

Webinar: Dispatch Transparency Project updates

3 November 2025

Welcome

Time	Agenda	Presenter
14:00 – 14:05	Introduction, Slido invitation & Roadmap	Hannah Kirk-Wilson
14:05 – 14:10	Stage 5 & 6 data update	Sam Mancey
14:10 – 14:25	Materiality – cost of skips: Assessment method, publication	Juliette Richards
14:25 – 14:40	Grid Code mod GC0166: Recommendations overview	Jean Hamman
14:40 – 14:50	Dispatch Strategic Review: Aims, objectives, methodology, challenges	Shadi Kerahroudi
14:50 – 15:10	Other project updates: Root Cause Analysis; Skips behind constraints; Target for reduction of skip rates	Will Seward Naomi Mason Hannah Kirk-Wilson
15.10 – 15:15	Brief feedback survey	John Clifford
15:15 – 15:30	Answers to your questions	

Access throughout Sli.do #DTP



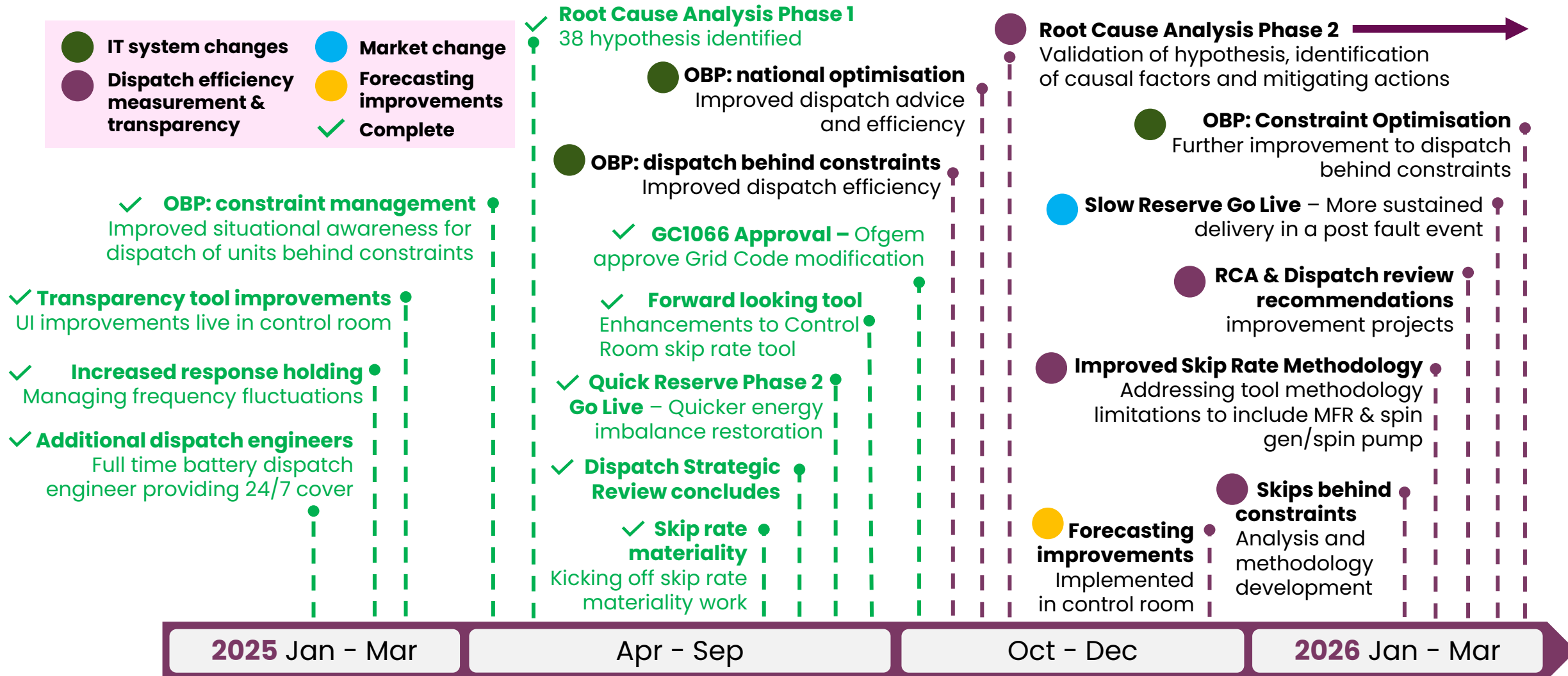
Live Q&A at the end

- **Ask your questions as early as possible** to give our experts time to prepare response
- **Please provide your name and organisation** – we only answer live questions from identified parties
- **Up-vote questions by ‘liking’ them** – we will aim to answer them in up-voted order
- **All questions will be captured and answered**, during or after the webinar
- **Questions beneficial to a wide audience** may be added to our published Q&A on the [Skip Rates](#) page of the NESO website

Brief feedback survey

- Essential to understand how our plans and deliveries are being received

Delivery: commitments & success measures



Stage 5 & 6 data update

Sam Mancey

Stage 5 Bug

We have identified a bug in the current Skip Rate implementation.

This bug affects the exclusion of long notice units and means that some long notice **Bid volume** is not excluded. This typically affects CCGT volume.

We are going to republish all Skip Rate datasets following this webinar before 21/11/2025 to ensure consistency of published metrics and ensure that the skip rate doesn't change due to methodology changes.

Skip Rate	Current	New
January	53%	49%
February	50%	49%
March	48%	46%
April	45%	42%
May	44%	42%
June	51%	47%
July	47%	46%
August	40%	39%
September	45%	42%

Skipped Volume	Current (GWh)	New (GWh)
January	131	121
February	88	86
March	107	104
April	150	141
May	154	148
June	118	111
July	130	127
August	128	122
September	109	102

Stage 6: MFR Exclusion

At the industry forum in May, we shared two potential methodology changes based on limitations identified by LCP Delta:

- 1) Mandatory Frequency Response (MFR)
- 2) Spin Gen / Spin Pump

We have investigated the feasibility and impact of implementing these two exclusions and concluded that:

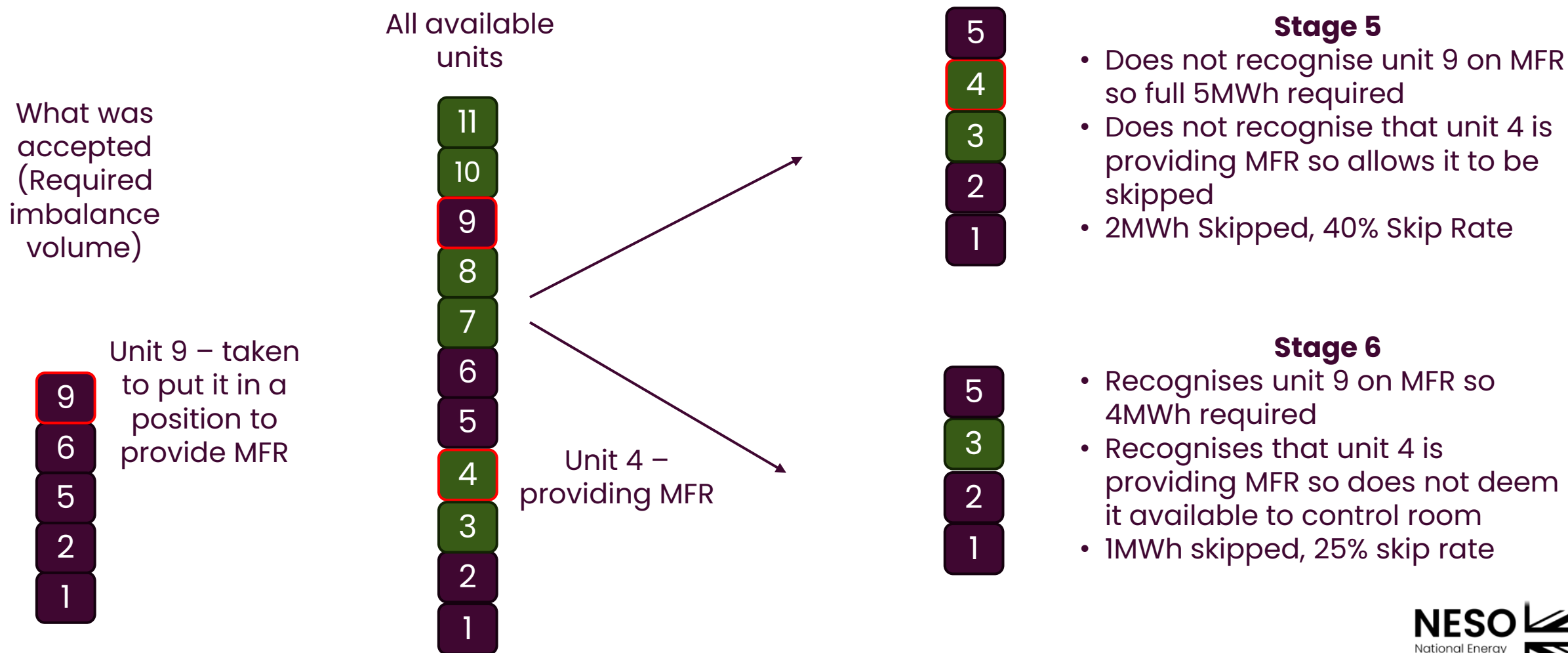
- We will add a new Stage 6 to the methodology to address the MFR limitation
- We can't **currently** account for Spin Gen / Spin Pump due to contractual limitations that would prevent us publishing Skip Rate data at the same level of detail as the current datasets. We are investigating options.

Therefore Stage 6 will include an additional exclusion for MFR, specifically excluding:

- Volume accepted to position units to deliver MFR
- Skipped volume for units that are delivering MFR

For a detailed discussion about these methodology changes, see this [presentation](#).

MFR Exclusion Example



Stage 6: Bids

The impact of MFR exclusions is outlined below.

Note: Because the imbalance requirement can reduce, a large reduction in skipped volume can lead to a relatively smaller reduction in skip rate

Skip Rate	Stage 5	Stage 6	Difference
January	49%	47%	-2%
February	49%	47%	-2%
March	46%	44%	-2%
April	42%	38%	-4%
May	42%	41%	-1%
June	47%	46%	-1%
July	46%	43%	-3%
August	39%	36%	-3%
September	42%	40%	-2%

Skipped Volume	Stage 5 (GWh)	Stage 6 (GWh)	Difference
January	121	97	-20%
February	86	59	-31%
March	104	72	-30%
April	141	89	-37%
May	148	105	-29%
June	111	84	-24%
July	127	84	-34%
August	122	90	-27%
September	102	78	-24%

Stage 6: Offers

The impact of MFR exclusions is outlined below.

Note: Because the imbalance requirement can reduce, a large reduction in skipped volume can lead to a relatively smaller reduction in skip rate

Skip Rate	Stage 5	Stage 6	Difference
January	37%	37%	0%
February	37%	37%	0%
March	33%	34%	+1%
April	43%	40%	-3%
May	35%	32%	-3%
June	33%	32%	-1%
July	36%	35%	-1%
August	31%	30%	-1%
September	32%	32%	0%

Skipped Volume	Stage 5 (GWh)	Stage 6 (GWh)	Difference
January	104	92	-12%
February	134	100	-25%
March	135	102	-24%
April	63	43	-32%
May	71	46	-35%
June	116	82	-29%
July	78	57	-27%
August	86	71	-17%
September	116	94	-19%

Materiality – cost of skips

Juliette Richards

Cost of skip rates

Data update

- As discussed at earlier stakeholder forums, we have carried out initial analysis on the cost of skip rates. We have incorporated recent data changes around Mandatory Frequency Response (MFR).
- This means that the work will effectively cost Stage 6 of the skip rates data, to ensure that the results align with forthcoming changes to the skip rate methodology

Cost of skip rates

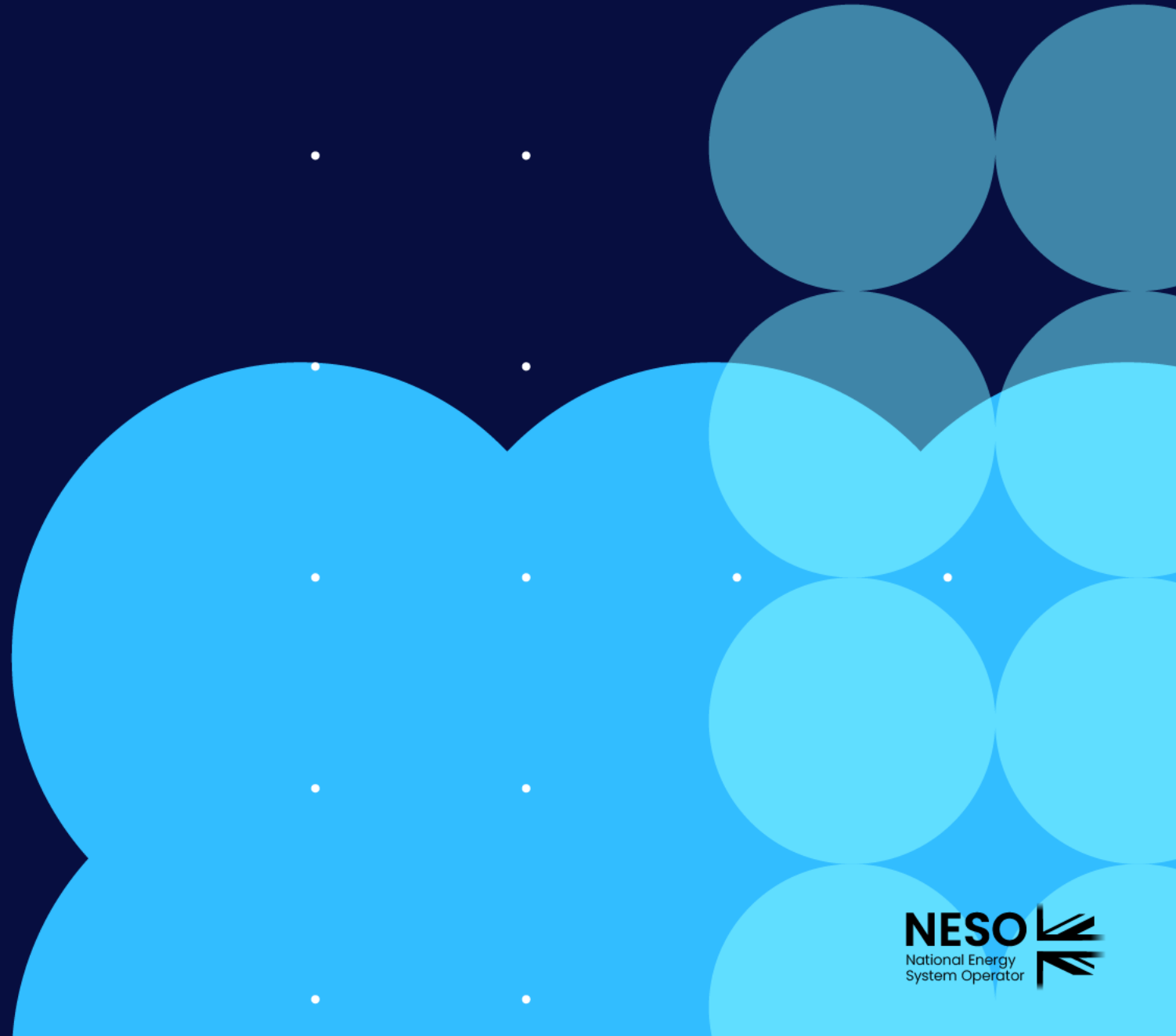
Note: this is subject to internal and external assurance

Methodology update

- At the August forum we discussed our view that, to account for the interdependency of time periods in our costing analysis, we should 'cap' the use of batteries to one cycle per day.
- However, we have received feedback from stakeholders that batteries are likely to cycle multiple times per day, potentially 3-4 times.
- We looked at the impact of 'capping' batteries at 3 cycles per day and found that this made a very small difference to overall cost.
- We therefore feel it would be more transparent **not** to cap batteries for the purposes of the costing analysis.
- This means the final cost figures are likely to be at the upper end of cost estimates, but the methodology will be more readily understood and replicable by stakeholders.

Grid Code modification GC0166

Jean Hamman



GC0166 Grid code changes

- Ofgem have approved changes to the grid code modification GC0166. The change will result in the introduction of new parameters that will allow better use of electricity storage modules in the balancing mechanism.
- Start date (implementation) for the above grid code change – **05/11/2025**
- It is expected NESO will be ready to use GC0166 data **from June 2026**
- NESO will agree a time and date to switch each unit from current arrangement to GC0166. This will be done unit by unit and not all at once.
- Further information on the GC0166 can be found [here](#).
- OFGEM decision can be found here :
<https://www.ofgem.gov.uk/publications/gc0166-grid-code-changes>

Current Process

- MEL and MIL data are utilized to inform NESO of the MWh volumes that can be instructed within the BM Window, adhering to the 30-minute rule, which remains accurate only for the initial 30 minutes on a rolling basis.
- Beyond the BM Window, PN/MEL/MIL data is employed to estimate Power and MWh capability; however, this approach is imprecise since MWh capability is assumed.

Process after GC0166 Implementation

- **MDO/MDB** Implementation
 - Within the BM Window this data will be used to calculate what BOA volumes can be sent.
 - Outside the BM Window this data will be used to schedule MWh volumes
- **FSOE** (Future State of Energy Model) Implementation
 - NESO will request submission of additional data, enabling an optimiser to evaluate all possible unit utilization scenarios from the present time through D+1/D+2 (the time horizon for PN submissions).
 - MDO/MDB will still be used to ensure the BOAs do not exceed the capability of a unit.

Grid code GC0166

Parameter Name	Definition
Bid Acceptance	An acceptance by a BM Unit of a Bid-Offer Acceptance to decrease its export onto, or increase its import from, the National Electricity Transmission System , where in this context import and export are as defined in the BSC .
Future State of Energy (FSOE)	For each Electricity Storage Module , this is a series of MWh figures and associated times, which is calculated by The Company using the data provided under BC1.A.11.1, making up an estimated profile of the energy stored in that Electricity Storage Module .
Maximum Delivery Offer (MDO)	As defined in BC1.A.1.5 Dynamic Parameters .
Maximum Delivery Bid (MDB)	As defined in BC1.A.1.5 Dynamic Parameters .
Offer Acceptance	An acceptance by a BM Unit of a Bid-Offer Acceptance to increase its export onto, or decrease its import from, the National Electricity Transmission System , where in this context import and export are as defined in the BSC .

BC1.A.1.5 Dynamic Parameters

Maximum Delivery Offer (MDO), being a series of MWh figures and associated times making up the profile of the maximum volume of **Offer Acceptances** by a **BM Unit** which can be instructed by **The Company** through **Bid-Offer Acceptances (BOA)** via a **BM Participant** with respect to one or more of their **BM Units**, such that within the current **Balancing Mechanism Window Period**, the **BM Unit's Committed Level** can be adhered to, and contracted **Ancillary Services** can be delivered.

Maximum Delivery Bid (MDB), being a series of MWh figures and associated times making up the profile of the maximum volume of **Bid Acceptances** by a **BM Unit** which can be instructed by **The Company** through **Bid-Offer Acceptances (BOA)** via a **BM Participant** with respect to one or more of their **BM Units**, such that within the current **Balancing Mechanism Window Period**, the **BM Unit's Committed Level** can be adhered to, and contracted **Ancillary Services** can be delivered.

Grid code definition

BC1.A.1.11 Electricity Storage Module Future State of Energy (FSoE) Modelling

BC1.A.1.11.1 BM Participants who own and/or operate **Electricity Storage Modules** must provide asset specific relevant data when requested by **The Company** based on bilateral discussions to allow for modelling by **The Company** of **Future State of Energy (FSoE)** and the limits of operation that an **Electricity Storage Module** must obey.

BC1.A.1.11.2 These models will be used for planning purposes beyond the end of the **Balancing Mechanism Window Period** to the end of the time when interim data is available to **The Company**. **The Company** may use such models to simulate the effect of **Bid-Offer Acceptance** and a **Physical Notification** on the **Future State of Energy (FSoE)**. The requirements for **System Ancillary Services** and/or **Commercial Ancillary Services** within the model will be derived by **The Company** from auction data.

BC2.5.3.4 Resubmissions to Maximum Delivery Offer (MDO) and Maximum Delivery Bid (MDB) for a BM Unit may only be made following Gate Closure for a Settlement Period in the event of:

- a. The **BM Unit** no longer being able to achieve the previously stated value as a result of an unavoidable **Event**. Examples of such an **Event** include (but are not limited to) **Plant** breakdowns, or **Events** requiring a resubmission on safety grounds (relating to personnel or **Plant**); or
- b. The **Company** issuing a **Bid-Offer Acceptance (BOA)** in respect of the **BM Unit**; or
- c. The **BM Unit** fully utilising the energy reserved (or storage capacity for energy which was reserved) for delivery of **System Ancillary Services** or **Commercial Ancillary Services**; or
- d. Submission of a change to a **Physical Notification** for the **BM Unit** under BC1.4.2(a) which covers the **Settlement Period** after the **Balancing Mechanism Window Period**.
 - For the purposes of clarity, if a **BM Participant** doesn't submit values by 11:00 each day for the next **Operational Day** they will default to the **MDO** and **MDB** values previously submitted until updated.

Principles

1. Data submitted must be as precise as possible, as NESO use information outside the BM window for scheduling decisions and within the BM window for BOA creation.
2. MEL/MIL is applied to safeguard the Power range.
3. MDO/MDB is used to protect the MWh volume.

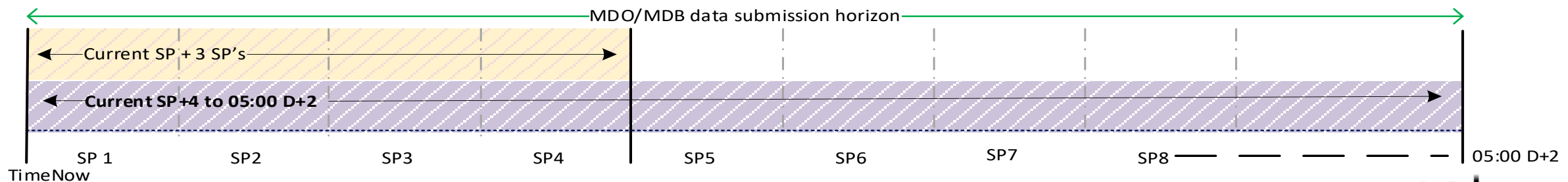
For example, if a 200MWh unit wins the reserve auction for four consecutive thirty-minute periods, it will submit an instantaneous MDO of 50MWh for each period. This ensures that regardless of the BOAs issued, the unit can deliver at least 50MWh in each settlement period. When it is determined that more than 50MWh per settlement period is available, the instantaneous MDO is updated to release the additional MWh volume.

4. The unit should make all volumes not protected for contracts available to NESO through MDO/MDB.
5. If no BOAs, no PN changes and no contracts are won, MDO/MDB values should not need to be redeclared over time.

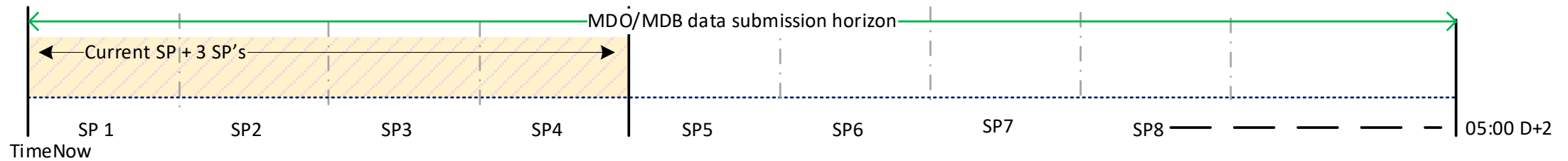
Implementation MDO/MDB & FSoE

- MDO/MDB Data is used to calculate what BOA volume can be issued.
- NESO will ensure BOAs do not leave the unit in a position where PN/CCL cannot be met within the BM Window plus the SP after
- MDO/MDB data will be published on the Elexon website

- Future State of Energy(FSoE) implementation
- Used to schedule a unit from real time to the end of the operational day plus one. (11:00 each day defaulting increases operational day to D+2 05:00)
- FSoE data will not be published on the Elexon website

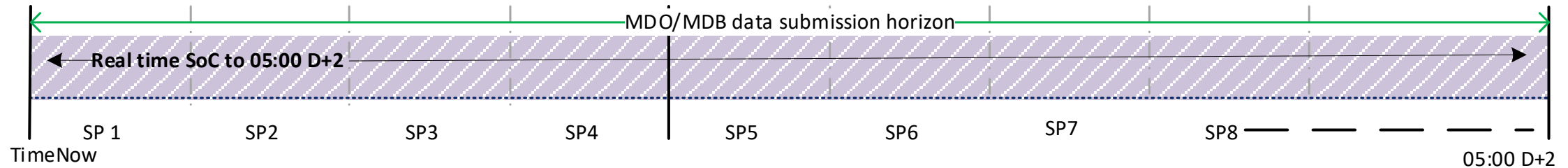


MDO/MDB – Implementation



1. Market participants must submit real-time MDO/MDB values covering every minute aligned with the same horizon as the submitted PN.
2. NESO will utilize these values to determine the volume of Offers or Bids that can be dispatched within the BM window.
3. NESO will verify that a BOA does not compromise the unit's ability to meet the PN/CCL profile for the BM Window plus one settlement period. If two economic BOAs are required, the first will unlock volume, and the second will instruct the use of the unlocked volume.
4. Following each BOA, the unit is required to redeclare MDO/MDB for at least the BM Window plus one settlement period before any subsequent BOA is issued.
5. Outside of the BM Window, the MDO/MDB data will be applied to calculate the available MWh volume over any scheduling horizon NESO is managing, with scheduling being continuously rerun.

FSoE model Implementation



Once MDO/MDB is utilised we will start implementing the FSoE Model to increase the accuracy of the Scheduling process. This will be used in addition to MDO/MDB data. As the FSoE model will not be 100% accurate the MDO/MDB data will ensure the actual BOA does not exceed the MWh capability by even a minute.

The FSoE model will require a combination of the below data. The trials we are running will validate exact data requirements.

Below static data, one value covering the operational day received via Single Markets Platform (SMP), apart from **Real time SoC** – which will be received via the SCADA system (IEMS)

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

Proof of Concept (PoC) by Trials team

- NESO Trials team is currently carrying out PoC with Market Participants.
- Units are supplying MDO/MDB data and FSoE Data to NESO, based on actual units following real-time instructions, initially for a two-day period.
- This PoC aims to consider all feasible data combinations to identify any potential issues.
- The outcomes will result in a Best Practice Document that clearly outlines how data should be generated and submitted to NESO, as well as how NESO will utilise this information.
- The document will detail submission timelines along with comprehensive examples.
- The main objective is to remove ambiguity.
- Contact the Trials team on : box.balancingprogramme@neso.energy

Frequently Asked Questions

- When can we get a detailed worked example on how to submit MDO/MDB?
A: This is currently being worked through the trials team, and we expect to have this presented at the follow up webinar session pencilled in for 4 December 2025
- We already have a worked example as annex 8 in the GC0166 work pack, why is that not correct?
A: It is correct however we have identified a few edge cases that does not meet all objectives. We are refining the spreadsheet example known as annex 8 based on live data through the proof-of-concept trial.
- By how much is this going to reduce skip rates?
A: Hannah Kirk-Wilson will provide an update on the Skip Rate reduction target later in this webinar.
- How do we submit MEL/MIL as the service terms say protect Power for Frequency Response by redeclaring MEL?
A: Service terms were created in accordance with the 30-min rule. We will review the service terms and usage of MEL/MIL for reserve and response as part of the proof-of-concept trials and reflect the same in detailed worked examples.
- Can we see a submission timeline ?
A: This will be covered within the detailed worked examples.
- When do we need to comply with GC0166?
A: Ofgem letter states a minimum one month notice to all market participants, however we will provide ample time. The target is to have first unit Live by middle of next year onwards. We will keep the market updated as we go along.
- Why do we have to submit MDO/MDB even though we are not a Storage unit?
A: You would not need to submit these parameters. NESO will apply a default value on your behalf.
- MDO/MDB data is published to Elexon, how does this work if we switch unit by unit?
A: All units that have not transitioned from the 30-minute rule will have default 9999 values published.

Dispatch Strategic Review

Shadi Kerahroudi

Why we are conducting a Strategic Review

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.



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

Challenge analysis lenses



System security

- **Network reliability** incl. thermal, voltage, stability, restoration, sub-synchronous oscillations
- **Network balancing** including frequency, within day flexibility and system adequacy
- Physical network problems arising from system change



Cost efficiency

- License obligation to demonstrate **cost-effective decision-making in system operation**, market development and strategic planning
- **Accountability to SoS for financial decisions** as part of framework agreement



Market facilitation

- NESO framework requirement to act in accordance with principles of **transparency, coordination, accessibility** in its market-facing activities
- License and framework requirements to **integrate national & local flexibility markets**
- NESO-DNO interactions, market primacy issues



Regulation & agreements

- Adhere to **license obligations & framework agreement**
- Adhere to **technical codes & standards** (e.g. SQSS, grid code)
- **Market changes** such as reformed national pricing, changes to operability services



Tools & infrastructure

- Inception and Integration of **new digital tools & infrastructure** required to facilitate scheduling & dispatch in 2030 and beyond (e.g. OBP)
- **Migration from legacy systems**, such as SORT & SPICE
- Cyber security



Skills & processes

- **Volumes of processes & procedures** that operators must adhere to
- Change to current **processes and ways of working** to meet future system needs
- New **skillsets, roles, human resources** required in scheduling and dispatch process

Root Cause Analysis

Will Seward

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.

NESO Root Cause Analysis

Consultancy projects

Phase 1

Prioritised hypotheses & data analysis (Aug 25)

Phase 2

Actionable recommendations (Apr 26)

Hypotheses

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

Categories

Market Impacts

Operational Discretion

Methodological
Limitations

System Errors

Forecasting Errors

Technical
Limitations

Example: **Methodological Limitations**

“BMUs that actively hold **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.”

Progress on hypotheses



The Stage 6 MFR methodology update will resolve two of the hypotheses.

Outcomes

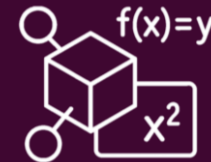
- Impact of hypotheses evidenced with data
- Actionable recommendations for highest impact hypotheses
- Enduring modelling capabilities



Engage



Validate



Model



Recommend

Skips behind constraints

Naomi Mason

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.
- The current skip rate method only assesses the economic efficiency of energy dispatch decisions. Actions taken to manage the system are unable to cause skips.
- We have committed to developing a methodology and agreeing it with industry by April 2026.

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.
- Engage with stakeholders for feedback during the in-person event scheduled for January 2026, prior to methodology implementation.

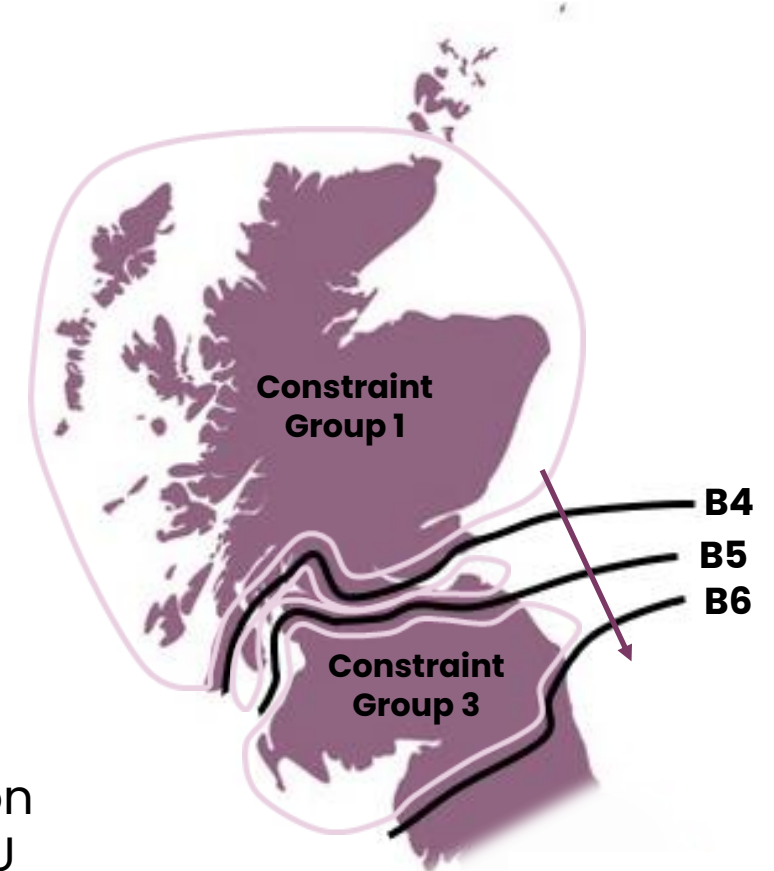
Understanding skips behind constraints

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.

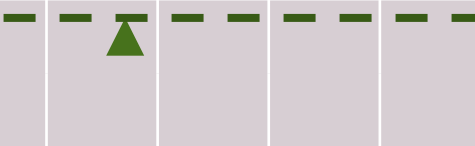
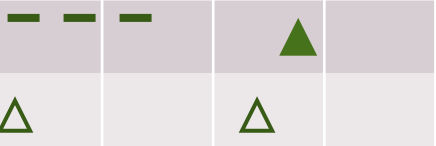

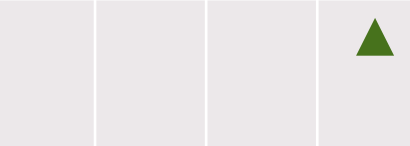
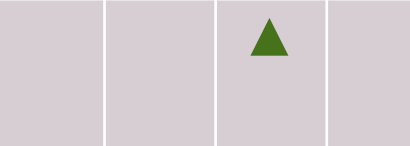


Skip Rate reduction target

Hannah Kirk-Wilson

Skip Rate reduction target

Stakeholder engagement plan

Oct 25	Nov	Dec	Jan 26	Feb
 <p>Consultation Progm leads joining stakeholder meetings hosted by:</p> <ul style="list-style-type: none"> • Assoc for Decentralised Energy (ADE) • Energy Storage Network (ESN) • Energy UK • Flexible Generators Group (FGG), Waters Wye 	 <p>Discussion Webinar – <i>date tbc</i>:</p> <ul style="list-style-type: none"> • Base target on frequency, volume or cost? • Present draft proposal • Discuss rationale <p>Update also provided in webinar 3 Nov, and discussion opportunity in breakout session at Bal Progm Forum 18 Nov</p> <p><i>Recording & slides published on Skip Rates webpage</i></p>	 <p>Draft proposal</p> <ul style="list-style-type: none"> • Published on Skip Rates webpage • News article with link to proposal • Email to core stakeholders with links to website 	 <p>Refinement</p> <ul style="list-style-type: none"> • Announcement – at in-person Forum, 28 Jan • Acknowledge different opinions, explain decisions • Q&A 	 <p>Final proposal</p> <ul style="list-style-type: none"> • Confirmation of target with description and rationale • Published on Skip Rates webpage • Email to core stakeholders with links

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

Brief feedback survey

John Clifford

Brief feedback survey

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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

Q&A

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Balancing Programme Forum

Date 18 November

Time 9:00 – 17:00

Location **Clermont Hotel**, Charing Cross, London

Join us for:

- Latest on our Balancing and Forecasting capabilities planned for delivery into the Control Room, including FY 26/27 & 27/28:
- Demo of the latest Open Balancing Platform (OBP) functionality
- Sessions on dispatch transparency, innovation in balancing and forecasting, market services
- Back by popular demand – “Day in the life of a Control Room engineer”

A more detailed agenda will be shared nearer the time.

Register to secure your place – scan the QR code if you wish.

If you missed our **September webinar**, view the **recording** and download the **slides**.

**All places taken – register
for cancellation waiting list**



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](#)

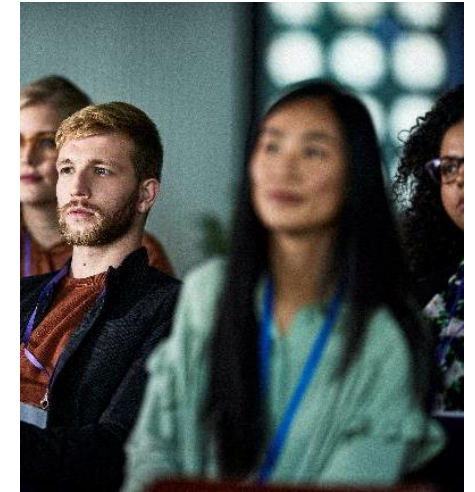
[Operational Transparency Forum](#) (OTF)
weekly updates, including [deep dive](#) on
definitions & calculations (16 Jul)

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

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

Skip Rates webpage

- [Overview & data dashboard](#)
- [Technical information](#)
- [Link to data portal](#)
- [Event recordings & slides](#)
- [Progress updates](#)
- [Q&A](#)



Future events

- 18 Nov Balancing Progm Forum
- Dec *tbc* Webinar on GC0166
- Dec *tbc* Webinar on Materiality &
Skip Rate reduction target
- 28 Jan Dispatch Transparency
Forum