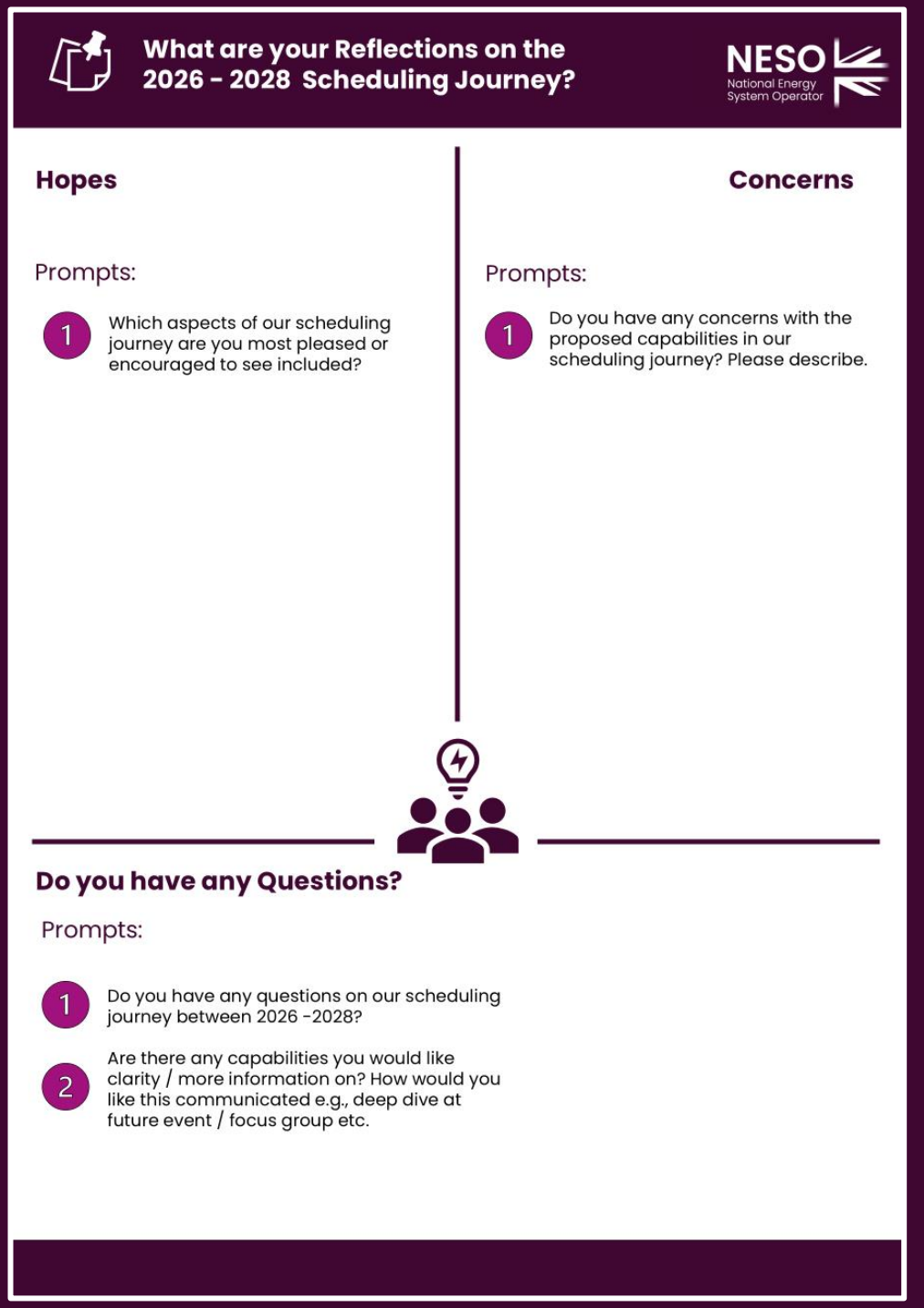

Next Steps

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Thank you for your participation !

#BPNOV25

This Afternoon's Sessions

13:10 – 16:00

OBP Functionality Demo

A Day in the Life of a Control Room Engineer

Dispatch Transparency Journey

#BPNOV25

A Day in the Life of a Control Room Engineer

Alex Carter, Operational Manager

Ronan Jamieson, Operational Manager

NESO
National Energy System Operator

Control Room Teams

Power System Manager (PSM)

Brendan Lyons

Strategy Team

Ronan Jamieson

- Operational Strategy Manager (OSM)
- Control Technical Assistant (CTA)
- Assistant National Scheduling Engineer (aNSE)
- National Scheduling Engineer (NSE)
- Transmission Analysis Engineer- Scotland (TAEs)
- Transmission Analysis Engineer- E&W (TAEe&w)
- Day Ahead Congestion Forecasting Engineer (DACF)

Energy Team

Alex Carter

- Operational Energy Manager (OEM)
- National Balancing Engineer (NBE)
- Assistant National Balancing Engineer South (aNBE)
- Assistant National Balancing Engineer North (aNBE)
- Assistant National Balancing Engineer – Battery (additional post added)

Transmission Team

- Transmission Security Manager (TSM)
- Transmission Security Engineer- Scotland North(TSESc-n)
- Transmission Security Engineer- Scotland South(TSESc-s)
- Assistant Transmission Security Engineer – E&W North (aTSEe&wn)
- Transmission Security Engineer- E&W North(TSEe&wn)
- Transmission Security Engineer- E&W South(TSEe&ws)
- Assistant Transmission Security Engineer – E&W South (aTSEe&ws)

Managing the System

Network Access Planning (NAP) Team

Carryout network analysis using the offline transmission analysis tool (OLTA) in a time frame from 8+ year ahead to 24 hour ahead – produce outage plan.

Trading Team

Energy Market, sufficient margins

Energy Forecasting Team

National Demand
Solar, wind, GSP demand

Systems:
- Energy Forecasting System (EFS)
- Platform for Energy Forecasting (PEF)

Handover of outage notes

Handover of Transmission System Operating Plan (TSOP)

Strategy Team

Plan for security of the system based on Security & Quality of Supply Standard (SQSS), from 24 hours to 4 hours ahead of time.

Scheduling, System Operating Plan, Margin Analysis, Data Processing and Profiling

System: Scheduling Platform in Controlled Environment (SPICE)

Handover of System Operating Plan (SOP)

Real Time Operation

Transmission Team

- Monitoring & managing System flows, outages, faults, and voltages following SQSS to ensure Security of the System.

Energy Team

- Monitoring & managing System Frequency following SQSS, and Transmission Constraints.
- Demand Prediction, Dispatch Advice, Energy Balancing i.e., Issuing Instructions (BM & Non-BM), Ancillary Service Management.

Systems:
- System Operation in Real-Time (SORT)
- Versatile Graphical Instruction Logger (VERGIL)
- Contingency Logging System (CLOGS)
- Open Balancing Platform (OBP)
- Ancillary Services Dispatch Platform (ASDP)

Strategy Team & Scheduling

Why now?

- Balancing Programme are kicking off the Scheduling Journey
- Managing constraints are a key part of this journey
- Strategy, Energy and Transmission teams work in harmony to manage constraints but across different timescales

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Main Activities within Scheduling

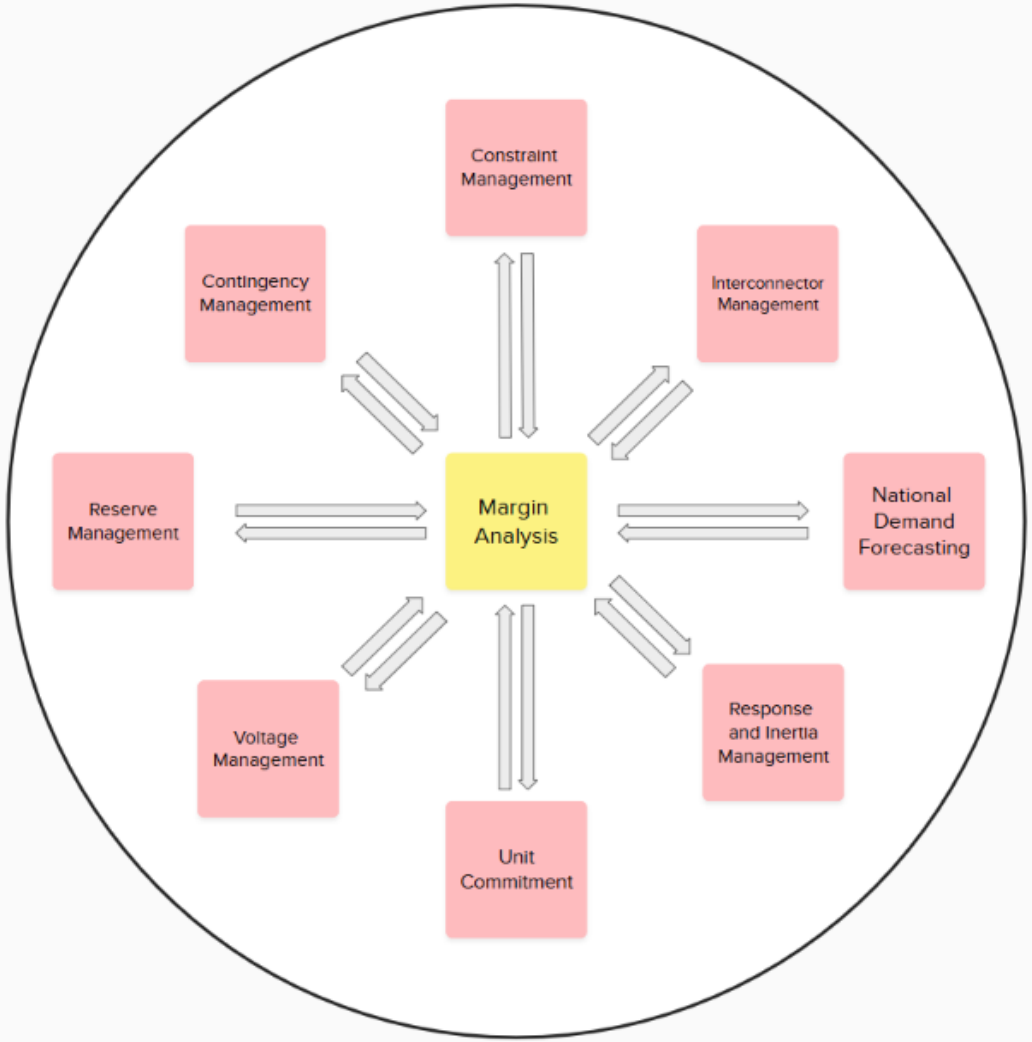
Margin Analysis combines:

- Market submissions
- Forecast demand
- Reserve requirements
- Constraint
- NESO changes

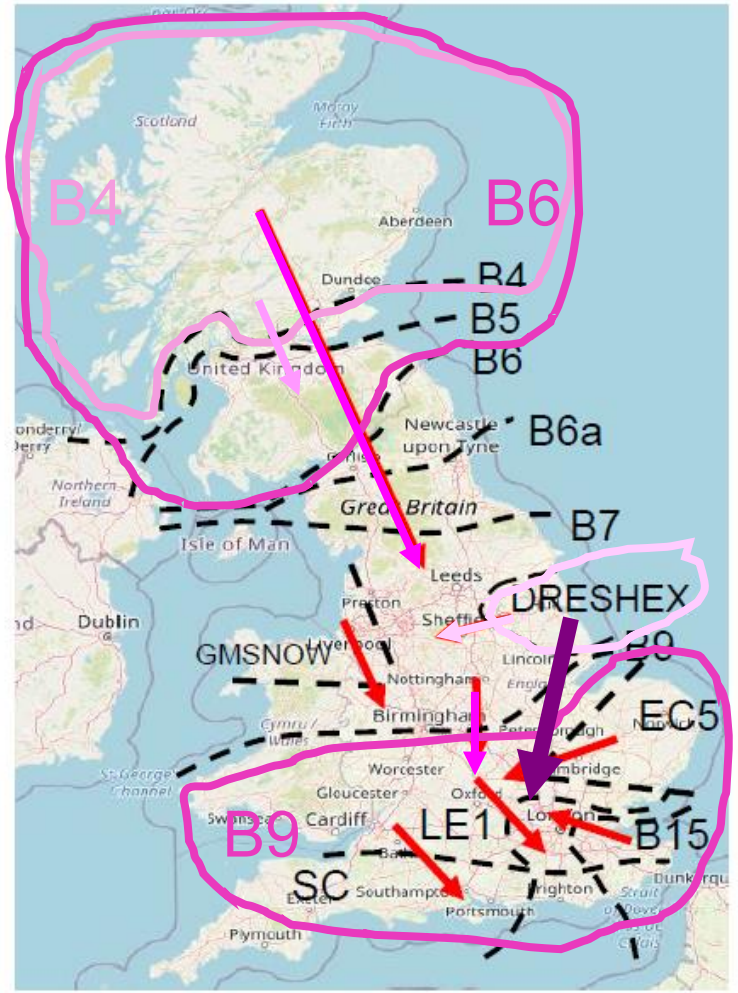
Ensures Security and Quality of Supply Standards (SQSS) and Balancing Principles commitments

System Operating Plan (SOP) delivered to Energy team

Continual manual process as data continually changes



Constraint Types and Interactions



Types

- Export (SCOTEX/B6)
- Import (FLOWSTH/B9)

Interactions

- Complimentary (DRESHEX/B9)
- Nested (B4/B6)
- Generator location/effectiveness

Typically monitor 30-40 constraints

0 to 10 will be active at any one time

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Constraints in Strategy Timescales

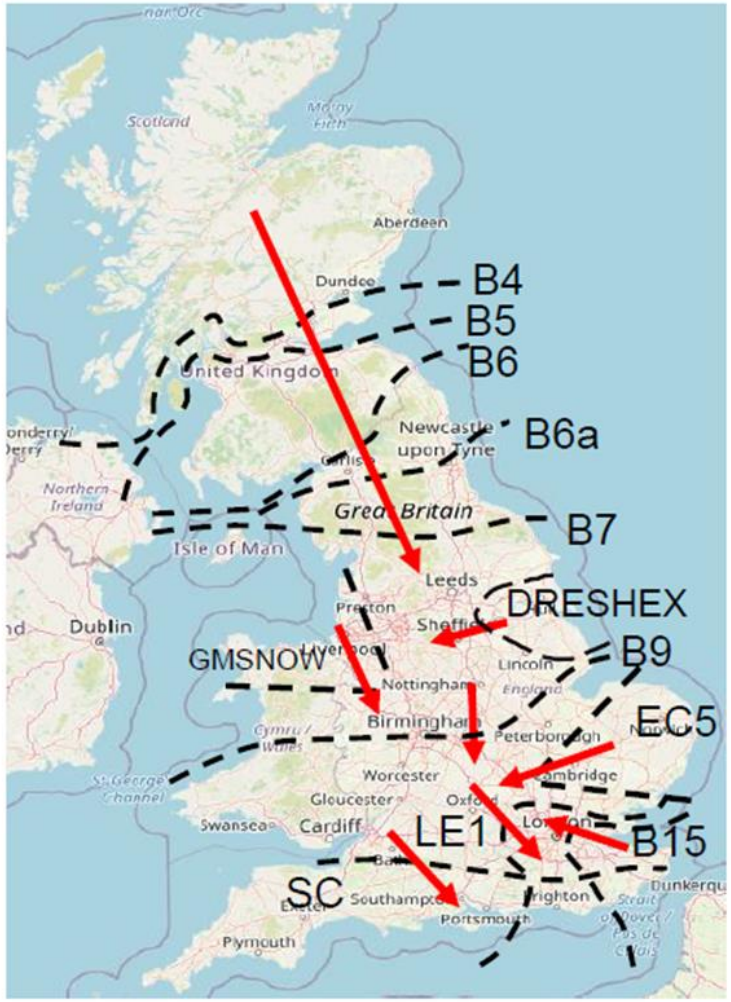
At Day Ahead

- Planned access to network to manage maintenance, connect new assets can cause constraints on the network – handed over by Network Access Planning (NAP) Team

In Real time

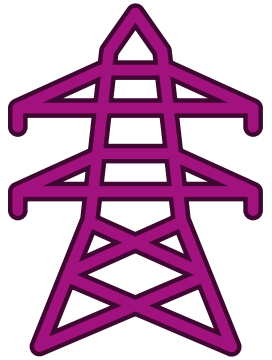
- Unplanned changes to network topology – can be caused by equipment faults, storms, etc.
- Unexpected large changes in network flows – caused by changes in demand, generation and interconnectors flows, etc.
- Strategy team provide longer term analysis to real time teams and manage constraint limits.

Boundary	Max. Capacity (MW)	Current Capacity (%)
B4/B5	3400	52%
B6 (SCOTEX)	6800	74%
B6a	8000	61%
B7 (SSHARN)	9850	84%
GMSNOW	5800	34%
FLOWSTH (B9)	12700	83%
DRESHEX	9675	80%
EC5	5000	72%
LE1 (SEIMP)	8750	71%
B15 (ESTEX)	7500	95%
SC1	7300	100%



Solving National Balancing & Constraints

- Nationally need to balance generation and demand whilst not exceeding constraints



- Constraints restrict access to bids and offers
  - Export constraints restrict offers
  - Import constraints restrict bids

- Energy actions can make constraints better or worse
  - Offers tighten export constraints, bids relax export constraints
  - Offers relax import constraints, bids tighten import constraints

- Constraint actions can make the energy balance better or worse
  - Export constraint bids assist in a long market but need to be replaced in a short market
  - Import constraint offers assist in a short market but need to be replaced in a long market

- Constraint actions are taken in cost order within the constraint but may be more expensive than energy actions

- Optimisers need to be aware of constraint restrictions

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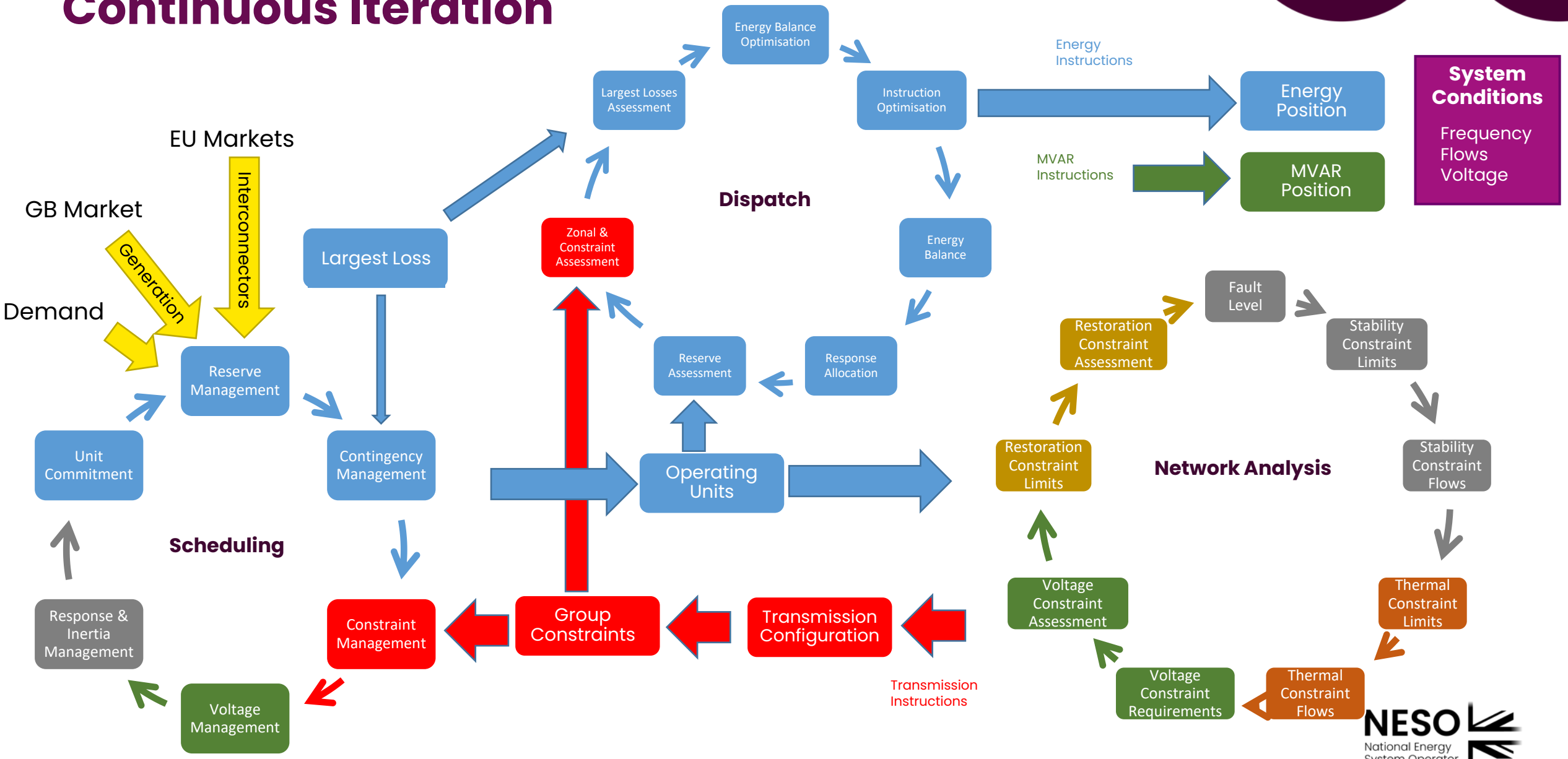
Continuous Iteration



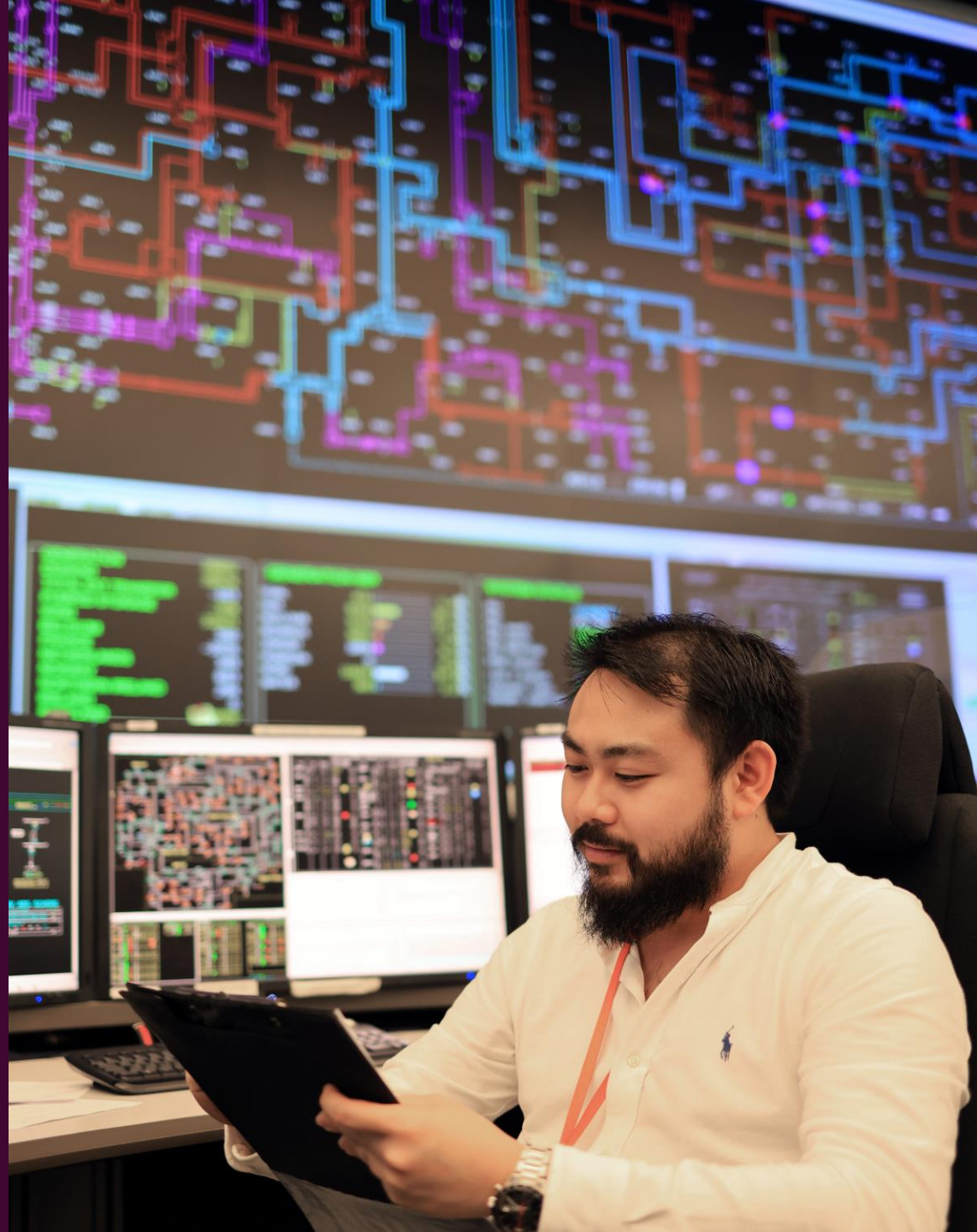
Key: Frequency, Stability, Thermal, Voltage, Restoration, Transmission

How do we Solve Constraints in Strategy Timescales?

Ensure we have sufficient options to solve the constraint (depends on type of constraint) in real time by providing a range of flexible options:

- Reduce/increase generation with group (e.g. BM actions, trading options)
- Utilise flow change equipment (e.g. Quad boosters)
- Review and enhance constraint limit (e.g. use of inter-trips)
- Return equipment to service (e.g. return circuits)
- Modify outage pattern (e.g. change sequence of outages)

Overall System Operating Plan needs to take into account constraint actions and restrictions.



Handover from Strategy to Energy Team

SYSTEM OPERATING PLAN Produced at 18/10/25 21:29

Final 5 Operating Plan for **1A** at **02:00** on **19/10/25** from 18/10/25 21:12 D&C

Wind forecast generated on 18/10/2025 21:50

Customer Demand Forcast (CDF)	19,453
Station Transformer (STX)	500
DSBR	0
Demand Adjustment	0
Total (SOP Demand)	**19,953**

ZONE	EMX	EOL	EMI
NO1	6,424	5,353	4,876
NW1	9,283	8,685	7,685
SO1	4,592	3,262	3,249
SW1	2,923	2,852	2,352
BRITNED	-1,064	-1,064	-1,064
EWIC	200	200	200
FRANCE	1,000	1,000	1,000
INTELEC	1,014	1,014	1,014
INTGRNL	504	504	504
INTIFA2	1,014	1,014	1,014
INTNSL	-155	-155	-155
INTVKL	-1,080	-1,080	-1,080
MOYLE	400	400	400
NEMO	-1,012	-1,012	-1,012
PS	-529	-573	-573
BAT	480	-25	-529
STO	0	0	0
SB	166	-36	-47
SLR	0	0	0
Total	**24,160**	**20,339**	**17,834**

Contingency Reserve (at 3hrs)

Contingency Requirement	29
Operating Margin Surplus / (shortfall)	2505

Summary

Positive Residual (EMX - (SOP Demand + Positive Reserve))	2,534	
Imbalance (SOP Demand - EOL)	-386	**Bids**
Negative Residual (SOP Demand - (EMI + Negative Reserve))	451	

Positive Reserve	
Standing Reserve (< 20 mins)	
Standing Reserve Requirement (SRR)	1,700
Standing Reserve Availability (SRA)	1509
Standing Reserve Shortfall (SRS)	191
Standing Reserve Excess (SRE)	0
Standing Res Wind Adj (WSRR)	0
Scheduled Reserve	
Net Positive Regulating Reserve (PRG)	1,400
Positive Reg Res Wind Adj (WPRR)	(1000)
Reserve For Response (PRE)	273
0% Percentage of Standing Reserve Excess	0
Total Positive Reserve (SCS)	**1,673**
Negative Reserve	
Net Negative Regulating Reserve (NRG)	1,450
Negative Reg Res Wind Adj (WNRR)	(0)
Negative Response Reserve (NRS)	218
Total (Negative Reserve)	**1,668**
Maximum Loss (Generation)	1,400
Maximum Loss (Demand)	1150
Generation Inertia	76382

Occurs continually on a rolling 4 to 6 hours ahead

- Details the secure plan
- Generation changes needed
- Active constraints
- B4
  - What is driving the constraint
  - Constraint limit
  - Potential options to solve

Ronan Jamieson
Operational Strategy Manager (OSM)

Alex Carter
Operational Energy Manager (OEM)

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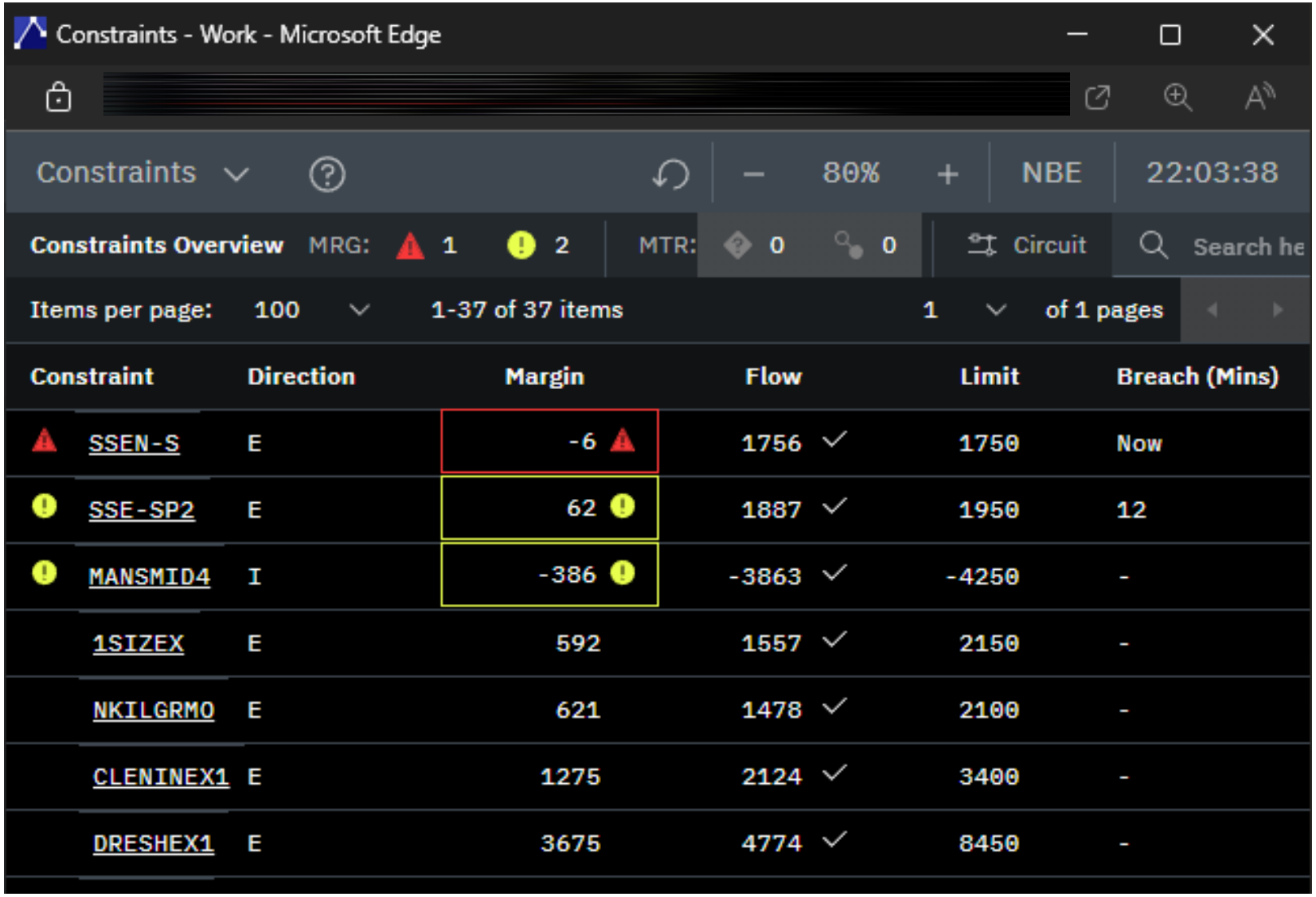
Constraints in BM Systems

OBP Constraint Overview

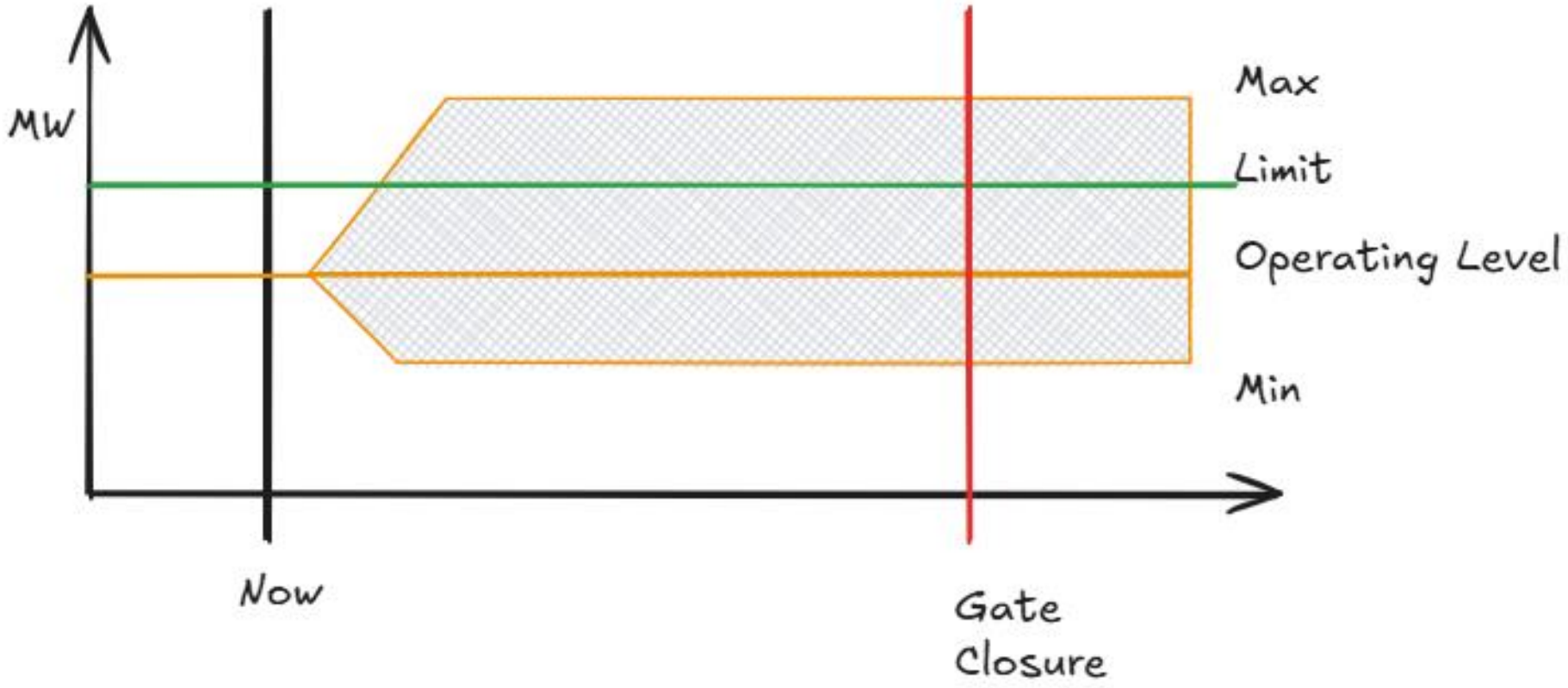


Constraint	Direction	Margin	Flow	Limit	Breach (Mins)
SSEN-S	E	-6	1756	1750	Now
SSE-SP2	E	62	1887	1950	12
MANSMID4	I	-386	-3863	-4250	-
1SIZEX	E	592	1557	2150	-
NKILGRMO	E	621	1478	2100	-
CLENINEX1	E	1275	2124	3400	-
DRESHEX1	E	3675	4774	8450	-

OBP Constraint Detail

Constraint Restrictions 1

- Available headroom can be limited by a constraint
- Bulk Optimisers need to be aware of these limitations
- Restrictions are automatically added



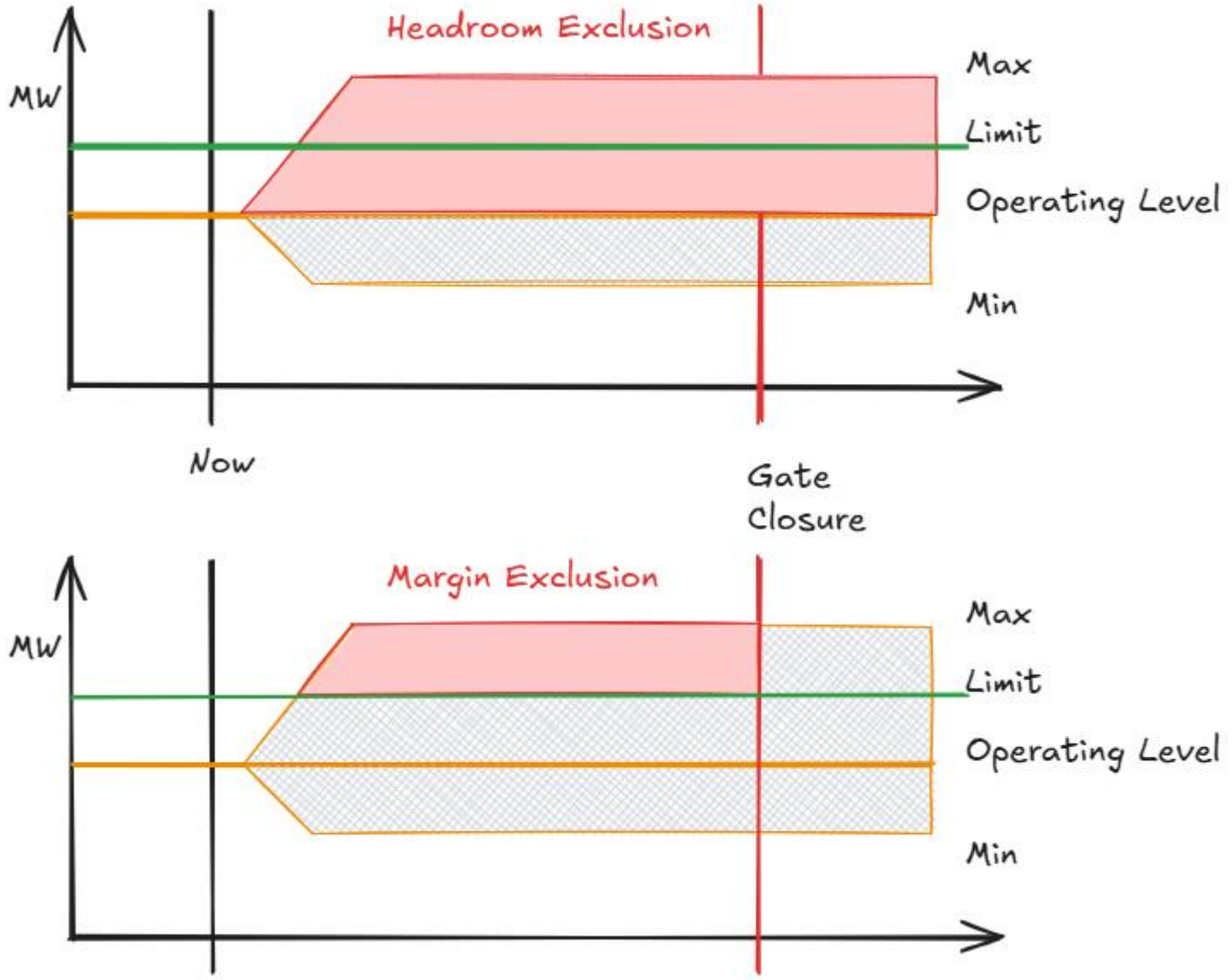
Constraint Restrictions 2

OBP initial restriction

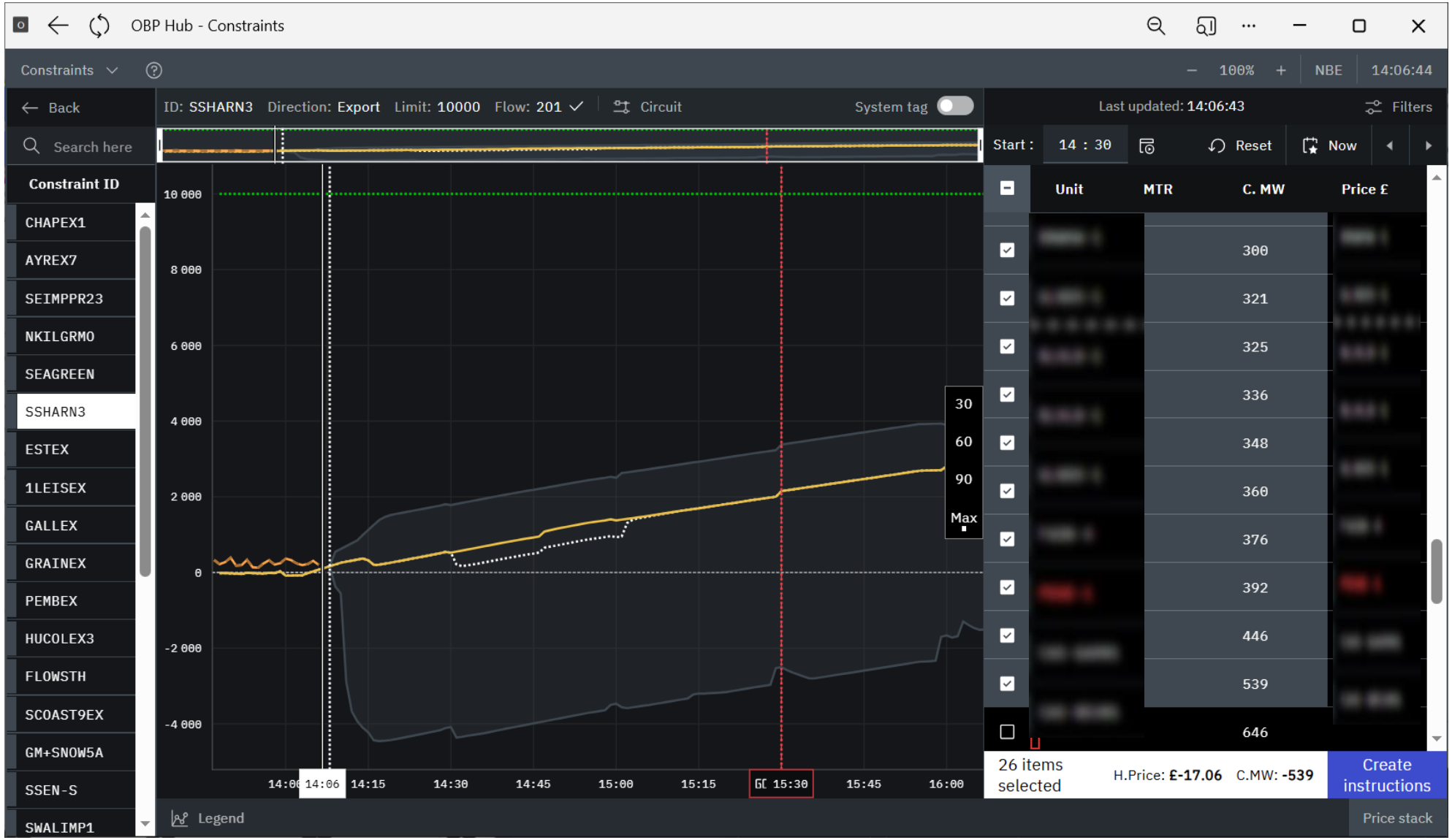
- all headroom removed for any unit within the constraint

OBP improved restriction

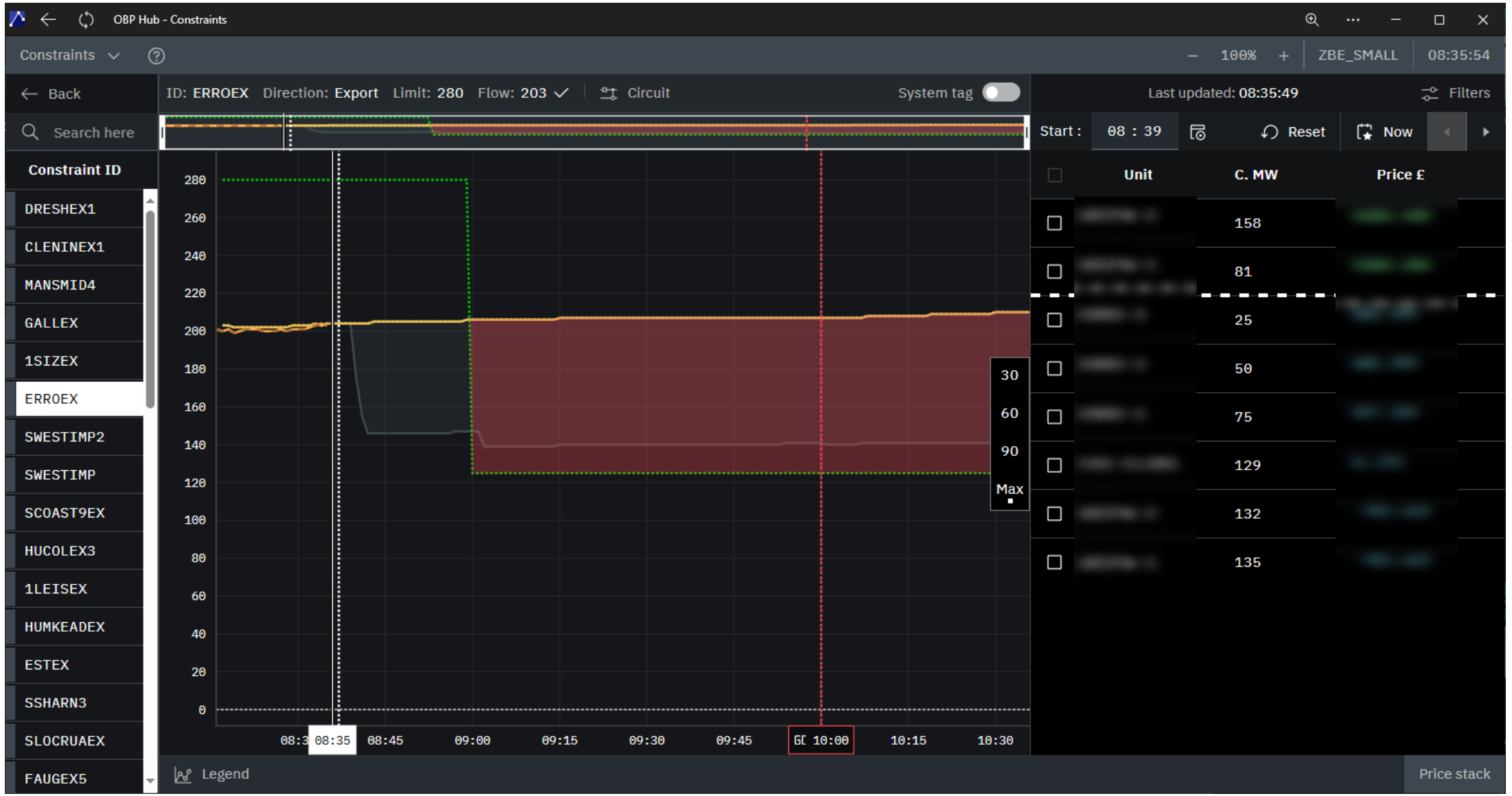
- only headroom above the limit removed, highest price first
- Updated every 5 minutes



OBP Constraint Dispatch



OBP Constraint – Limit change



Variability

Generation changes

- Market position, wind, breakdown

Interconnector changes

Demand changes

- Weather, consumer behaviour

Constraint limit changes

- Network topology changes, generation changes

Position continually monitored and refined

Constraints can last for minutes, hours or days or may not cause any restrictions

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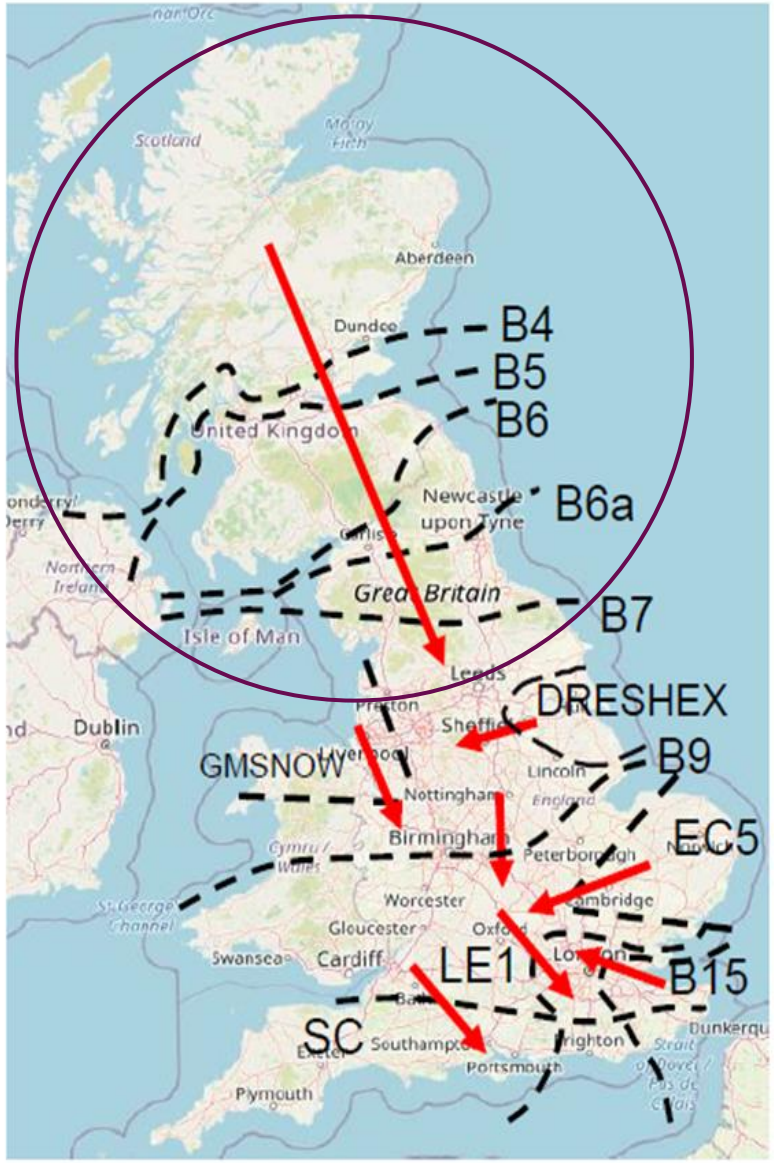
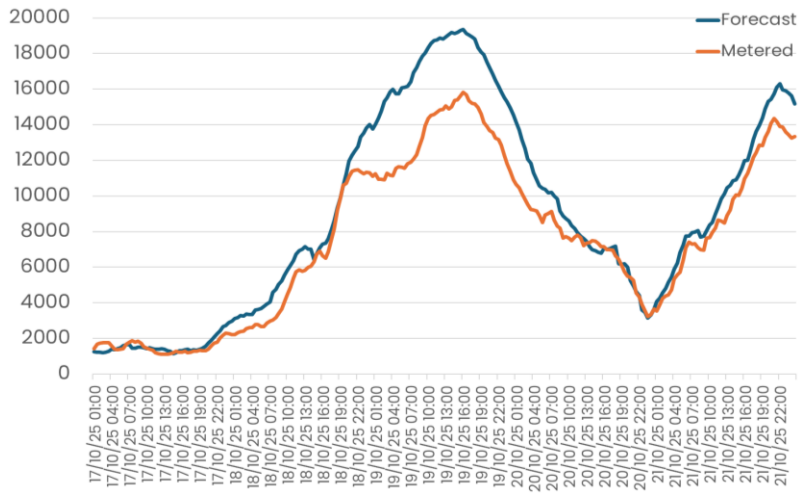
Sunday 19th October 2025



- ~19GW wind forecast
- Active constraints: B4, B5, B6, B6a
- B4/B5 started with generation actions from afternoon on 17th
- Wind pulled back from afternoon on 18th
- 3-4GW wind pull back for most of 19th
- 2-3GW replacement energy actions
- Stopped bidding back wind morning of 20th
- Still pulling back on conventional generation on evening 20th when more wind bids needed overnight
- Constraint actions ended lunchtime on 21st



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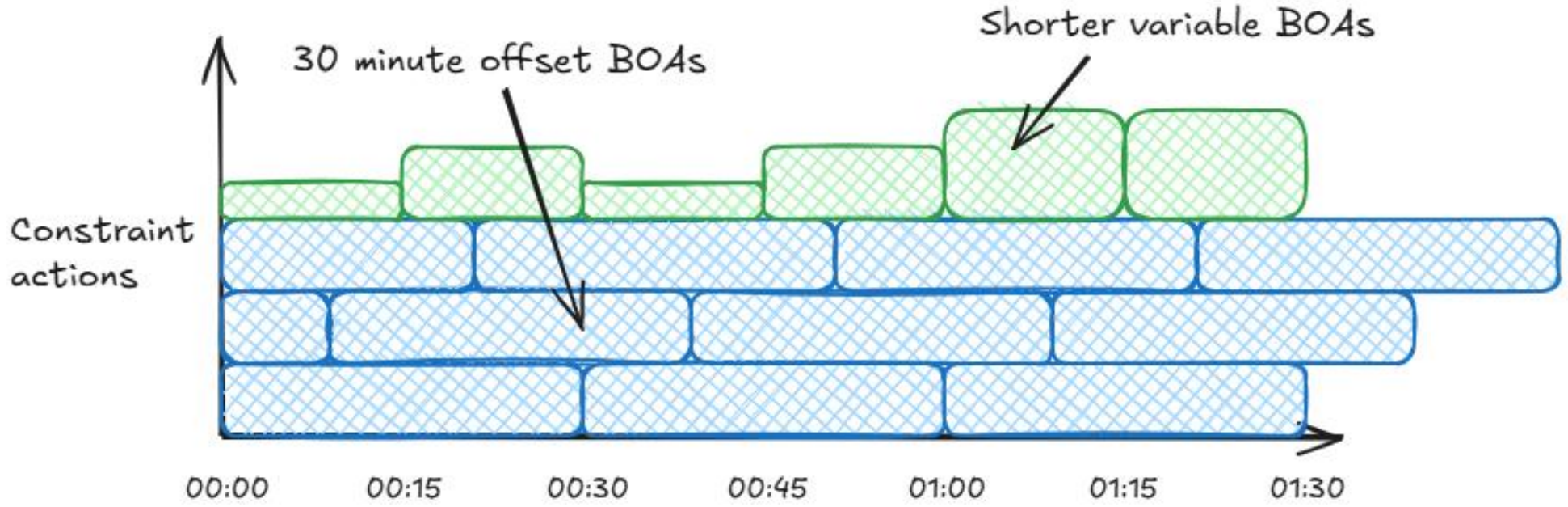
Large, long Constraint BOA Strategy



- 30-minute-long BOAs for bulk of the volume which can be automated
- Offset to manage risk of large volumes ending at the same time
- Shorter BOAs to manage variability
- Continually adapted to current situation

Thank you

Any questions?

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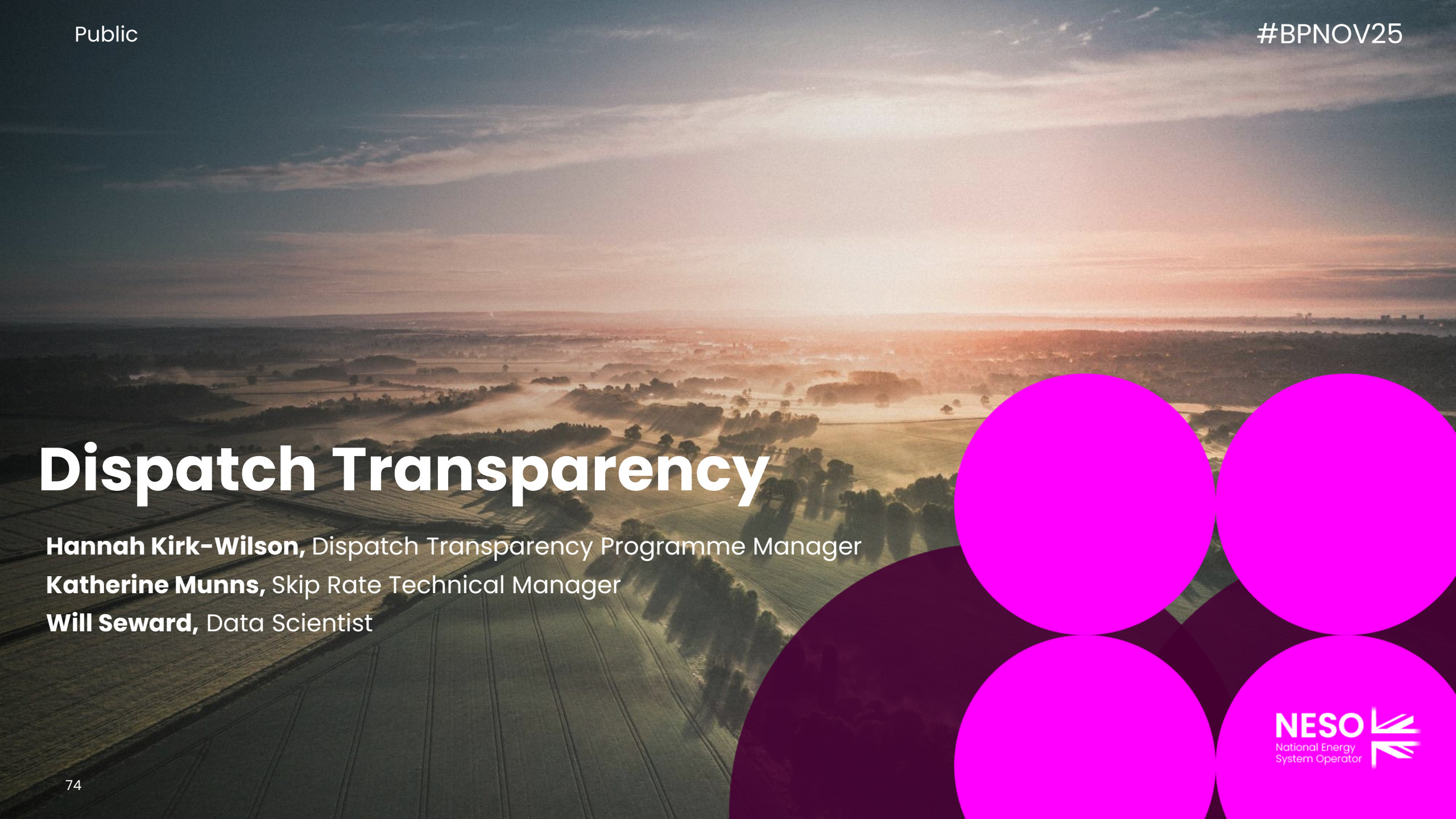

Dispatch Transparency

Hannah Kirk-Wilson, Dispatch Transparency Programme Manager
Katherine Munns, Skip Rate Technical Manager
Will Seward, Data Scientist

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Welcome

Breakout agenda	Presenters
Roadmap review Skips behind constraints | Root Cause Analysis | Dispatch Strategic Review | Grid Code modification GC0166	Hannah Kirk-Wilson Katherine Munns Will Seward
Discussion: Target for reduction of skip rates What should a target be based on?	
Invitation for feedback What else should we be considering for addressing skip rates?	

Roadmap Review

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Delivery: Commitments & Success Measure

IT system changes
Dispatch efficiency measurement & transparency
Market change
Forecasting improvements
Complete

✓ **OBP: constraint management**
Improved situational awareness for dispatch of units behind constraints

✓ **Transparency tool improvements**
UI improvements live in control room

✓ **Increased response holding**
Managing frequency fluctuations

✓ **Additional dispatch engineers**
Full time battery dispatch engineer providing 24/7 cover

✓ **Root Cause Analysis Phase 1**
38 hypothesis identified

OBP: National Optimisation
Improved dispatch advice and efficiency

✓ **OBP: Bulk Dispatch price stack**
Improved dispatch efficiency

✓ **GC1066 Approval –** Ofgem approve Grid Code modification

✓ **Forward looking tool**
Enhancements to Control Room skip rate tool

✓ **Quick Reserve Phase 2 Go Live** – Quicker energy imbalance restoration

✓ **Dispatch Strategic Review concludes**

✓ **Skip rate materiality**
Kicking off skip rate materiality work

Root Cause Analysis Phase 2
Validation of hypothesis, identification of causal factors and mitigating actions

OBP: Constraint Optimisation
Further improvement to dispatch behind constraints

Slow Reserve Go Live – More sustained delivery in a post fault event

RCA & Dispatch review recommendations
improvement projects

Improved Skip Rate Methodology
Addressing tool methodology limitations to include MFR & spin gen/spin pump

Skips behind constraints
Analysis and methodology development

Forecasting improvements
Implemented in control room

2025 Jan - Mar | Apr - Sep | Oct - Dec | **2026** Jan - Mar

Skips Behind Constraints

Context

- When constraints are active, NESO Control Room engineers dispatch units to alleviate flow across the boundary.
- A ‘skip’ might occur when a more expensive unit is dispatched in place of a cheaper one.
- Current skip rate method only assesses economic efficiency of energy dispatch decisions. Actions taken to manage the constraints are excluded from the methodology.

Objectives

- Identify and analyse skips that occur behind constraints.
- Develop a methodology to assess and measure skips within constraint boundaries, accounting for:
  - Nested constraints
  - Complimentary constraints
- Provide transparency on dispatch decisions made for units behind a constraint.

We have committed to developing a methodology and agreeing it with industry by April 2026.

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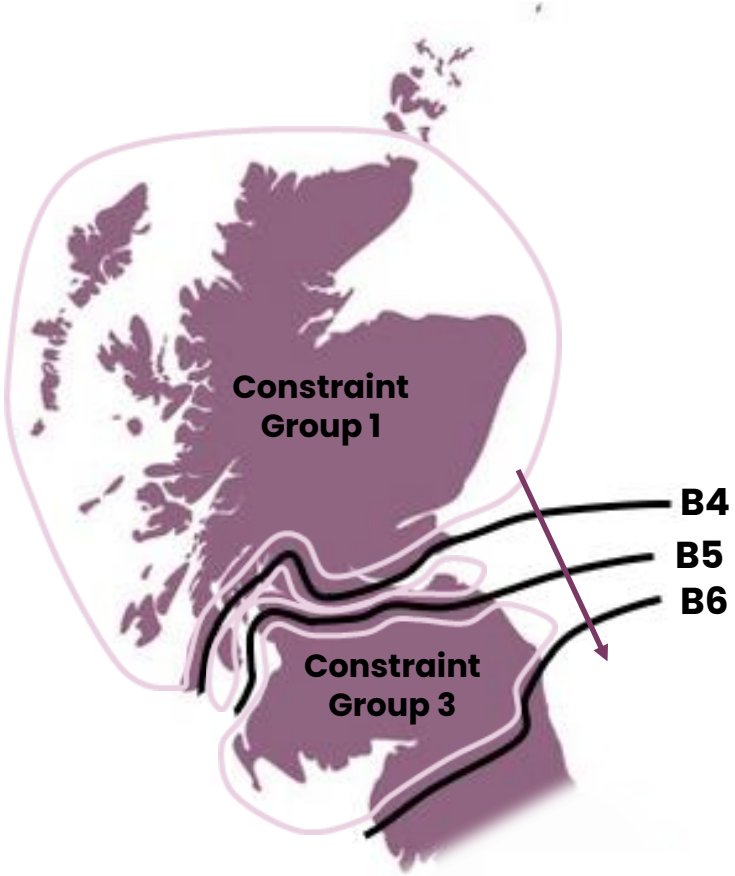
Understanding Skips behind Constraints

Analysis approach

- Apply logic consistent with the existing skip rate method.
- Identify constraint groups within nested constraints.
- Select the most cost-efficient units to alleviate constraints.
- Compare the actual and ideal dispatched units.



Considerations

- **Nested Constraints Complexity:** When multiple constraints are active, taking a seemingly more expensive action can be more optimal, as resolving one constraint may relieve the other.
- **Economic vs Systemic Optimality:** Evaluations based solely on price may overlook wider network benefits. A higher-price BMU could have been taken for reasons such as inertia or voltage, and therefore necessary for system security.

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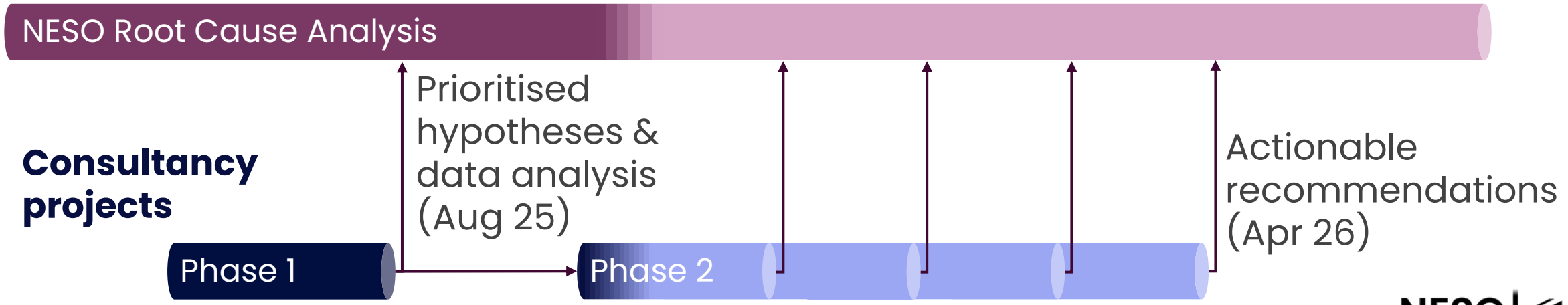
Introduction to Root Cause Analysis

Focused on balancing skips:
Stage 5 Post-System Action (PSA)

Purpose: Understand why skips occur in the Balancing Mechanism and how to reduce them.

Objectives:

- Identify root causes of skips
- Improve transparency
- Develop actionable recommendations



Root Cause Analysis Hypotheses

Categories

- Market Impacts
- Operational Discretion
- Methodological Limitations
- System Errors
- Forecasting Errors
- Technical Limitations

38 hypotheses across **6 categories**, prioritised using **qualitative** and **quantitative** evidence

Example: **Methodological Limitations**

"BMUs that actively hold **Mandatory Frequency Response** (**MFR**) have a higher likelihood of being skipped compared to other units to maintain capacity to provide response, with other units accepted out of merit."

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Dispatch Strategic Review (DSR)

Profound transformation of the GB energy system is creating new operational challenges for the Electricity National Control Centre (ENCC):

- Rapid decarbonisation
- Integration of renewable generation
- Electrification of demand
- Increasing system complexity

We must ensure that our processes, systems and culture remain robust and adaptable to future needs.

We therefore commissioned an independent review of Control Room processes, systems and operational model associated with energy scheduling and dispatch.

DSR aims, objectives and methodology

Key Aim

Recommend changes to tools, processes or operating model to make the ENCC ready to meet 2030 energy system challenges

Completed

- Independent Review during the summer including:
  - Control Room shadowing
  - Analysis of Control Room processes
  - Data analysis of scheduling vs outturn performance
- List of recommendations to meet 2030 energy system challenges
  - Some shorter-term
  - Others need more analysis, longer-term development

Next steps

- Internal review of outputs and recommendations
- Prioritise initiatives – focus on impact and ease of delivery
- Develop roadmap indicating when certain recommendations could/should be actioned
- Identify ‘quick wins’ for immediate action at low cost
- Finalise roadmap and include in Business Plan

GC0166 Grid Code Changes

- Ofgem has approved changes to the Grid Code, modification GC0166 - decision confirmed on Ofgem website
- Change introduces new parameters to allow better use of electricity storage modules in the Balancing Mechanism
- Start date (implementation) for the Grid Code change – **5 Nov 2025**
- NESO expects to be ready to receive GC0166 data via EDL from April 2026 but will use it **from June 2026**, when publication of this data is available to all parties
- NESO will agree a time and date to switch each unit from current arrangement – unit by unit, not all at once
- Latest information presented at webinar 3 Nov
- Further information on GC0166 on NESO website
- Balancing Programme event Sep 2025 – Proof of Concept Testing (slides 37 to 43)
- Will share more information in December – date tbc

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Discussion: Target for Reduction of Skip Rates

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Skip Rate Target: Aims

What should be the aims of having a skip rate target?

- **Reduce costs to consumers** – implement strategies and efficiencies that aim to reduce costs passed on to the consumer, ensuring affordability and value
- **Technology/unit-agnostic & focus on capability** – Emphasise capability rather than specific technologies or units, allowing flexibility and adaptability across various platforms and systems
- **Within NESO control** – concentrate efforts on aspects that are within NESO control to effectively manage resources and optimise operations, rather than specific technologies or units, allowing flexibility/adaptability across platforms/systems

NB *– all assumes compliance with statutory requirements and obligations*

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Skip Rate Target: Options

Based on aims, some current options under consideration

- **Percentage of total balancing cost of day** – better understand and manage financial efficiency
- **Skip rate percentage target** – reduce skips that are uneconomic and within our control to a minimum level (will never be zero)
- **Within tech type comparison (even/level)** – ensure an even or level playing field, facilitating fair assessment and decision-making
- **Differential in cost** – minimise to get close to zero (or as close as we can)
- **Percentage reduction on previous year** – strive for percentage reduction in rate or cost compared to previous year to demonstrate continuous improvement and progress

Skip Rate Target: Discussion

Open discussion on what should be included in a target

- What factors should be included in a target?
- What are your biggest pain points on skip rates?
- What are your expectations of a target?
- How would you see a target evolving?

Send us your suggestions:
box.SkipRates@neso.energy

Invitation for Additional Feedback

What else should we be considering for addressing skip rates?

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Brief feedback survey

Sli.do #DTP

Please assist us

- We have not received much feedback this year
- Essential for us to understand how our plans and deliveries are being received
- Respondents will not be visible to each other
- Individual responses will not be shared during the event or published afterwards
- We will repeat this survey over time to monitor perceptions, identify trends and guide our focus

Engage with us

Previous events – recordings

Battery & Skip Rates webinar (27 Feb) including methodology & data interpretation

Skip Rate Forum (1 May) – Project updates, Engagement & Code activity & breakouts: Datasets | Methodology | Materiality

Operational Transparency Forum (OTF) weekly updates, including deep dive (16 Jul) on definitions & calculations

Webinar (7 Aug) – skip rates data interpretation (dashboard), constraints and other updates

Webinar (3 Nov) - Stage 5 & 6 data, Materiality, GC0166, Dispatch Strategic Review, Root Cause Analysis, skips behind constraints, and target for skip rate reduction

Skip Rates webpage

Overview & data dashboard | Technical information | Link to data portal | Event recordings & slides | Progress updates | Q&A

Future events

Dec *tbc*	Webinar(s) on GC0166, Materiality & Skip Rate reduction target
28 Jan	Dispatch Transparency Forum

Mailbox – Send us your questions and comments: box.SkipRates@neso.energy

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Public

Q&A

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Closing Remarks

We welcome your feedback & questions – please do get in contact with us at **box.balancingprogramme@neso.energy**

Slides from today's session will be published on our website, along with content from our events, webinars & focus groups from earlier in the year – you can access these ***here***.

Subscribe to our new NESO newsletter 'Energising Progress' **here** **-** please select **Future of Balancing Services inc. Balancing Programme** to keep up to date.

Sign-up to our Stakeholder Focus Groups for Optimisation, Technology, & Forecasting - **Balancing Programme Stakeholder Focus Groups.**

If you are interested in a regular meeting with a representative from the Balancing Programme and would like more information, please get in contact using the email address above.

Scan Me

Stakeholder Focus Groups Sign-Up

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Public

Balancing Programme Event

18 November 2025

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