

Balancing Programme Webinar

22nd September 2026

Focus of Today's Session

Time	Agenda Item	NESO Presenters	Details
13:00 – 13:05	Welcome & Setting the Scene	Bernie Dolan , Programme Director	• Purpose: What is the Balancing Programme? • System Transformation: Where are we in our journey?
13:05 – 13:45	Balancing & Forecasting System Development Update	Neil Morgans , Principal Product Manager Rich Sykes , Principal Product Manager Natasha Bayler , Product Manager Bernie Dolan	• Progress: June – September 2026 – what system changes have been delivered and what's the impact • See it in action: Demonstration of some of the latest system enhancements and their operational benefits. • Balancing and forecasting delivery roadmaps: What's changed, why, and the impact. • What's next: Looking ahead to longer term delivery in the Scheduling space & further details re: Future State of Energy (FSOE)
13:45 – 14:05	Innovation & Trials in the Balancing & Forecasting Space	Ronan Jamieson , Operational Manager Leon Walker , Governance & Insights Manager	• Innovation Projects: Update on Innovation projects in the Balancing & Forecasting space. • REVEAL Trials Platform: See how REVEAL is supporting the testing of new Control Room changes, including GC0166, and find out how you can participate in future trials activity.
14:05 – 14:25	Question time	Heather Clatworthy , Stakeholder Lead	• Ask your questions to our SME team
14:25 – 14:30	Closing Remarks	Bernie Dolan	• Keeping in contact & future engagement opportunities
14:30 Webinar Close			

Audience Participation



There is time allocated to Q&A **towards the end of the session** – we will take all questions during this part of the agenda to ensure we get through all pre-prepared content.



Please post any questions you have for our speakers in the Microsoft Teams Q&A ensuring to list both your **full name and organisation** – this will enable us to follow up with you after the webinar if necessary.



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.



We welcome your feedback & questions; contact us at **Box.balancingprogramme@neso.energy** for all general queries, and for queries related to GC0166 and the EDT/EDL transition to OBP, please use **Box.OBP_EDT.EDL@neso.energy**.



Today's webinar will be **recorded and published online** after the session, along with the slide pack.

What is the Balancing Programme?

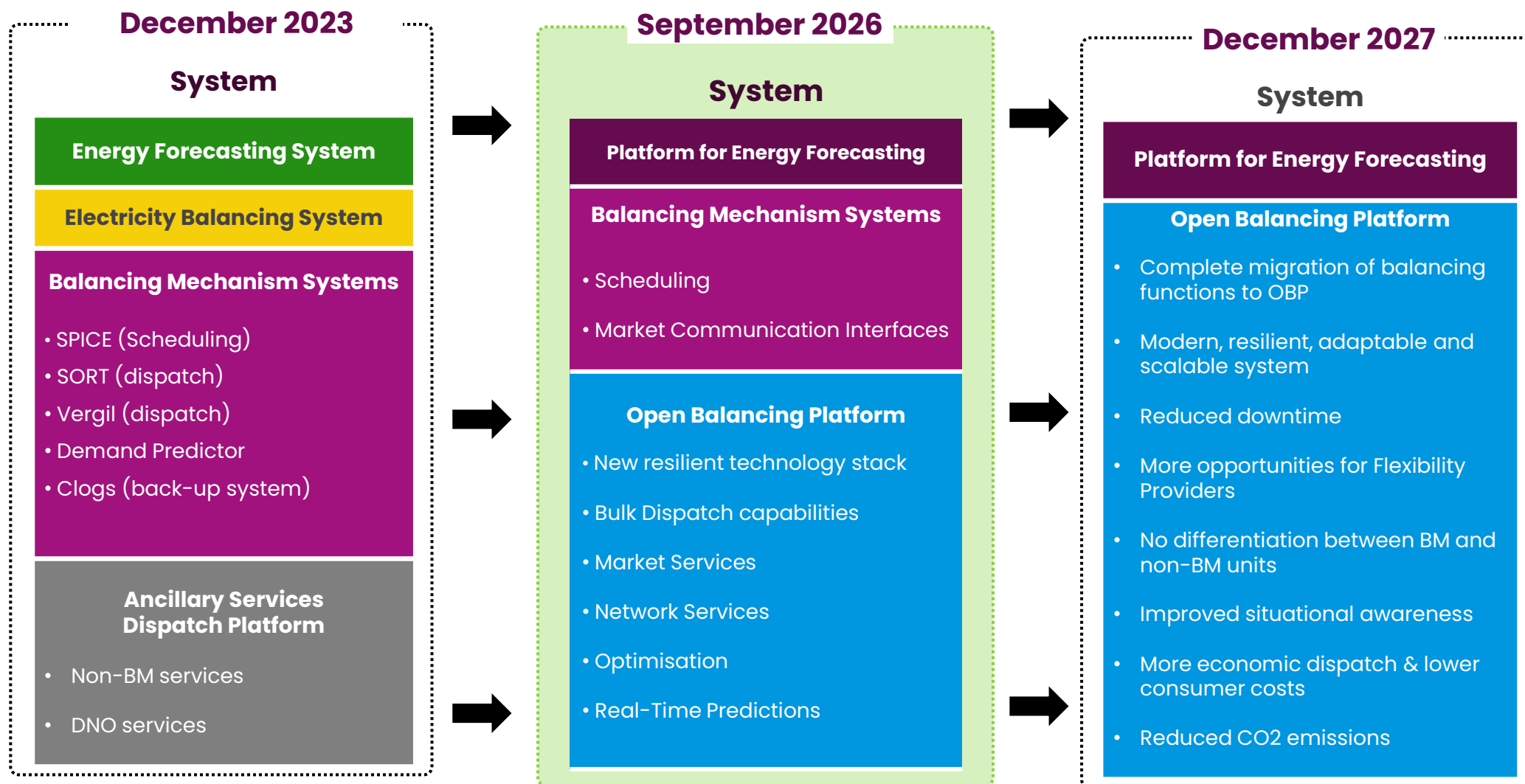
The Balancing Programme, established under RII02 (April 2021–March 2026), was set up to develop the balancing capabilities that the Electricity National Control Centre needs to deliver reliable and secure system operation, facilitate market competition and meet our ambition for net-zero carbon operability.

The Programme delivers products for balancing and forecasting, developing new capabilities and integrating enduring functionality into two strategic platforms:

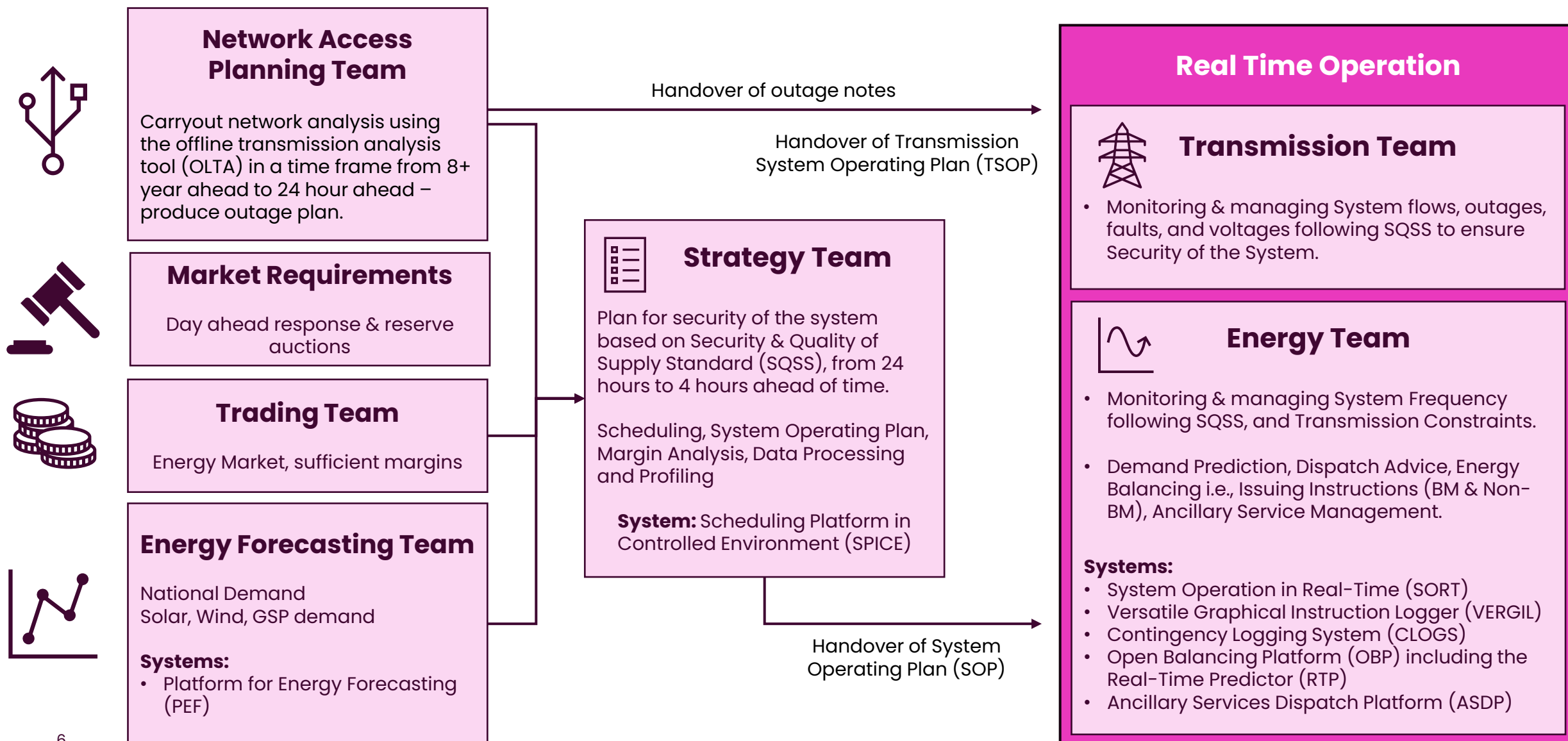
- The **Open Balancing Platform (OBP)**
- The **Platform for Energy Forecasting (PEF)**



System Transformation – Where are we?



In Context: Control Room Systems & Processes Impacted



2023 – 2028: Balancing & Forecasting Capability Journeys

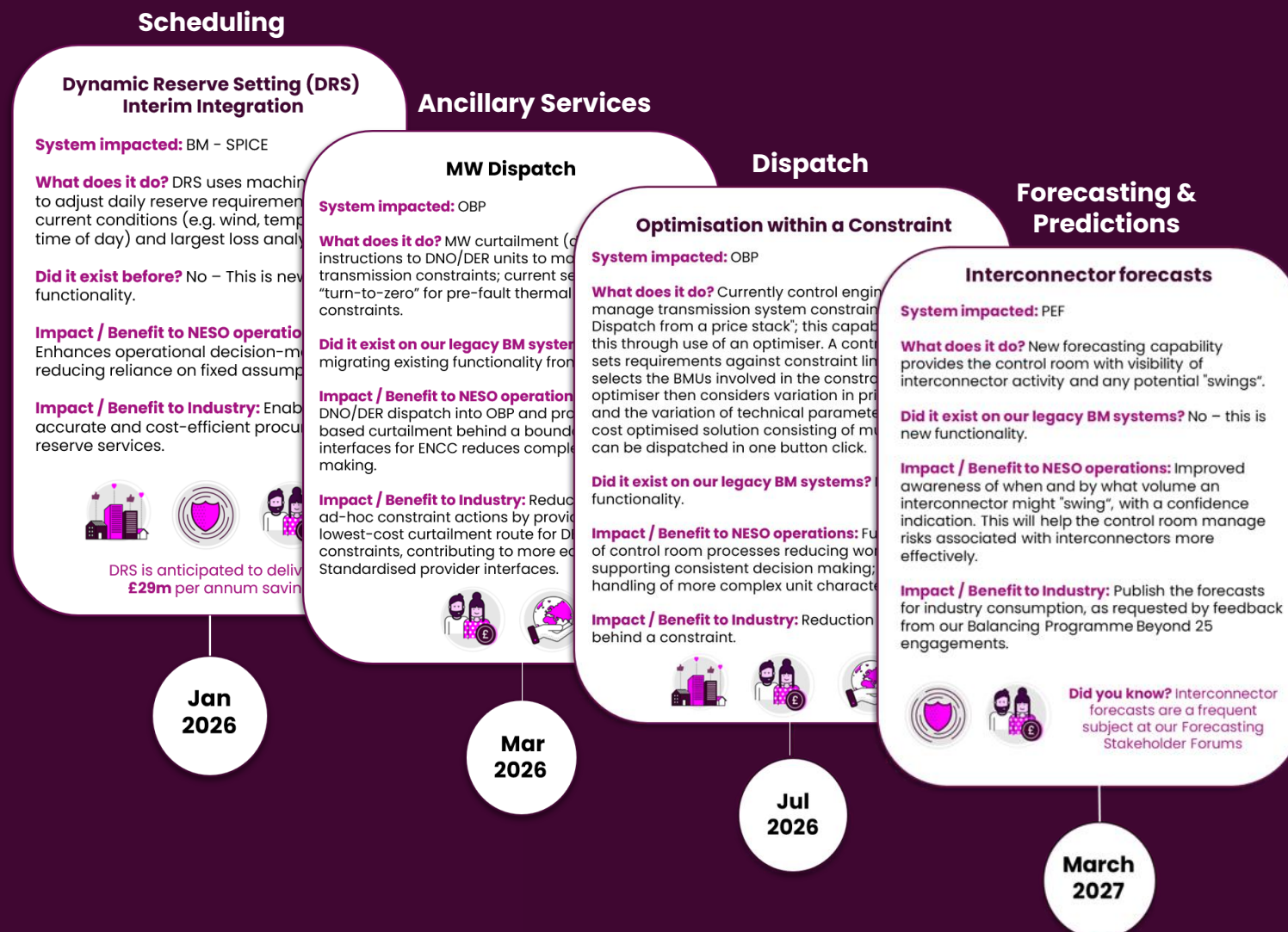
Want to learn more about what the Programme has delivered so far, and what's still to come?

We've broken our delivery into four capability journeys, each showing how the Electricity National Control Centre is already using the functionality delivered, and how it will continue to do so in the future – **View the journeys [here](#).**

These journeys highlight the benefits and impact for the Control Room & industry, the key challenges addressed, and how our work aligns with NESO's strategic goals.

The capabilities you see have been shaped through a combination of external engagement & internal NESO workshops.

*** Please note** – The scheduling capability roadmap is currently under review following detailed discovery work by the Programme in this space – Updated roadmap to be shared later in 2026.



Balancing & Forecasting System Development Update

Neil Morgans, Principal Product Manager

Rich Sykes, Principal Product Manager

Natasha Bayler, Product Manager

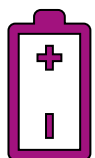
Bernie Dolan, Programme Director

Key Areas of Programme Progress since June 2026

Creating fair access, accelerating clean power and driving consumer value through transformation of our Systems

GC0166 Live

Maximum Delivery Offer (MDO) & Maximum Delivery Bid (MDB) went live in the Control Room in June 2026, as part of GC0166 – 39 assets have now transitioned to submission of these new parameters.



What does it do? GC0166

Introduces new parameters for limited duration assets – MDO & MDB – aimed at informing NESO about available MWh volume for BOA instructions (inside the BM window).

The FSoE model, also introduced under GC0166, to support improved use of these assets in Scheduling timescales (outside BM window), will come later. An interim solution to improve use in scheduling timescale scales will be implemented ahead of the FSoE model.

Benefits:

New parameters introduced respond to customer feedback by supporting more effective utilisation of limited duration assets.



Drive
Consumer
Value



Pave the Way
to Sustainable
Energy

Demand Forecasting

End to end demand forecasting capability enabled in the Platform for Energy Forecasting (PEF) removing the reliance on legacy tools.



What does it do? Streamlines a distributed process, through a single platform for demand forecasting activity. Improves level of detail and edit capabilities for 30-minute granularity forecasts up to 48 hours, and provides a comprehensive history of changes made by operational forecasters and the control room at different time points.

Benefits:

- Enhances Control Room situational awareness & reduces manual processes.
- Enables external reporting of demand forecasting directly from PEF, providing a more accurate report to the market.
- Foundational work to enable tighter integration between PEF & OBP, allowing demand forecasts to flow directly into the Real Time Predictor, further reducing manual processing.



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Consumer
Value



Deliver a Secure,
Resilient & Operable
Energy System

Dispatch Capability Expansion

Delivered new instruction, dispatch and operational control capabilities onto OBP across automated dispatch, pumped storage & reactive power management.



What does it do?

1. Bulk Dispatch Optimiser (BDO) expanded to include additional dispatch groups (North, South, Solar)
2. Pump-Storage & Reactive Power Management functionality enabled in OBP with enhancements for improved Control Room situational awareness.

Benefits:

- Enhanced operational visibility & automated decision support tooling to enable more efficient and consistent dispatch.
- Foundation for further automation & optimisation on OBP.
- Supports retirement of BM systems in the longer term.



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to Sustainable
Energy

Instruction Capabilities Enabled on OBP

Key:

- **Green:** Instruction capability available
- **Orange:** Future deliverable
- **Grey:** Not instructed via OBP

Key OBP Instruction Capability	Method	Control Room Dispatch Groups (i.e., Zones)									
		NO1 North	NW1 North Wind	SO1 South	SW1 – South Wind	BAT Battery	SB Small BMU	PS Pumped Storage	IC Interconnectors	SLR Solar	Non-BM
Target Dispatch	Optimisation	✓	X	✓	X	✓	✓	X		✓	X
Fast Dispatch	Optimisation	✓	X	✓	X	✓	✓	X		✓	X
Optimisation within a Constraint	Optimisation	✓	X	✓	X	✓	✓	X		✓	X
National Dispatch Optimisation (NDO)	Optimisation	✓	✓	✓	✓	✓	✓	✓		✓	X
Bulk Dispatch from a Price Stack for all groups (Zones) and within a Constraint	Price Stack	✓	✓	✓	✓	✓	✓	X		✓	✓
Bulk Dispatch from Price Stack for all BMUs and Non-BMUs by Service Type	Price Stack	✓	✓	✓	✓	✓	✓	X		✓	✓
Manual BOAs (inc. behind a constraint)	Manual	✓	✓	✓	✓	✓	✓	✓		✓	✓
Ancillary Instructions	Manual	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Please note: NDO – which is set to replace the Legacy Dispatch Advisor (LDA), generates “advice” at an 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 Group (Zone) for dispatch – these are the target programs. Groups (Zones) is a mechanism for managing the workload in the Control Room involved in issuing individual BOAs.

Key Areas of Programme Progress since June 2026

Optimisation within a Constraint

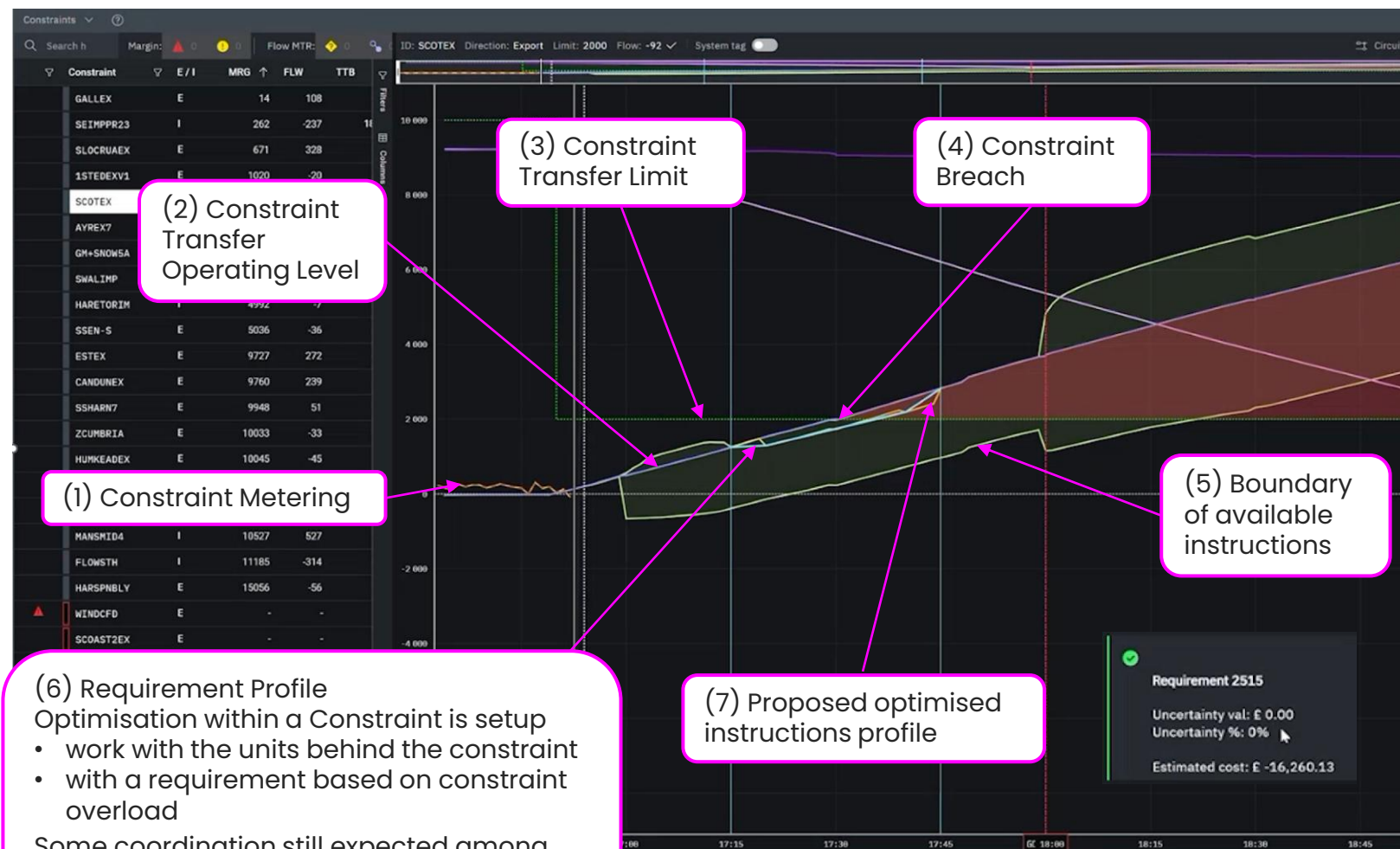
Implementation of Optimisation within a Constraint for Control Room dispatch groups (zones) – battery, Small BMU, North, South, solar on OBP. Remaining groups (zones) still to be implemented – North Wind, South Wind, and Non-BM.



What does it do? Provides control room engineers with the ability to bulk dispatch units to manage transmission system constraints through the use of an optimiser.

Benefits: Functionality / improvements support:

- Further automation of control room processes reducing workload and supporting consistent decision making
- Supports handling of more complex unit characteristics
- Supports bulk dispatch of smaller, flexible assets – anticipated to reduce skips for these units behind a constraint



(6) Requirement Profile
Optimisation within a Constraint is setup

- work with the units behind the constraint
- with a requirement based on constraint overload

Some coordination still expected among control room engineers as some groups (zones) are not solved via optimisation yet

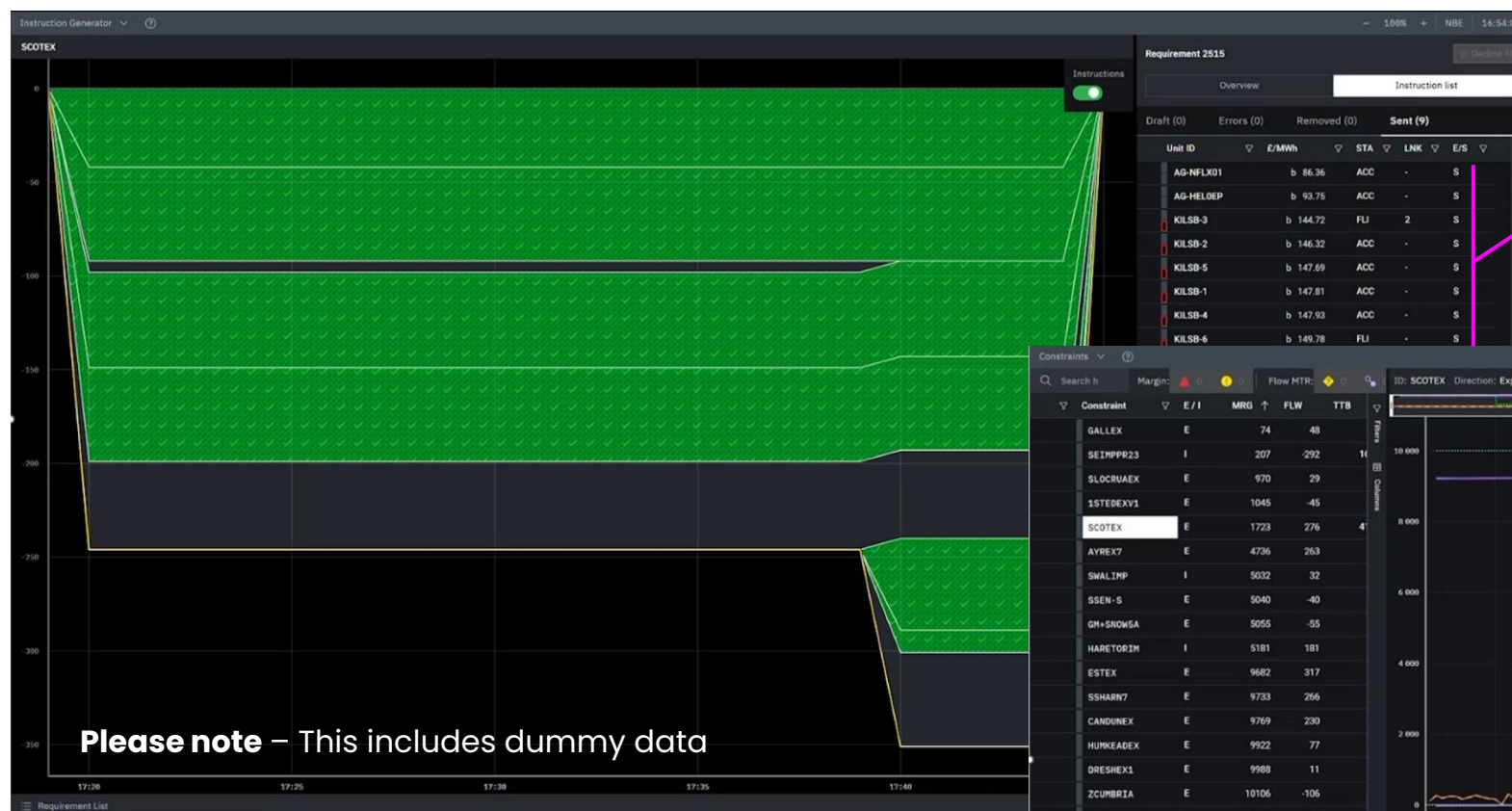


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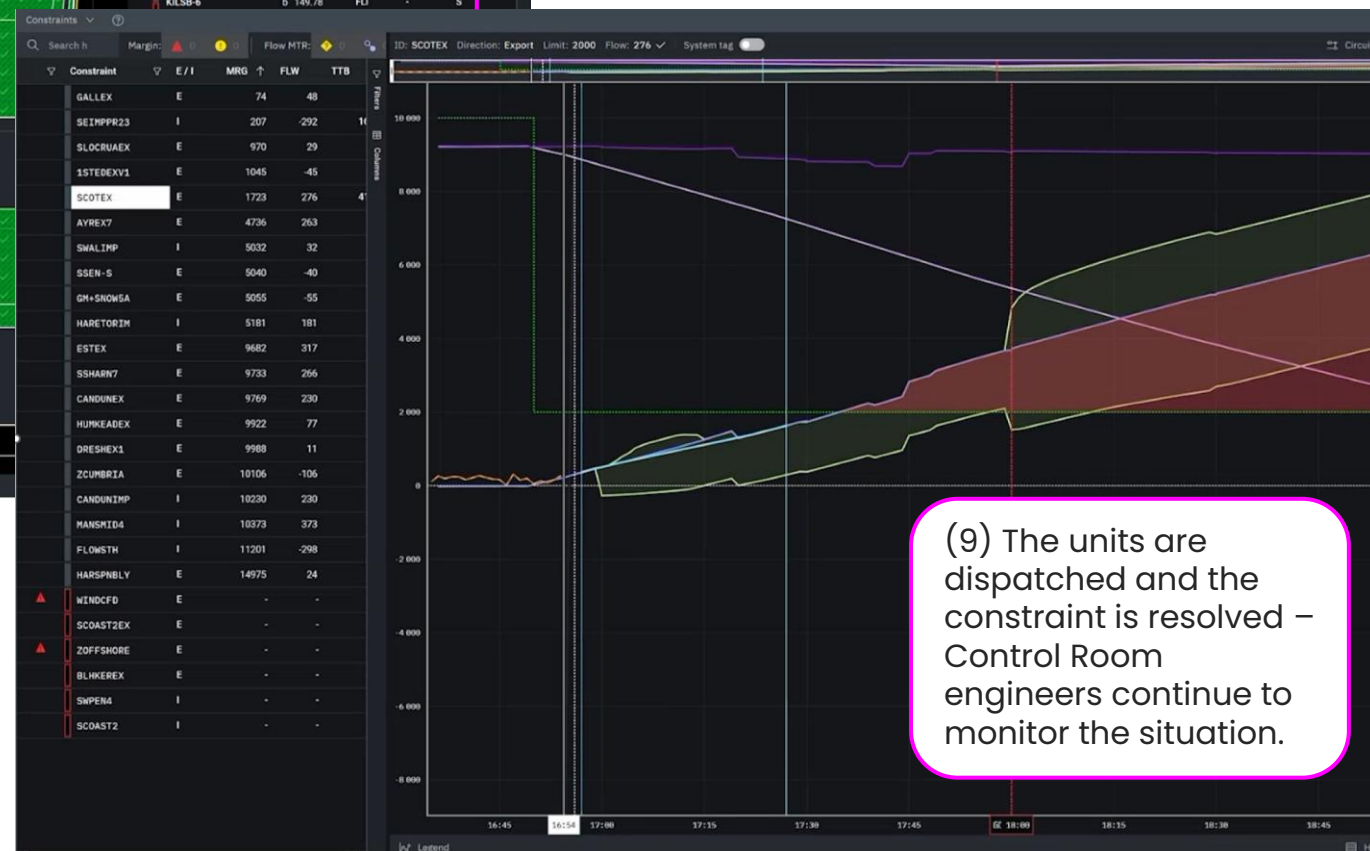
Optimisation within a Constraint



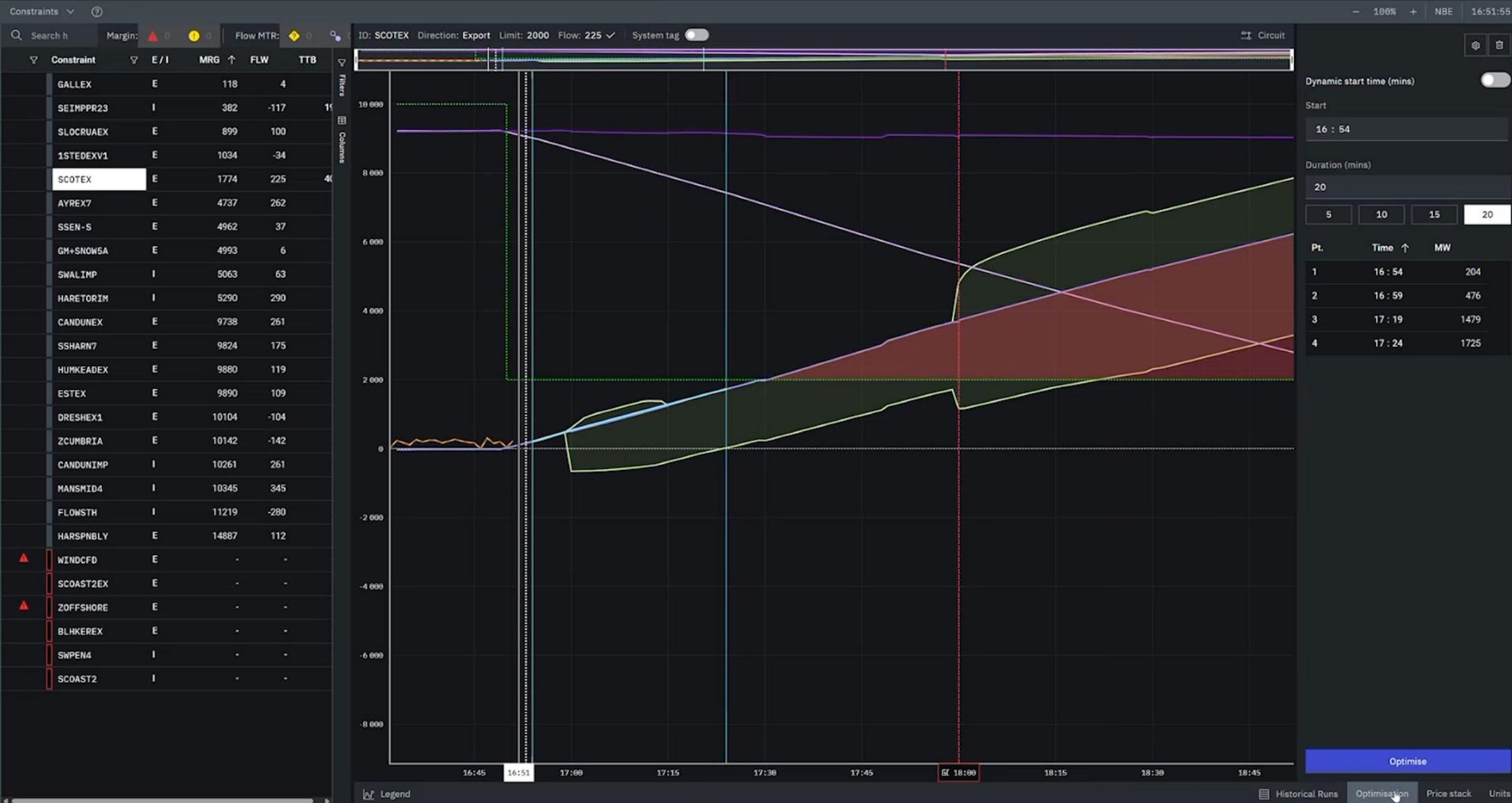
(8) The optimiser identifies the lowest-cost solution that complies with unit parameters, providing a recommendation for Control Room engineers to review and dispatch.

Please note – This includes dummy data

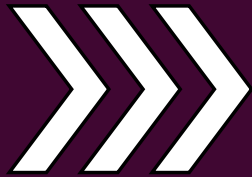
Optimisation with a constraint is functionality available to the Control Room, alongside other constraint management tooling including Bulk Dispatch from a Price Stack, and margin-based exclusions – you can read more about these in our capability journeys – see slide 7



(9) The units are dispatched and the constraint is resolved – Control Room engineers continue to monitor the situation.



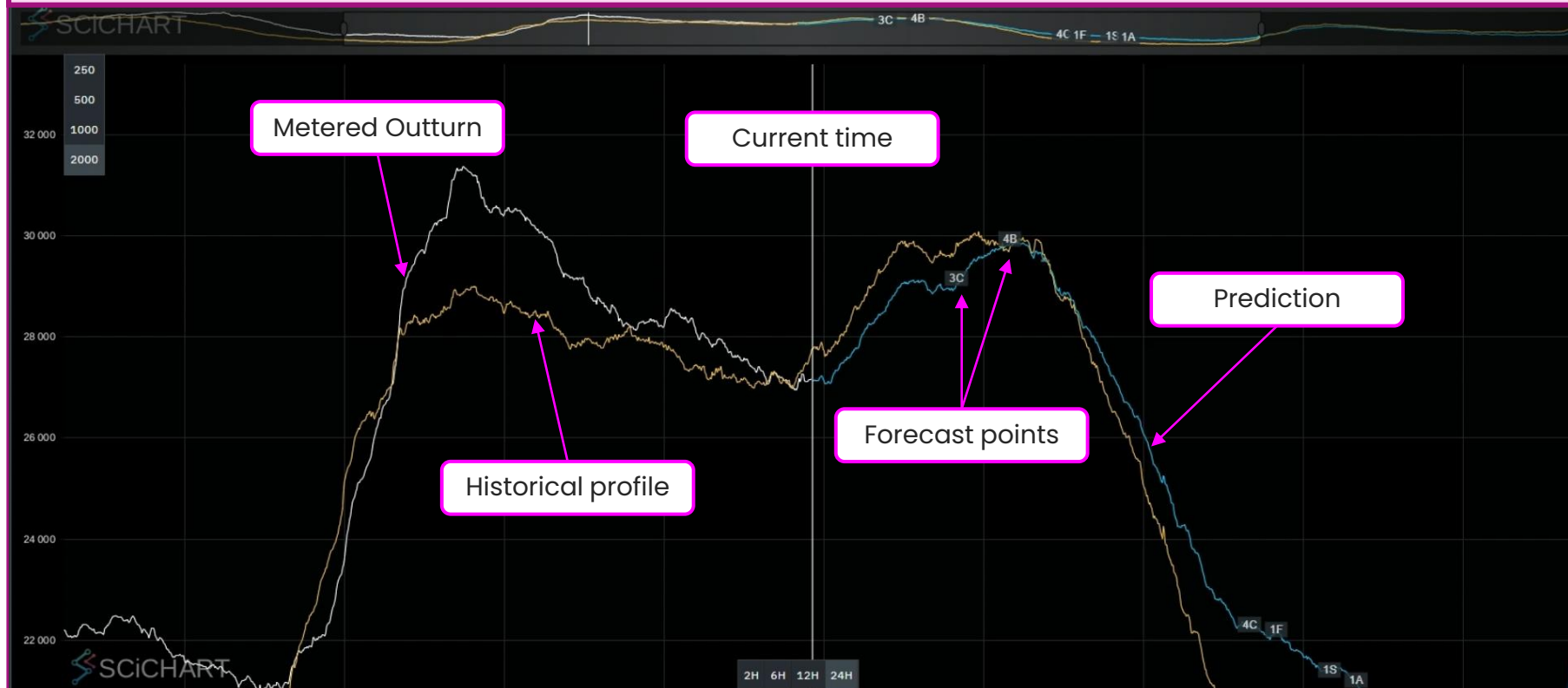
Coming Soon to the Control Room



Real Time Predictor (RTP)
feeding Control Room
Dispatch Advisor to
support target programme
and dispatch advice

What are Demand Predictions?

A continuously updated view of how demand is expected to evolve over the next 24 hours, providing the demand input used by the Dispatch Advisor.



1-minute resolution

Expected demand for every minute

24-hour horizon

A forward view across balancing and scheduling timescales

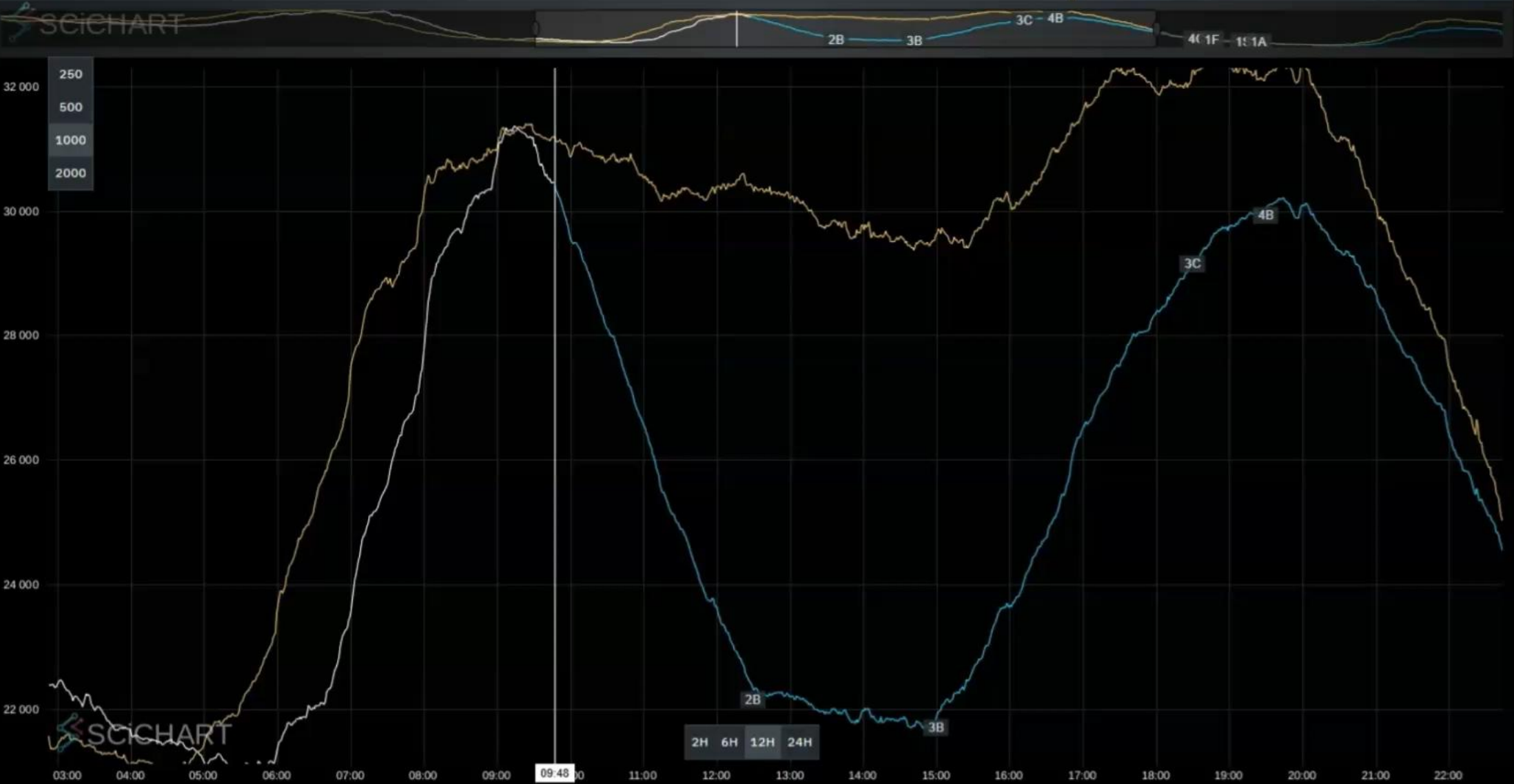
Supports dispatch decisions

Feeds the Dispatch Advisor (LDA first and NDO once adopted) to support the target programme and dispatch advice

Last prediction update: 11/09/2026 09:47

Component day today: 12/09/2023

Component day tomorrow: 13/09/2023



Configuration

Historical profile

☒ 12 / 09 / 2023

1637

Forecast points

Prediction history

No history

Accuracy Metrics

- Component-matched forecasts **reduce error by 50–70%** beyond 30 minutes ahead.
- At 60–120 minute horizons, **user-driven forecasting avoids errors of 1–3 GW**.
- Forecast accuracy is **directly linked to active user engagement**.

Horizon (Min)	Baseline MAE** (MW)	Predictor MAE (MW)	Improved Accuracy
15	≈250	≈180	≈30%
30	≈700	≈400	≈45%
60	≈1,800	≈700	≈60%
120	≈3,500	≈1,200	≈65%

*Early accuracy back-testing for 2025

** **MAE:** Mean Absolute Error

What does this mean?

1) Go-live of predictor

- Improved control room experience
- More accurate predictions

2) Feed dispatch advice

- Incorporate into current dispatch process and tools
- Better informed prediction of demand

3) Decommission the legacy tools

- OBP masters demand prediction
 - Reduced reliance on legacy tools
- 

Balancing & Forecasting Roadmap Update

Changes, Rationale and Industry Impact

EDT/EDL Transition

MILESTONE MOVED

March 2027 is now the target for commencing the transition to OBP

The revised plan reflects the readiness activities that must come together across NESO and market participants, including system and network changes, testing, Control Room preparation, training, assurance and operational readiness. This is an evidence-based target that reflects the progress made, the work still required, and our commitment to delivering a robust and secure transition that does not compromise operational security.

What it means for industry: Provides the time needed for critical activities across NESO & market participants to be completed successfully.

Forecasting and Prediction

NEW SCOPE

Solar eclipse modelling has been added to support the eclipse in August 2026.

MILESTONES MOVED

- **Demand Predictor decom** has been postponed whilst the adoption of Real Time Predictor completes.
- **Initial Interconnector Forecasts** has been moved out a quarter to align with the outputs from innovation and PoCs.
- **Wind-Profile management** has moved to enable decommissioning of wind management in BM.

Scheduling

ROADMAP UPDATE

We are revisiting the Scheduling roadmap and milestones to reflect requirements, following extensive discovery work.

An updated view will be published once the work is complete – further details in next section.

Industry impact: The updated roadmap will provide a clearer view of the future direction and associated milestones.

Constraint Management Intertrip Service – East Anglia

SERVICE START MOVED

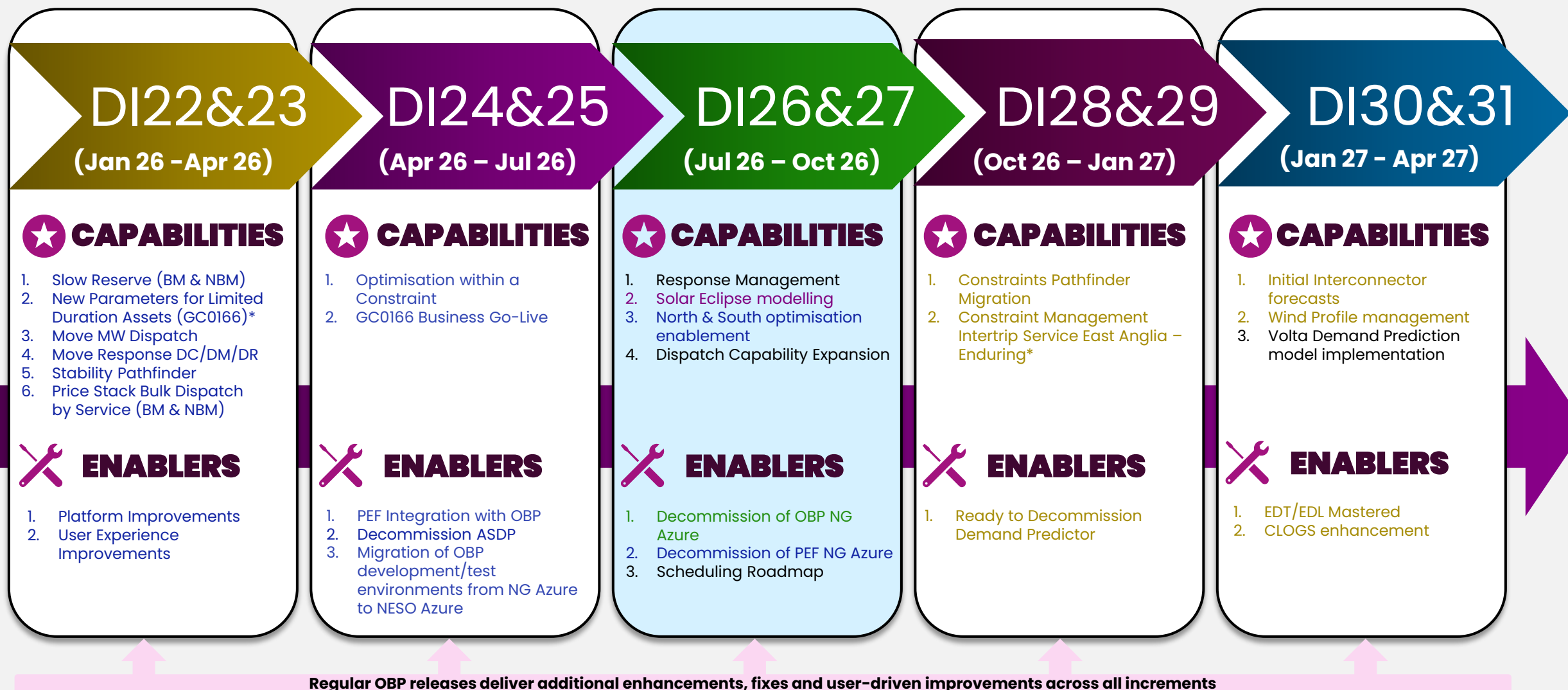
The East Anglia service start is now expected in Q4 2026.

The change is due to delays in the work required to upgrade the Operational Tripping Scheme in the EC5 region.

The revised service start is reflected in the published Electricity Markets Delivery Plan.

The change in start date has already been communicated to impacted providers; please see [Electricity Markets Delivery Plan](#).

Balancing & Forecasting Roadmap Update – Sept 2026



Delivered
Brought Forward
Moved Backwards
New Scope
No change

ASDP – Ancillary Services Dispatch Platform
BMU – Balancing Mechanism Unit
BOA – Bid Offer Acceptance
CLOGS – Contingency Logging System

Legend

DC – Dynamic Containment
DI – Delivery Increment
DM – Dynamic Moderation
DR – Dynamic Regulation

DX – Dynamic Response
EDL – Electronic Dispatch & Logging
EDT – Electronic Data Transfer
NBM – Non-BM Unit

* Service will initially operate with interim processes; full OBP functionality enabled following EDT/EDL transition



What's next:

Key system
deliverables in 2027
& expected impacts

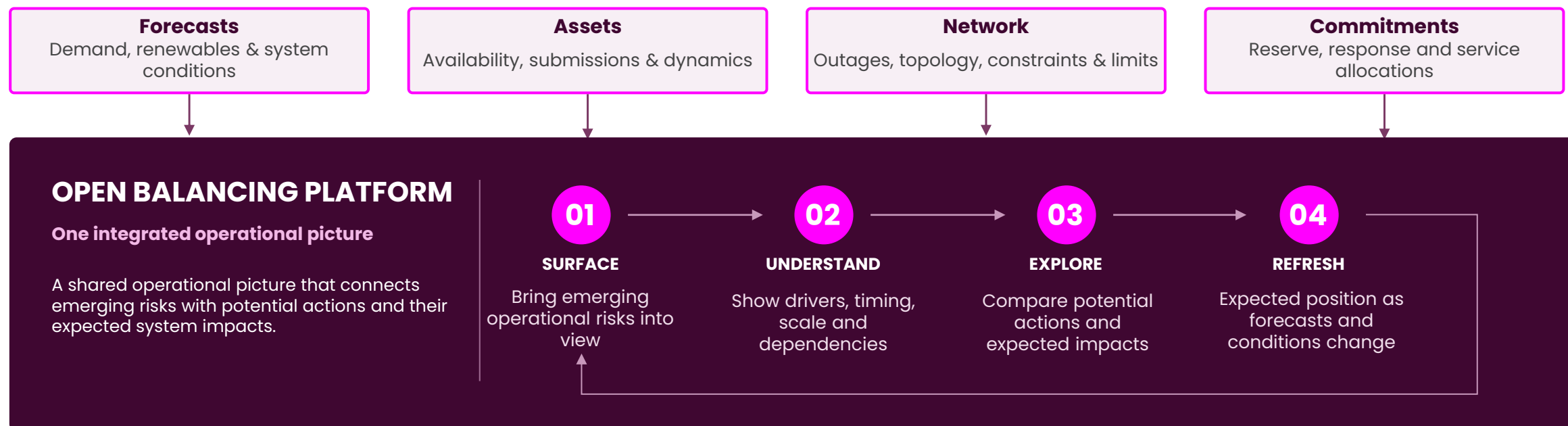
THE NEXT PHASE OF OBP

Scheduling

Recap

Scheduling maintains the expected operational position across Day Ahead and Current Day by identifying emerging risks, assessing potential actions and updating the position as conditions change.

The Strategy team already assess future system risks and develop the expected operational position. OBP will replace fragmented tools and manual reconciliation with connected data, calculations that update as information and conditions change, and the ability to test potential actions before changing the expected operational position.



WHAT THIS ENABLES

One connected picture

Bring together information currently spread across systems, tools and local records.

Continuous risk view

Understand how risks change as forecasts and operational conditions evolve.

Scenario-led assessment

See expected system impacts before changing the operational position.

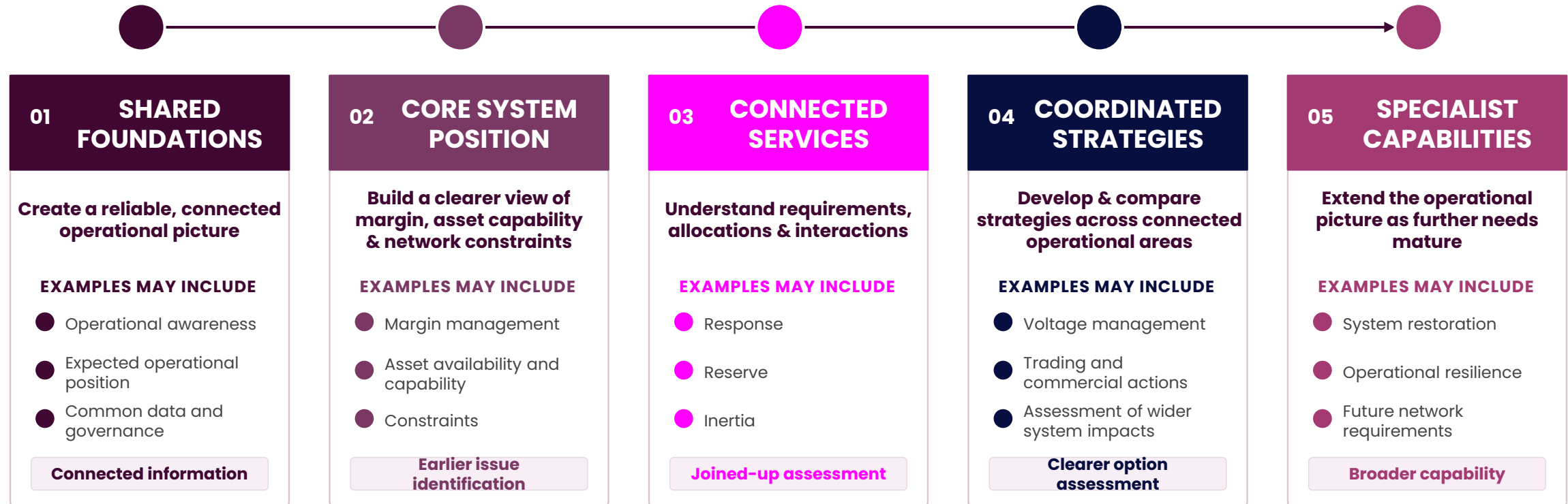
Support shared operational view

Shared platform enables a more integrated operational picture across Strategy and Energy teams

Scheduling

An Indicative Direction for Scheduling in OBP

The waves show a broad progression from shared foundations towards increasingly connected risk assessment and decision support. They may overlap and do not define organisational ownership or detailed delivery sequencing.



Initial capabilities will integrate information, calculations and scenario assessment. Recommendation and optimisation support may develop selectively as rules, data and operational use cases mature.

IMPACT: WHAT THIS COULD MEAN FOR INDUSTRY & MANAGEMENT OF THE SYSTEM

A clearer, more consistent operational position for units across Day Ahead and Current Day, strengthening the information that underpins operational handover. Anticipated to support better-informed and more transparent operational decisions further ahead of real time.

What's Next for GC0166?



GC0166 Recap

GC0166 is a Grid Code modification that introduces new dynamic parameters for limited duration assets, to enable effective usage of the increasing numbers of them in the BM.

GC0166 introduces new dynamic parameters – Maximum Delivery Offer (MDO), Maximum Delivery Bid (MDB), and Future State of Energy (FSoE) – aimed at informing NESO about available MWh volume for BOA instructions (inside BM window) & scheduling (outside BM window).

MDO and MDB will need to be submitted by Market Participants.

To support GC0166, modifications are required to the software system called EDL (Electronic Dispatch & Logging).

- **Data Validation, Consistency and Defaulting Rules:** This covers the rules on the submission of MDO & MDB
- **EDL Message Specification:** This defines the message structure used on EDL for MDO & MDB
- **Wider Access API Message Specification** – message structure used for MDO and MDB accessible on the Wider Access API Developer's Portal.

A **best practice guidance document** for MDO / MDB submissions has been published to support those optimising assets understand data profile requirements. Please keep engaging with us to help make any necessary future changes and refinements.

39 units have now transitioned

Explanation of the new GC0166 parameters:

Maximum Delivery Offer:

The amount of energy (MWh) which is available for instructable offers in Balancing Mechanism

MDO

Maximum Delivery Bid:

The amount of energy (MWh) which is available for instructable bids in Balancing Mechanism

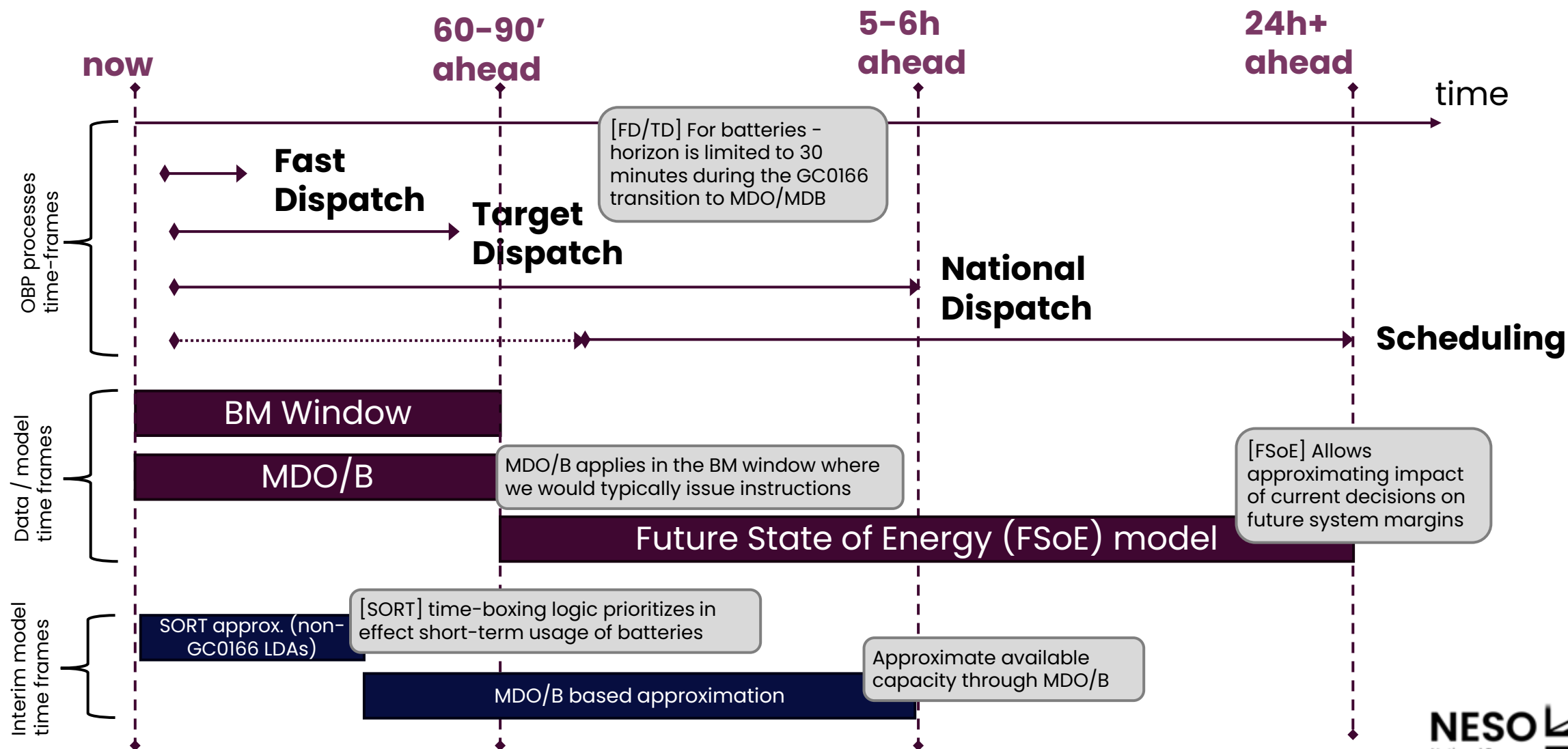
MDB

Reserved for
Commitments

Current state
of energy

Reserved for
Commitments

GC0166 Modelling Time-Frames



Scheduling Timescales: Interim Solution

- Whilst the Future State of Energy (FSoE) model is developed, we will adopt an interim solution that will allow us to schedule greater volumes of limited duration assets in our final System Operating Plan (SOP) as we expect to have more accurate and reliable data for the next 6hrs via Maximum Delivery Offer and Maximum Delivery Bid (MDO / MDB).
- We will start looking to implement this interim solution once all units have transitioned following the 5th November Ofgem deadline – our priority is to first support providers in transitioning to the submission of MDO / MDB, to ensure Grid Code compliance.
- We will progress on the development and delivery of this interim solution after the 5th November 2026.



FSoE Model Implementation

- We anticipate that the Future State of Energy (FSoE) model will require a combination of the below data – the trials we are running both now and, in the future, will validate exact data requirements – the results of this will be communicated to Industry at the earliest opportunity.
- The data we anticipate requiring for the model is static i.e., one value covering the operational day received via our Single Markets Platform (SMP), apart from **Real time SoE** – which will be received via the SCADA system (IEMS). SMP values can be changed at any time, and the system will refresh every 30 minutes.
- Several key milestones and dependencies must be delivered to achieve a usable FSoE model, with the goal of having a testable version ready by Summer/Autumn 2027.

- | | |
|--|------------------------------|
| • Max SoE (NESO calculate time varying limits from Reserve and Response contracts) | • Daily cycle limit |
| • Min SoE | • MWh cycle limit |
| • Charging efficiency | • MW power capability import |
| • Discharging efficiency | • MW power capability export |
| • SoE limit positive | • MWh export |
| • SoE limit negative | • MWh import |
| | • Real time SoE |

NESO Balancing Programme Optimisation Stakeholder Focus Group

Date: 16.11.2026

Time: 12:30 – 14:00

Format: Microsoft Teams Online

Join our Optimisation Focus Group to hear the latest updates on the development of balancing optimisation capabilities delivered into the Control Room. During the session, we will:

- Recap on where we are in our journey to improve optimisation capabilities
- Provide an update on the Future State of Energy (FSoE) model, including the development roadmap and key milestones.
- Share insights from data analysis on how Maximum Delivery Offer (MDO) & Maximum Delivery Bid (MDB) are being used in the Control Room.
- Explore the logic behind the 'Optimisation within a Constraint' capability, including how it operates today and how it is evolving to support additional asset types.

If you are not signed up to our Balancing Programme Optimisation Stakeholder Focus Group and would like to attend this session, please register [here](#) – a calendar invite will be sent to you within 48 hours of signing up.

If you have any questions, please contact the team at:
box.balancingprogramme@neso.energy



Scan to sign up

Innovation & Trials in the Balancing & Forecasting Space

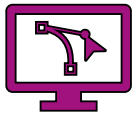
Ronan Jamieson, Operational Manager
Leon Walker, Governance & Insights Manager

The Volta Programme: A Recap

Powering the future of dispatch and bringing AI into our control room



The Volta Programme is at the forefront of integrating Artificial Intelligence (AI) into our Control Room Operations by enhancing decision-making and operational efficiency, to revolutionise management of the energy system.



Volta deliverables will be built on the scalable Open Balancing Platform (OBP), representing the next step in further automating processes and providing intelligent decision-support tools for the Control Room to use.



Central to the Volta programme is the Grand Optimiser project, which NESO is delivering in partnership with Tapestry, an energy moonshot within X, The Moonshot Factory (Alphabet's innovation lab).

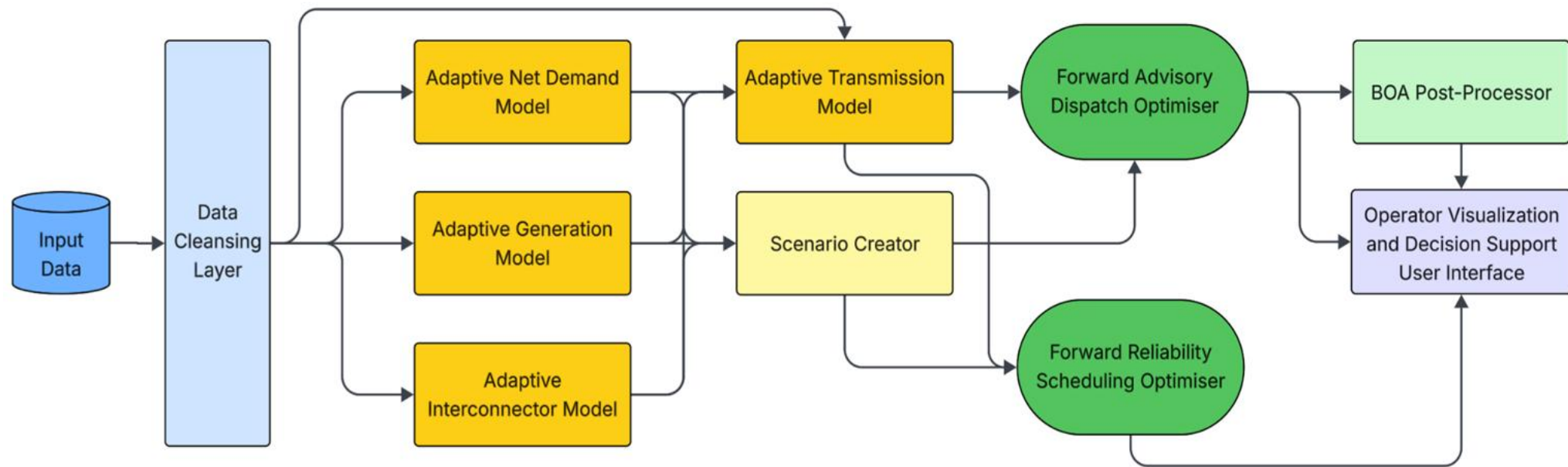


The Grand Optimiser project aims to lay out the design principles for a whole system balancing optimisation engine, that includes interaction with the underlying power system models – this security constrained economic dispatch (SCED) approach will assist NESO in modernising processes and systems to manage an ever-evolving energy system.

Primary Components of the Grand Optimiser

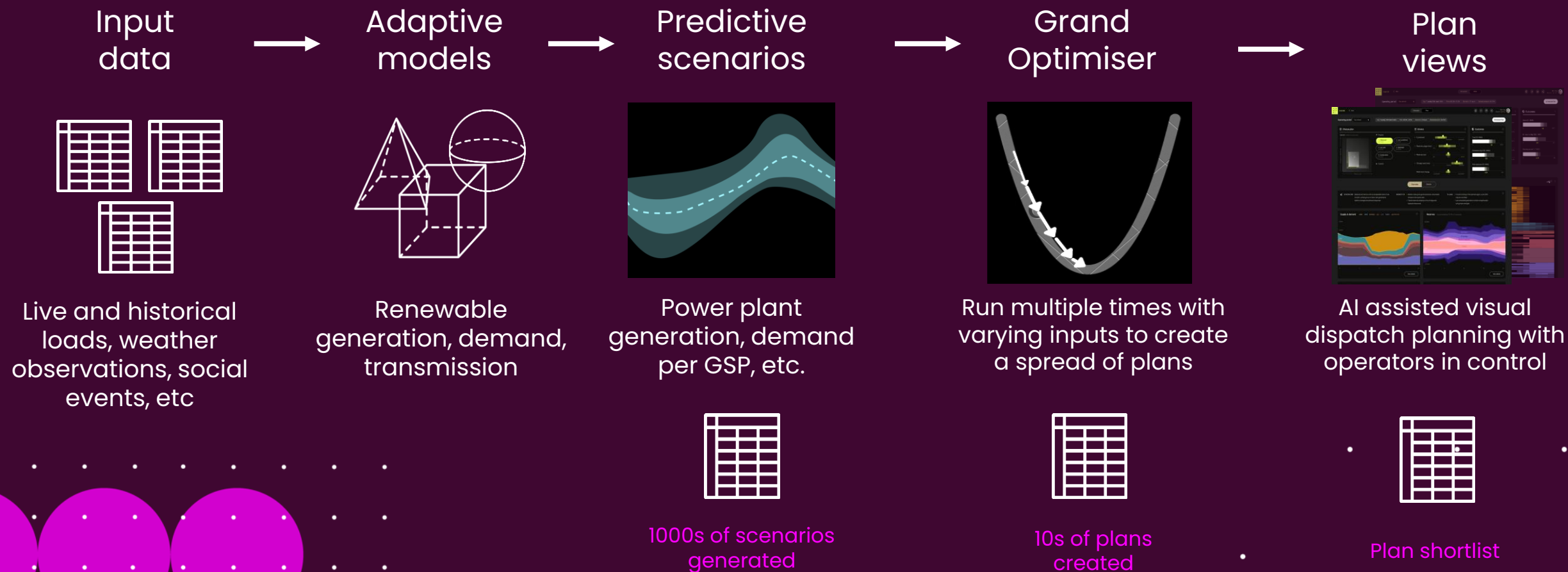
The Grand Optimiser will be an integrated optimisation system that utilises adaptive data models, scenario creation, and a multi-stage algorithmic framework to provide Control Room operators with **scenario-based trajectories for situational awareness and decision support**.

In doing so, it will **enable reliable and cost-effective energy delivery** by co-optimising energy balancing and ancillary services against network constraints in a more effective manner than is possible today, building on and enhancing what is already available in OBP.



Grand Optimiser

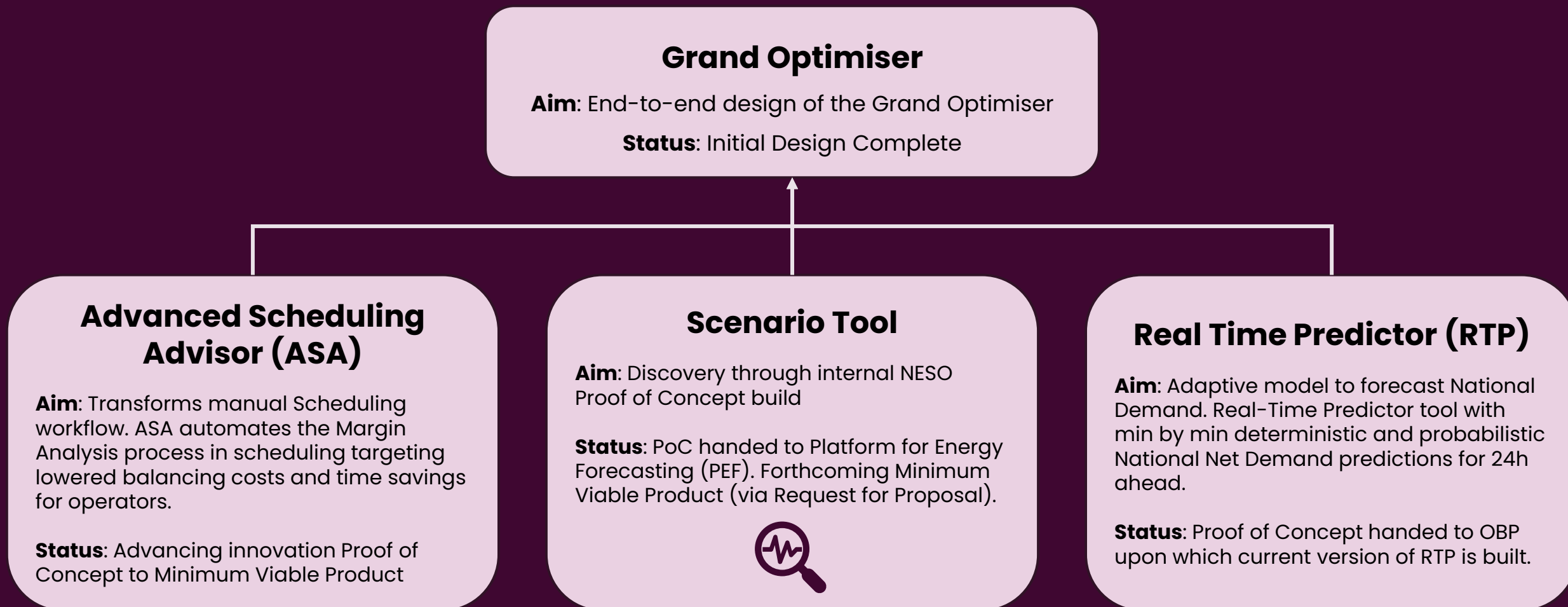
Outputs and decisions driven by fundamental analytics





Volta to Date: What Next?

Moving from innovation to business discovery & development.



REVEAL: A DIGITAL TRIALS PLATFORM



REVEAL: A DIGITAL TRIALS PLATFORM

A ring-fenced environment for testing with market participants, generating evidence and reducing delivery risk

What is REVEAL?

NESO's secure, ring-fenced platform for testing new balancing capabilities with industry before they reach live systems.

- Provides a reusable environment for communications, interoperability and control using real or modelled assets.
- **Benefit:** Builds evidence and operational confidence before enduring change.

What Industry Gains

A reusable base for a wider range of future trials.

- A safe route to test processes before live implementation and earlier input into requirements and guidance.
- **Benefit:** Earlier participant influence, practical testing and stronger decisions.

LINKED TO NESO'S STRATEGIC AMBITIONS



Deliver a secure, resilient & operable energy system

Build operational confidence before change reaches live systems.



Drive consumer value

Reduce set-up time, identify issues earlier and lower delivery risk.



Great Britain's Clean Power Ambition

Enable faster trials for flexible & low carbon participation.

Three Years of Learning have Turned REVEAL into a Live Capability

Discovery and proof of concept were completed; the production platform supported GC0166 with external participants.

From discovery to live use



GC0166 Introduced MDO and MDB parameters to provider a clearer view of how much energy limited duration assets can deliver over time.

What REVEAL has proven/validated with GC0166 trial



Real-world data traffic volume identified

Provider MDO/MDB submission volumes (i.e. data traffic) were higher than initially expected.

Protect contracted volumes

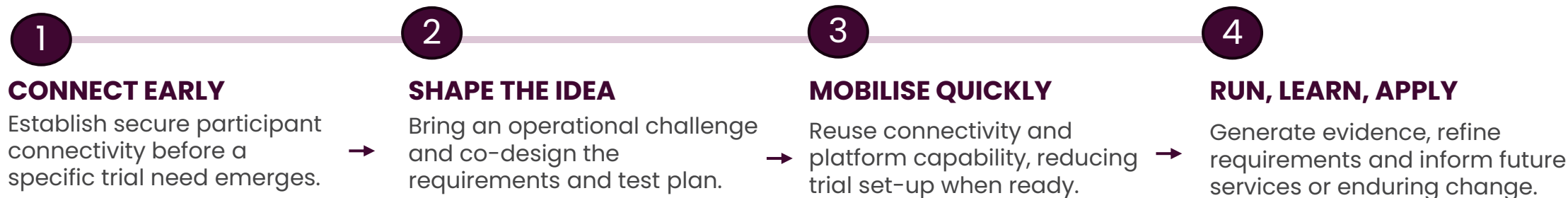
Evidence verified that MDO and MDB submissions should protect contracted Response and Reserve volumes by excluding such volumes.

Enabled controlled testing

A controlled initial rollout enabled data flows and potential impacts to be assessed before wider transition.

What's next for REVEAL?

Early connectivity reduces friction and helps NESO and participants move from an idea to a live trial faster



PROVEN **GC0166**

A practical end-to-end proof point

NEXT **Predictive & synthetic metering**

Testing more adaptable approaches for flexible assets

FUTURE **New services, assets & communications**

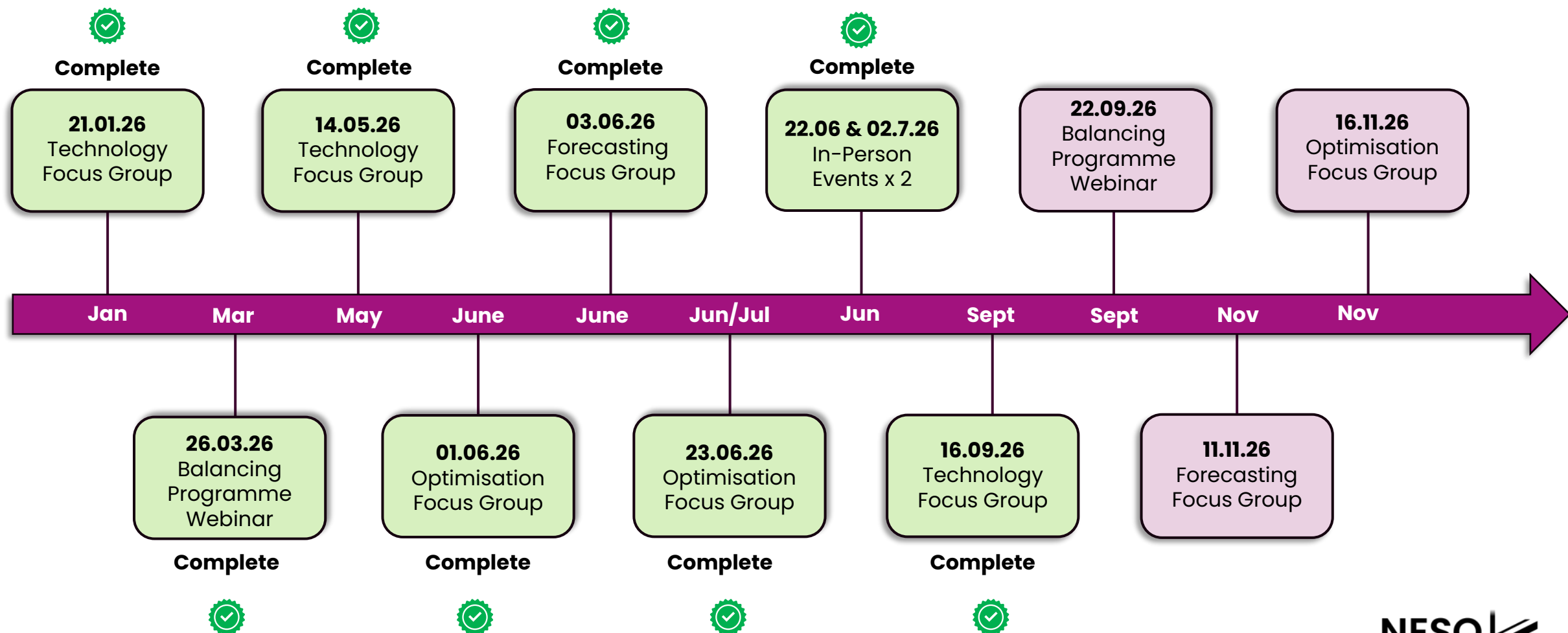
Growing capability around real operational needs

SPEAK TO THE REVEAL TEAM ABOUT CONNECTING
box.balancingprogramme@neso.energy

Q&A

Please post any questions you have for our speakers in the Microsoft Teams Q&A ensuring to list both your **full name and organisation** – this will enable us to follow up with you after the webinar if necessary.

Balancing Programme 2026 Engagement Plan



Support/Contact Points



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



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**Stakeholder Focus
Groups Sign-Up**

Balancing Programme Webinar

22nd September 2026