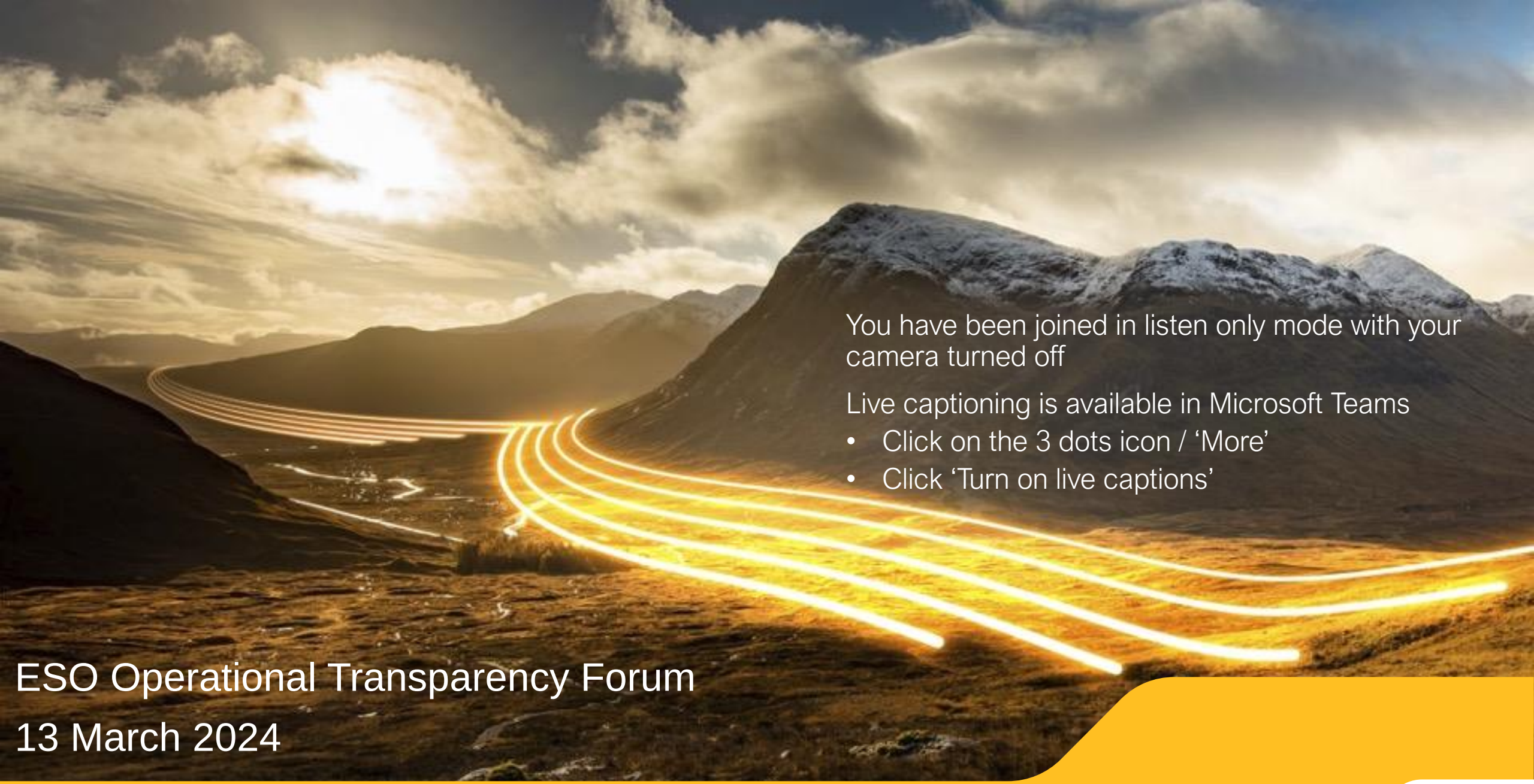


You have been joined in listen only mode with your camera turned off

Live captioning is available in Microsoft Teams

- Click on the 3 dots icon / ‘More’
- Click ‘Turn on live captions’

ESO Operational Transparency Forum

13 March 2024

ESO

Introduction | Sli.do code #OTF

To ask questions live and provide us with post event feedback go to Sli.do and join event code #OTF.

- **Ask your questions as early as possible** as our experts may need time to ensure a correct answer can be given live.
- **Please provide your name or organisation**. This is an operational forum for industry participants therefore questions from unidentified parties will not be answered live. If you have reasons to remain anonymous to the wider forum please use the advance question or email options given on the slide.
- **Questions will be answered in the upvoted order whenever possible**. We will take questions from further down the list when: the answer is not ready; we need to take the question away or the topic is outside of the scope of the OTF.
- **Sli.do will remain open until 12:00**, even when the call closes earlier, to provide the maximum opportunity for you to ask questions.
- **All questions will be recorded and published.** Questions which are not answered on the day will be included, with answers, in the slide pack for the next OTF.
- **Ask questions in advance** (before 12:00 on Monday) at: https://forms.office.com/r/k0AEfKnai3
- **Ask questions anytime** whether for inclusion in the forum or individual response at: box.NC.customer@nationalgrideso.com

Stay up to date on our webpage: https://www.nationalgrideso.com/OTF

Future deep dive / focus topics

Today

Future

We are currently reviewing the large number of requests we received via the OTF survey feedback.

We will be updating in April with outcomes of the survey.

If you have suggestions for future deep dives or focus topics please send them to us at: box.NC.customer@nationalgrideso.com and we will consider including them in a future forum

Markets Forum – March 2024

Share your questions ahead of our Markets Forum Q&A tomorrow

You can submit your questions relating to the Markets Forum and the latest Roadmap videos via Slido **#MFMAR24** or via the QR code below.

We will be answering your questions on **14 March**. To sign up, select here.

If you have any questions, please contact the team at:

box.MarketsEngagement@nationalgrideso.com

ESO

Balancing Programme Webinar

Date: 27 March 2024

Time: 14:00 – 15:30 PM

Hear the latest on:

- Progress to transform our balancing capabilities
- Upcoming releases and their anticipated impact
- Opportunities for proactive collaboration

To sign up to the webinar, click here

To stay up to date with the latest information from the Balancing Programme, subscribe to our newsletter by clicking here

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

Sli.do code #OTF

Enhancing the use of storage assets in our balancing activities

Sli.do code #OTF

Change to extend the 15-minute rule to 30 minutes – transition initiated on 11th March 2024

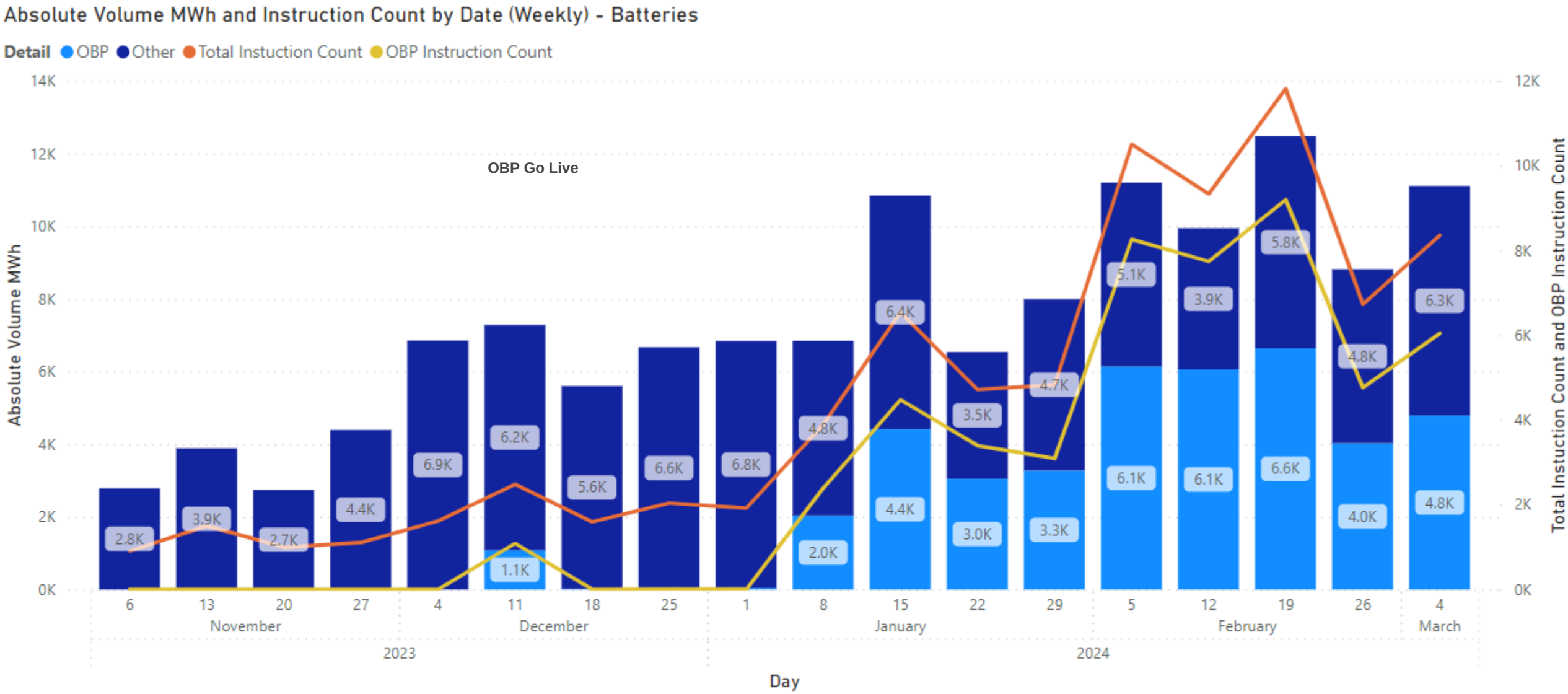
- This will allow energy storage units to be instructed for up to 30 minutes, depending on system conditions. Units must ensure they can sustain their declared available energy for the length of the instruction (up to 30 minutes + 2 minutes ramping), this will be monitored as per normal process. The new 30-minute rule will be in place until new energy storage parameters are introduced as part of GC0166
- Providers have started their transitions since 11th March 2024. The transition period will run for two weeks until 25th March 2024. After this date, we expect all battery providers to be following the 30-min rule in their submissions
- We are asking providers to inform us of their intended date and time of transition, including the applicable Balancing Mechanism Units. To date, we have received plans for about 34% of registered units. Please send us your proposed transition plans as soon as you can
- New MEL/MIL guidance has been issued with details of the 30-minute rule and how to inform us of your transition date
- Get in touch by emailing **box.balancingprogramme@nationalgrideso.com**

Link to the updated MEL/MIL guidance

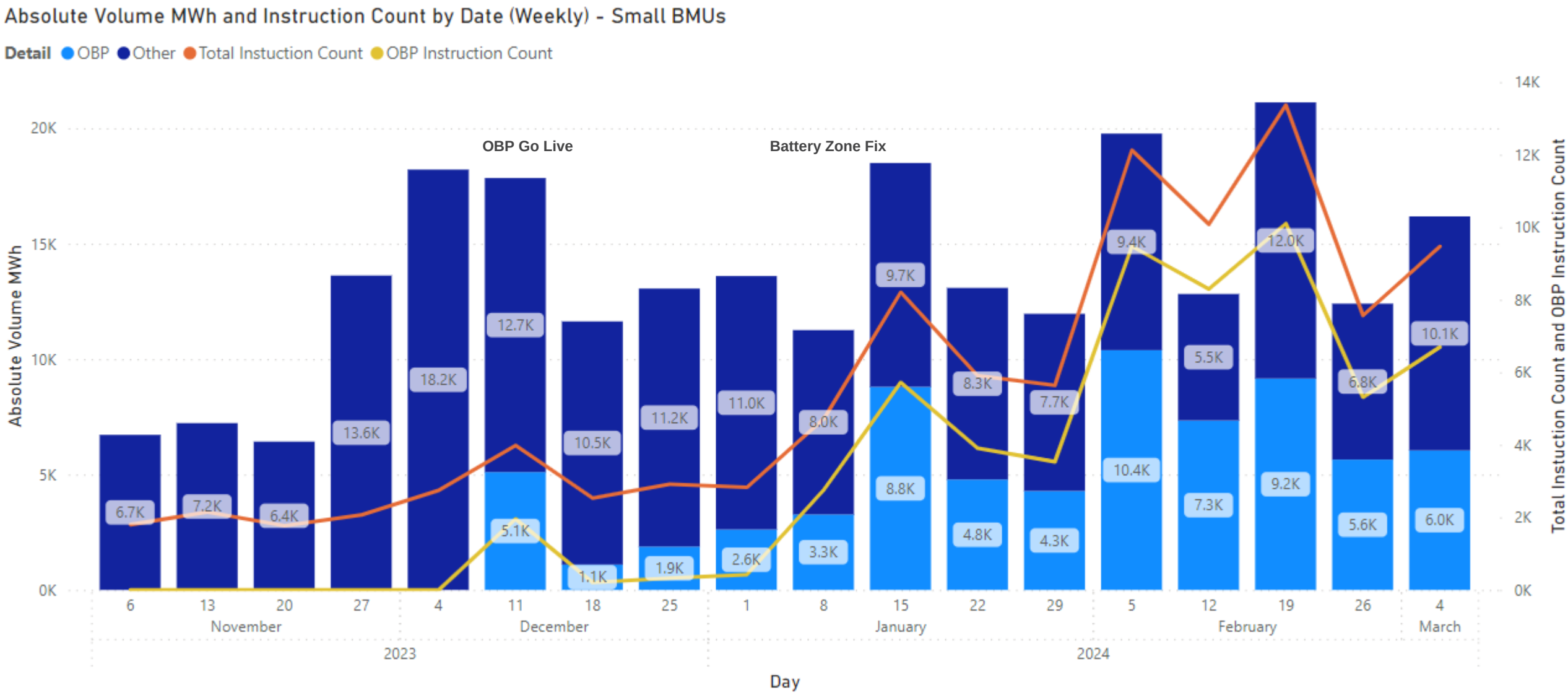
Link to questions & answers from the Storage event & webinar

OBP Utilisation Update – 13.03.24

Batteries – Absolute Volume and Instruction Count



Small BMUs – Absolute Volume and Instruction Count



Balancing Reserve update

ESO

Balancing Reserve – Go Live

Our newest reserve service, Balancing Reserve (BR) went live yesterday for delivery from 23:00 12 March 2024.

We aimed to contract 400MW of Positive and Negative BR across 48 service windows (30 min duration) throughout the day.

On Day 1…

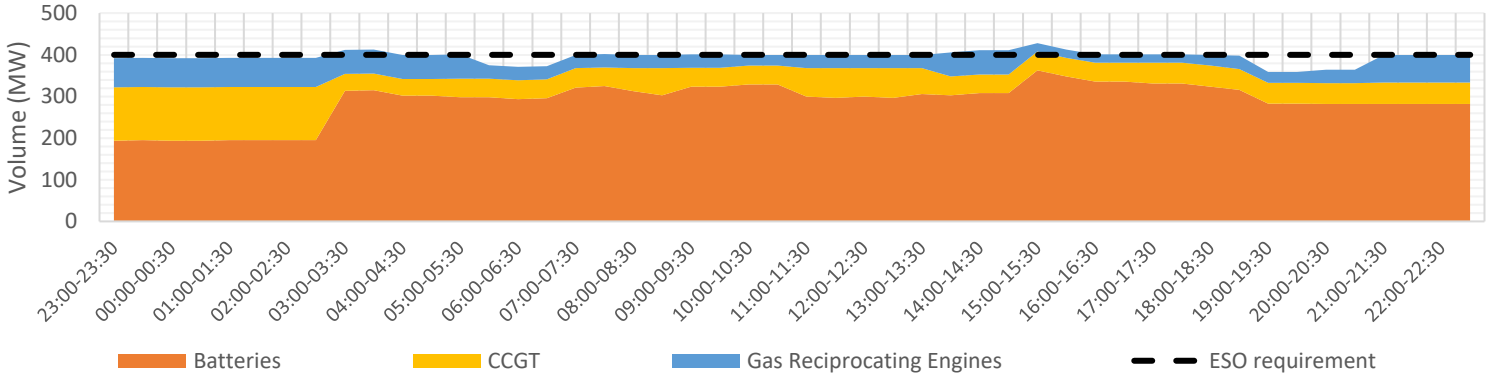
47 units participated

5,534 sell orders submitted

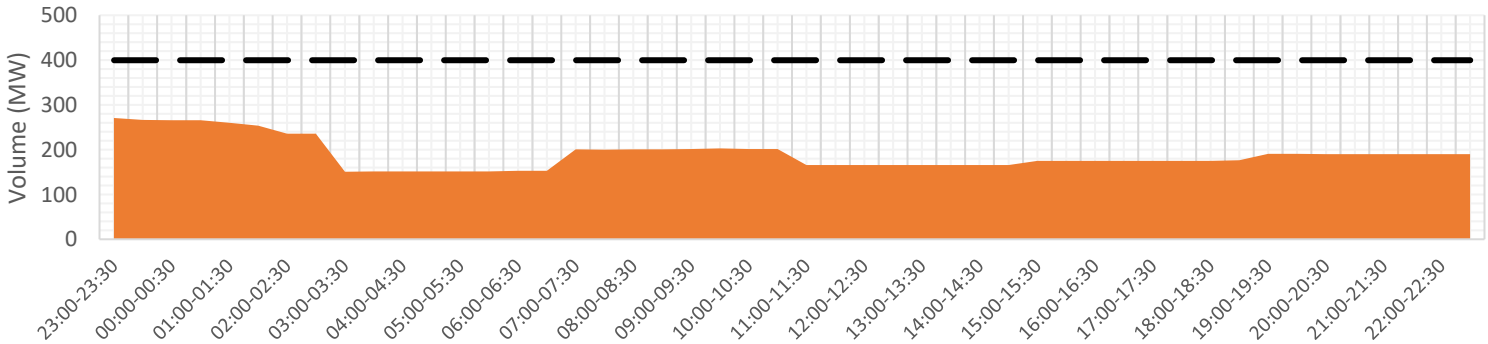
Across **3,006** baskets

57 seconds to solve the algorithm

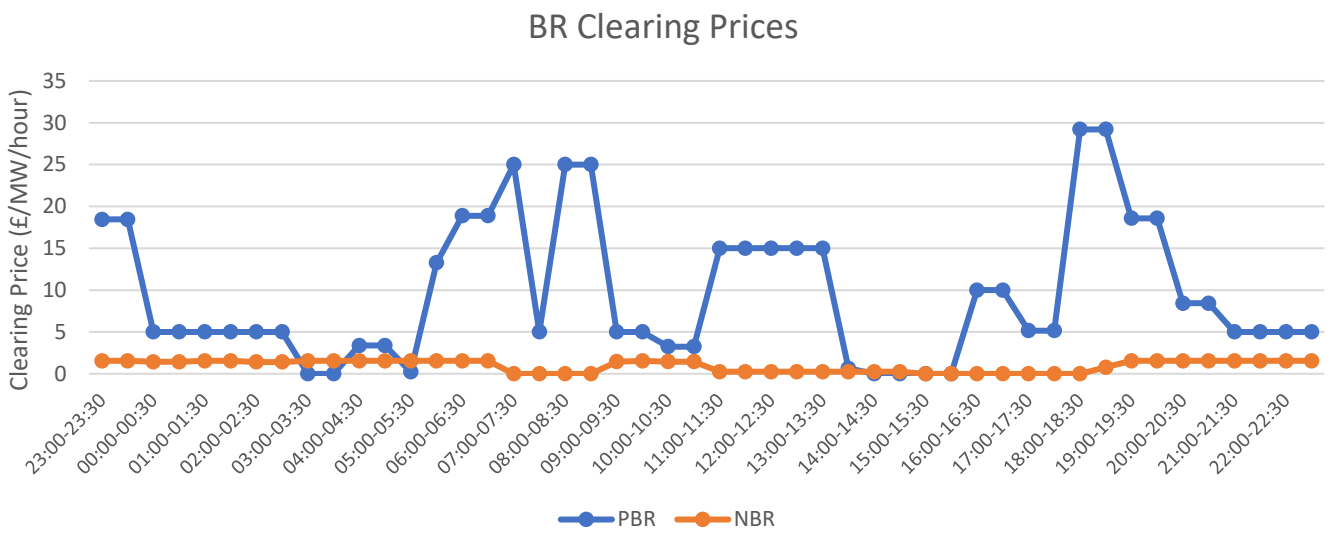
Procured volume by technology type - PBR

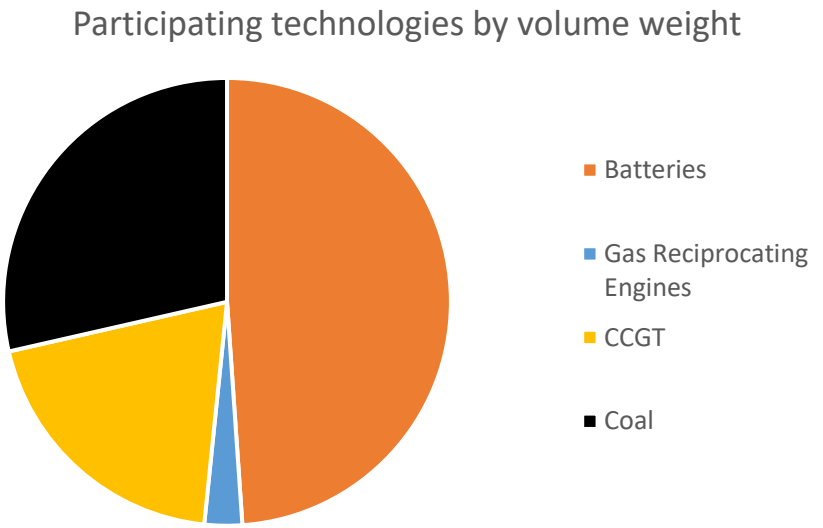


Procured volume by technology type - NBR



Balancing Reserve – Go Live

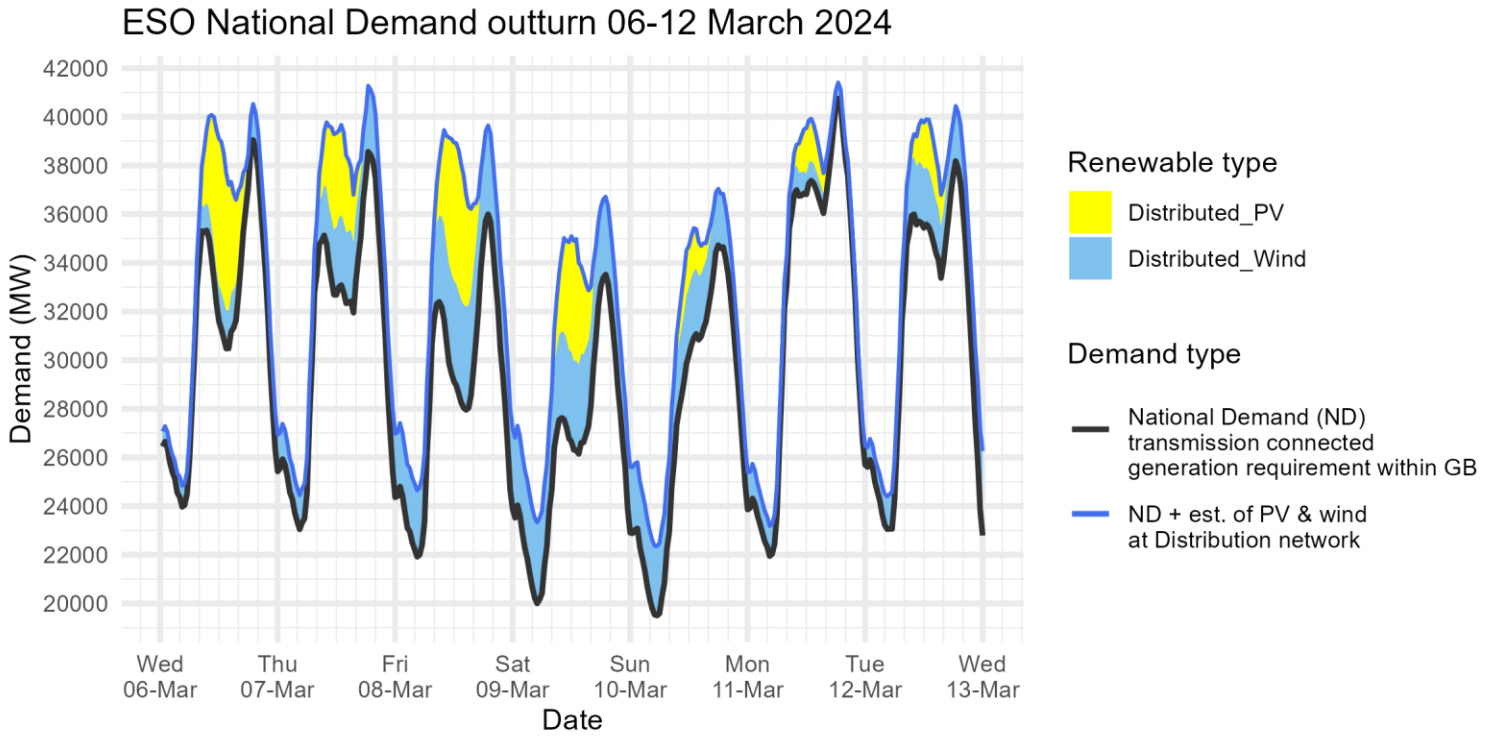




What's Next?

- Final industry drop-in session tomorrow (11am).
- We will continue to learn about price discovery within the markets and refine our buy order strategy.
- We will gather feedback from our control room and industry colleagues – please contact box.futureofbalancingservices@nationalgrideso.com to submit feedback over email or arrange a call with the team.
- Full auction results can be found on our data portal.

Demand | Last week demand out-turn



Date	Forecasting Point	FORECAST (Wed 06 Mar) National Demand (GW)	FORECAST (Wed 06 Mar) Dist. wind (GW)	OUTTURN National Demand (GW)	OUTTURN Dist. wind (GW)
06 Mar	Evening Peak	38.9	1.5	39.0	1.5
07 Mar	Overnight Min	23.0	1.4	23.0	1.4
07 Mar	Evening Peak	37.9	2.4	38.6	2.7
08 Mar	Overnight Min	22.0	2.4	21.9	2.7
08 Mar	Evening Peak	35.8	3.3	36.0	3.6
09 Mar	Overnight Min	19.8	3.3	20.0	3.3
09 Mar	Evening Peak	32.8	3.1	33.5	3.2
10 Mar	Overnight Min	19.1	2.8	19.5	2.9
10 Mar	Evening Peak	34.5	2.7	34.7	2.3
11 Mar	Overnight Min	20.9	2.0	21.9	1.2
11 Mar	Evening Peak	39.2	1.7	40.7	0.7
12 Mar	Overnight Min	22.8	1.3	23.1	1.3
12 Mar	Evening Peak	39.2	1.4	38.2	2.3

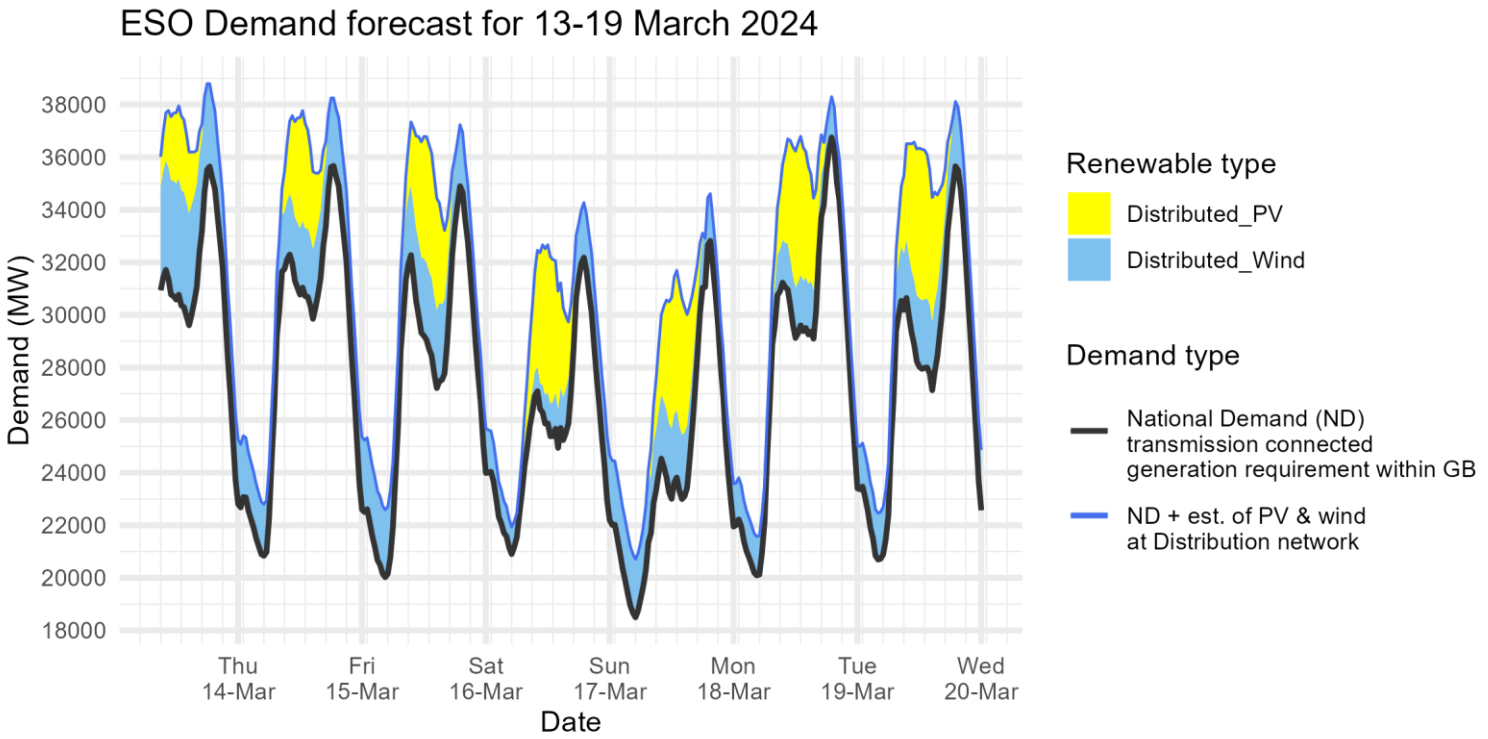
The black line (National Demand ND) is the measure of portion of total GB customer demand that is supplied by the transmission network.

ND values **do not include** export on interconnectors or pumping or station load

Blue line serves as a proxy for total GB customer demand. It includes demand supplied by the distributed wind and solar sources, but it does not include demand supplied by non-weather driven sources at the distributed network for which ESO has no real time data.

Historic out-turn data can be found on the ESO Data Portal in the following data sets: Historic Demand Data & Demand Data Update

Demand | Week Ahead



		FORECAST (Wed 13 Mar)	
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)
13 Mar 2024	Evening Peak	35.6	3.2
14 Mar 2024	Overnight Min	20.8	2.0
14 Mar 2024	Evening Peak	35.7	2.6
15 Mar 2024	Overnight Min	20.0	2.6
15 Mar 2024	Evening Peak	34.9	2.3
16 Mar 2024	Overnight Min	20.9	1.0
16 Mar 2024	Evening Peak	32.2	2.1
17 Mar 2024	Overnight Min	18.5	2.2
17 Mar 2024	Evening Peak	32.8	1.8
18 Mar 2024	Overnight Min	20.1	1.5
18 Mar 2024	Evening Peak	36.8	1.6
19 Mar 2024	Overnight Min	20.7	1.8
19 Mar 2024	Evening Peak	35.7	2.3

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Operational margins | Week Ahead

How to interpret this information

This slide sets out our view of operational margins for the next week. We are providing this information to help market participants identify when tighter periods are more likely to occur such that they can plan to respond accordingly.

The table provides our current view on the operational surplus based on expected levels of generation, wind and peak demand. This is based on information available to National Grid ESO as of 13th March and is subject to change. It represents a view of what the market is currently intending to provide before we take any actions. The interconnector flows are equal to those in the Base case presented in the Winter Outlook.

The indicative surplus is a measure of how tight we expect margins to be and the likelihood of the ESO needing to use its operational tools.

For higher surplus values, margins are expected to be adequate and there is a low likelihood of the ESO needing to use its tools. In such cases, we may even experience exports to Europe on the interconnectors over the peak depending on market prices.

For lower (and potentially negative) surplus values, then this indicates operational margins could be tight and that there is a higher likelihood of the ESO needing to use its tools, such as issuing margins notices. We expect there to be sufficient supply available to respond to these signals to meet demand.

Margins are adequate for the next week.

Day	Date	Notified Generation (MW)	Wind (MW)	IC Flows* (MW)	Peak demand (MW)	Indicative surplus (MW)
Thu	14/03/2024	40678	11010	4080	36270	15700
Fri	15/03/2024	41098	11230	4080	34490	18100
Sat	16/03/2024	41106	8610	4080	33020	16810
Sun	17/03/2024	41112	9630	4080	33240	17660
Mon	18/03/2024	41959	7180	3820	37100	11840
Tue	19/03/2024	41984	11310	3820	36800	16440
Wed	20/03/2024	42248	8640	3820	37150	13570

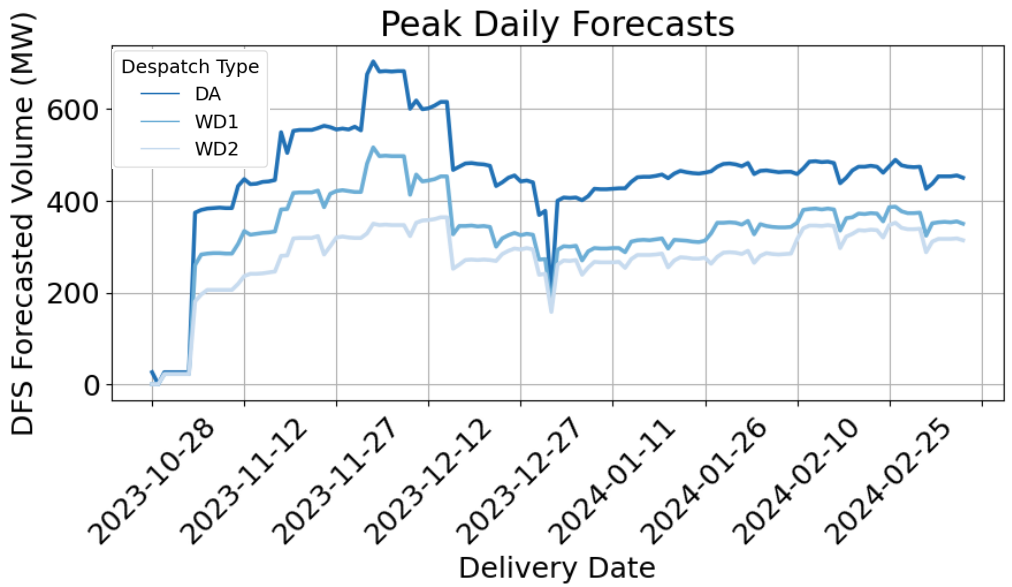
*Interconnector flow in line with the Winter Outlook Report Base Case but will ultimately flow to market price

This is the final OTF margins update for winter 23/24. A view of the operating margin is available on BMRS: https://bmrs.elexon.co.uk/surplus-forecast-and-margin

Sli.do code #OTF

DA	*Day-ahead procurement.*
WD1	*Procurement at around 09:00 for same day delivery.*
WD2	*Procurement at around 12:00 for same day delivery.*

Demand Flexibility Service



Despatch Type	Number of events		
	Live	Test (GAP £3,000/MWh)	Test (GAP £0/MWh)
Day-ahead	2	2	0
Within day 1	0	3	2
Within day 2	0	2	3
Total	**2**	**7**	**5**

Latest events:

No tests last week

Market Information Report – March 2024 summary

The ESO was contractually obliged to run at least 6 test Events this Winter but would endeavour to run 12, at various system conditions, to maximise learning opportunities.

We are assessing the bidding behaviour and delivery data from the events completed to date and **may initiate further tests** should they offer sufficient value to the ongoing discussion around the evolution of the service.

https://www.nationalgrideso.com/document/304481/download

DFS Webinar – Overview & What's next

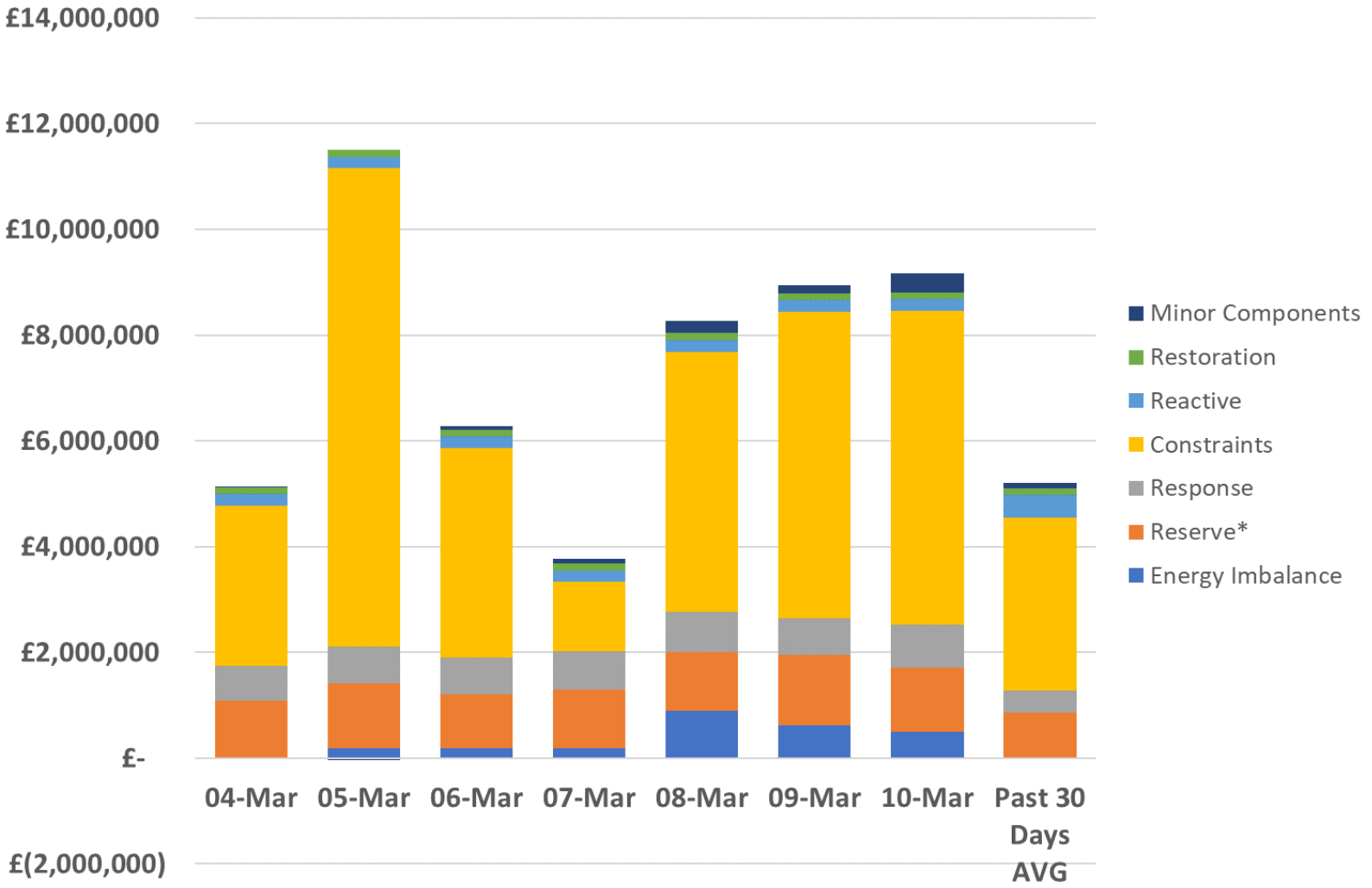
Join us for this session on Friday 22 March from 10:00 – 11:00 for an overview of DFS winter 23/24 so far and an early view on the future evolution of the service.

Register here

https://www.nationalgrideso.com/data-portal/demand-flexibility-service

ESO Actions | Category costs breakdown for the last week

Date	Total (£m)
04/03/2024	5.1
05/03/2024	11.5
06/03/2024	6.3
07/03/2024	3.8
08/03/2024	8.3
09/03/2024	9.0
10/03/2024	9.2
Weekly Total	53.0
Previous Week	36.4

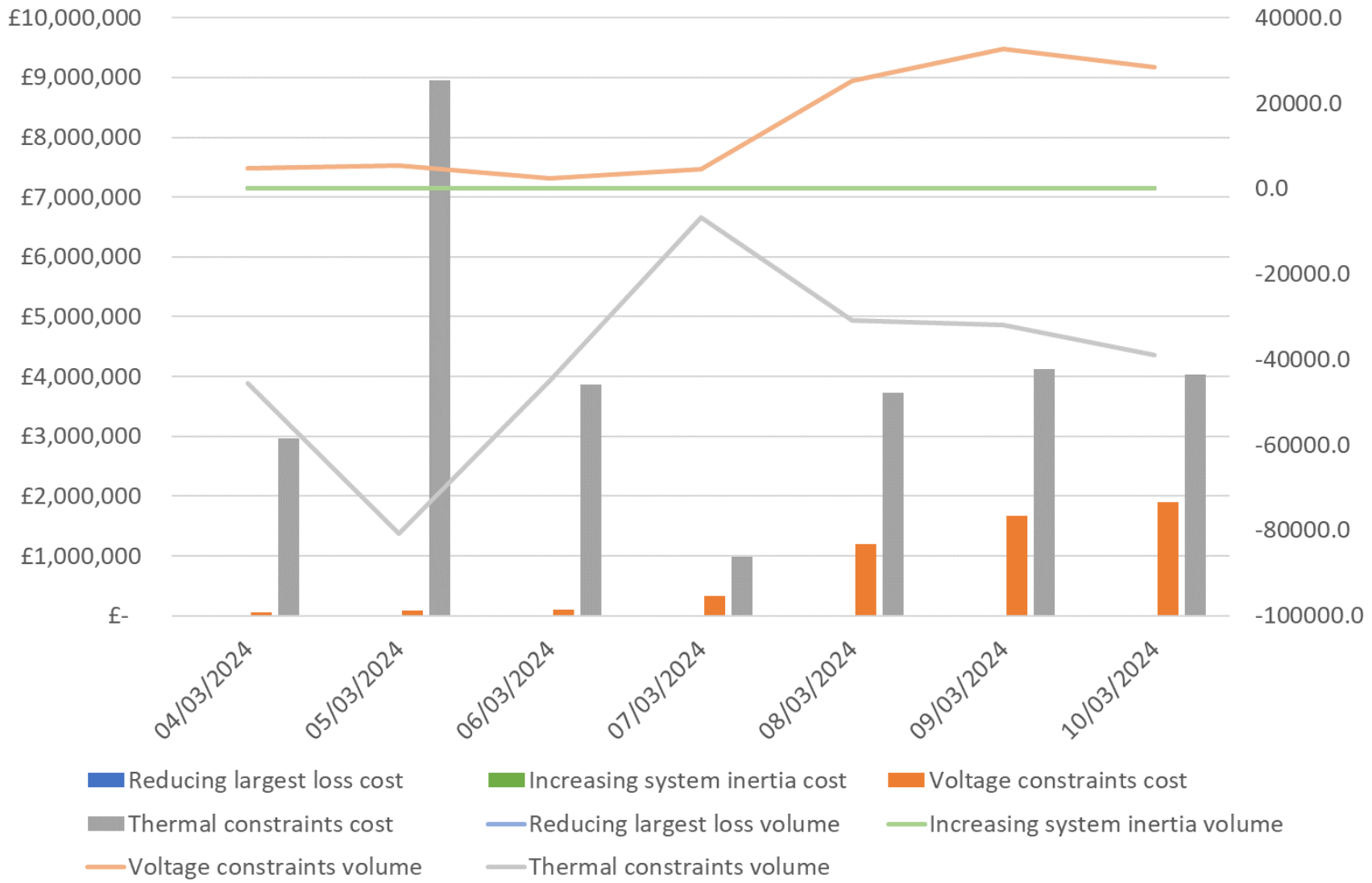


Constraints and Reserve costs were the key cost component for the week.

Please note that all the categories are presented and explained in the MBSS.

Data issue: Please note that due to a data issue on a few days over the last few months, the Minor Components line in Non-Constraint Costs is capturing some costs on those days which should be attributed to different categories. It has been identified that a significant portion of these costs should be allocated to the Operating Reserve Category. Although the categorisation of costs is not correct, we are confident that the total costs are correct in all months. We continue to investigate and will advise when we have a resolution.

ESO Actions | Constraint Cost Breakdown



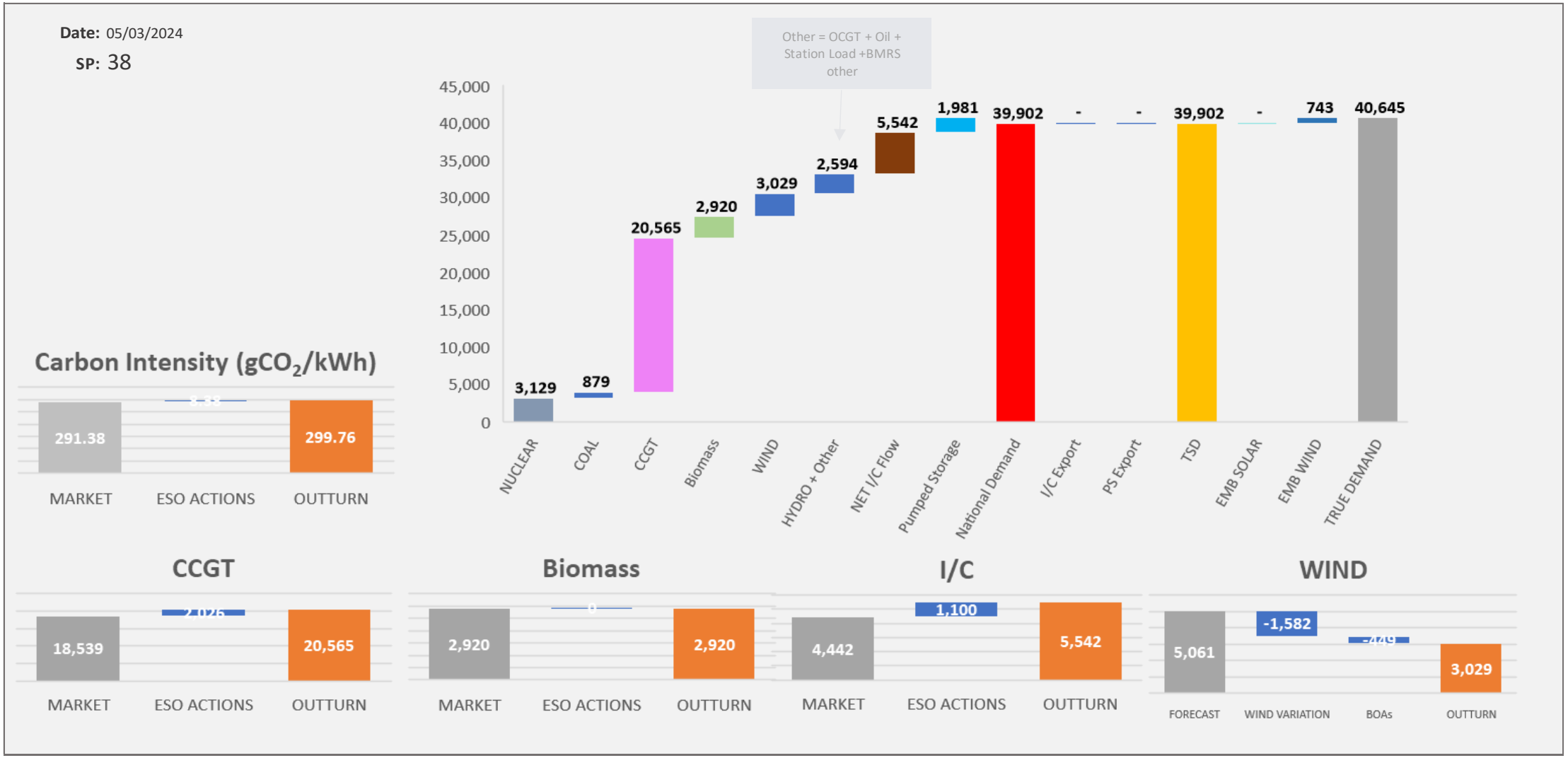
Thermal – network congestion
Actions were required to manage thermal constraints throughout the week, with the most significant costs on Tuesday.

Voltage
Intervention was required to manage voltage levels throughout the week.

Managing largest loss for RoCoF
No intervention was required to manage largest loss.

Increasing inertia
No Intervention was required to manage System Inertia.

ESO Actions | Monday 05 March – Peak Demand – SP spend ~£208k

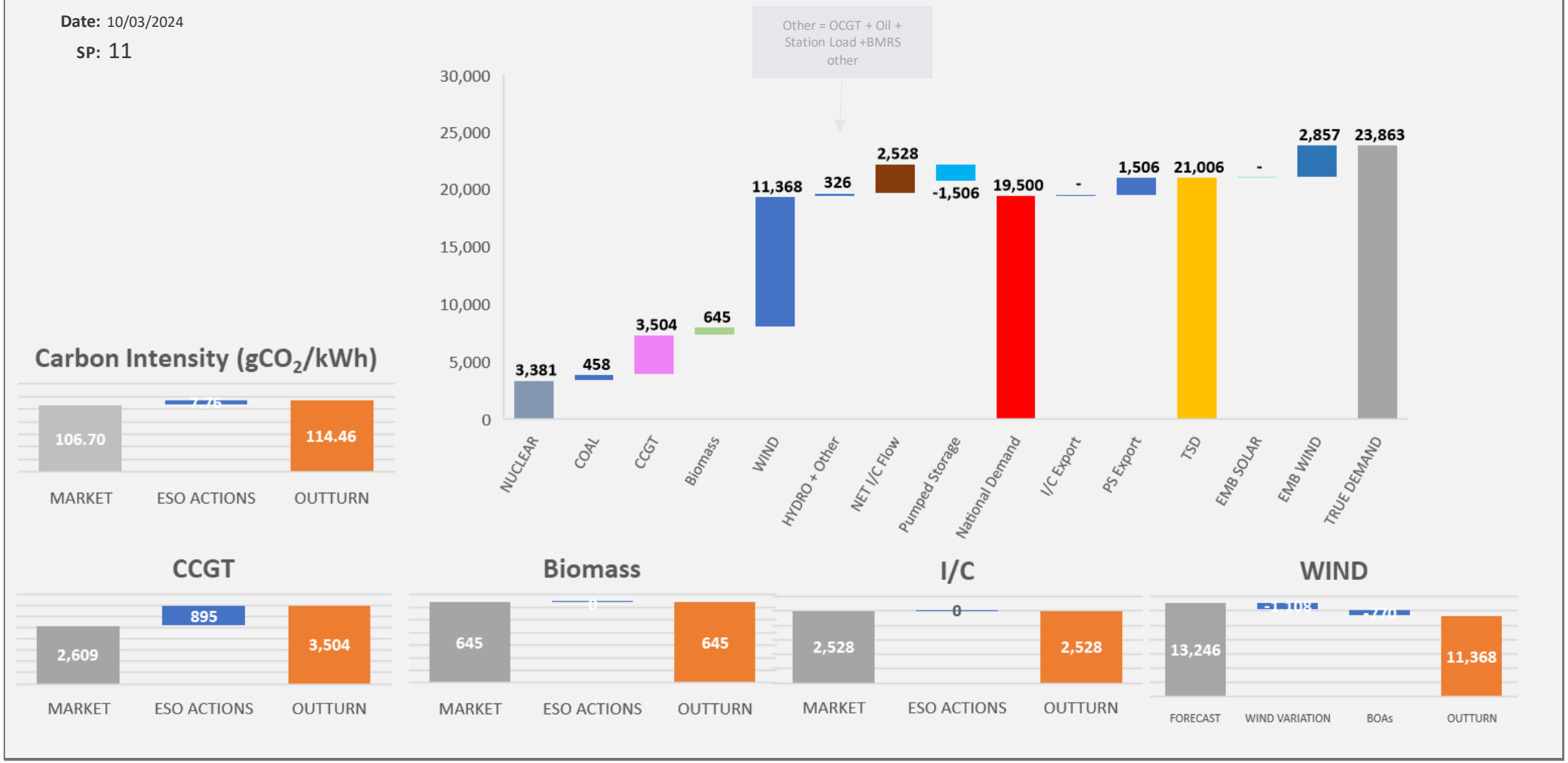


Carbon Intensity data on data portal: https://www.nationalgrideso.com/data-portal/carbon-intensity-balancing-actions#:~:text=The%20carbon%20intensity%20of%20balancing,profile%20with%20balancing%20actions%20applied.

ESO Actions | Thursday 10 March – Minimum Demand – SP Spend ~£235k

Date: 10/03/2024

SP: 11



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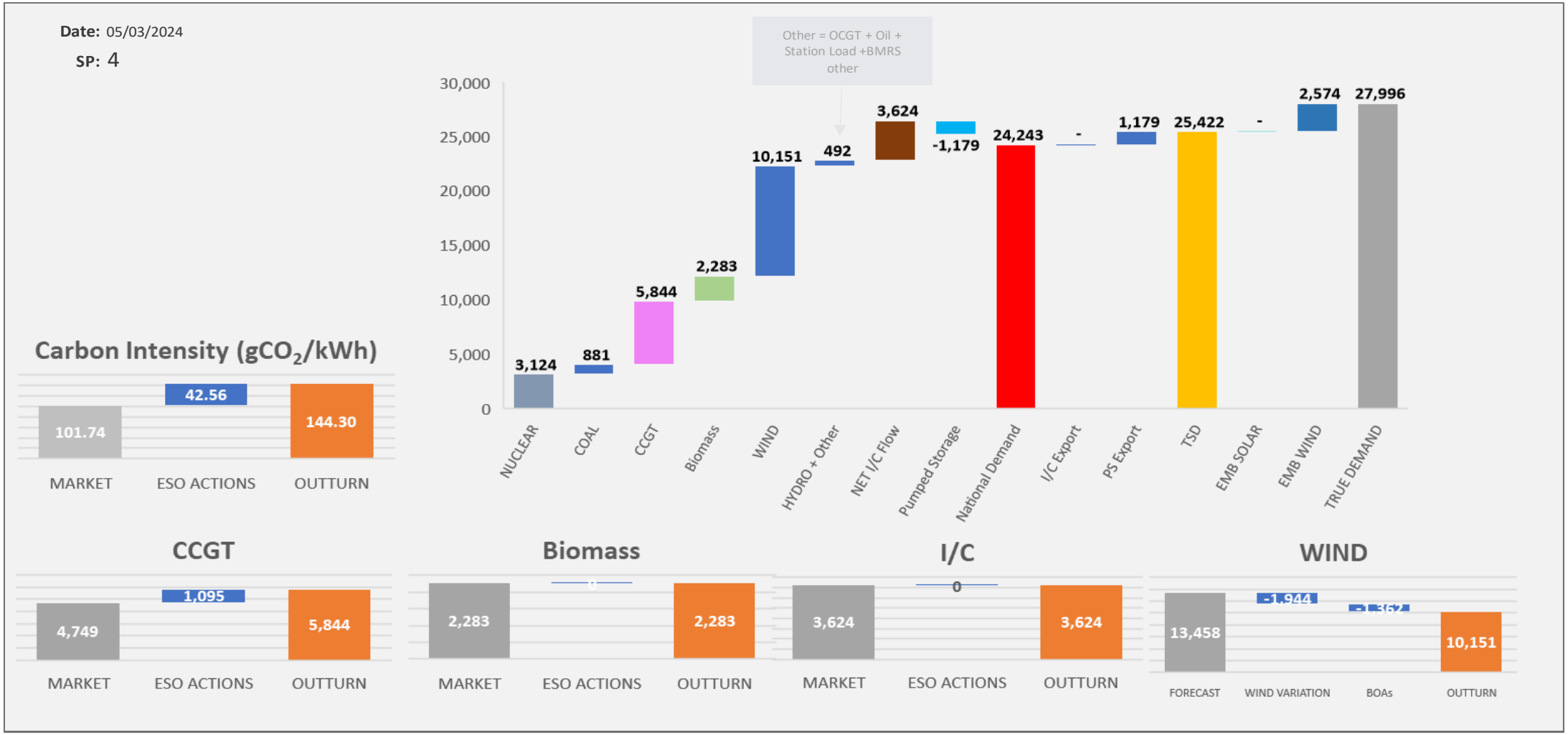
ESO Actions | Thursday 05 March – Highest SP Spend ~£283k



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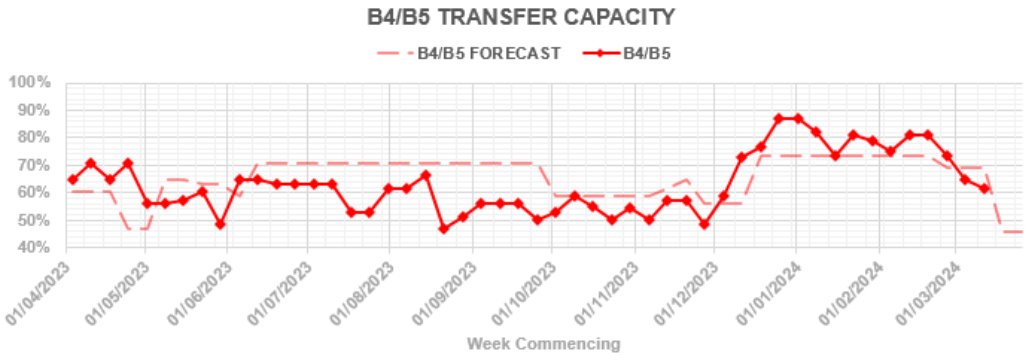
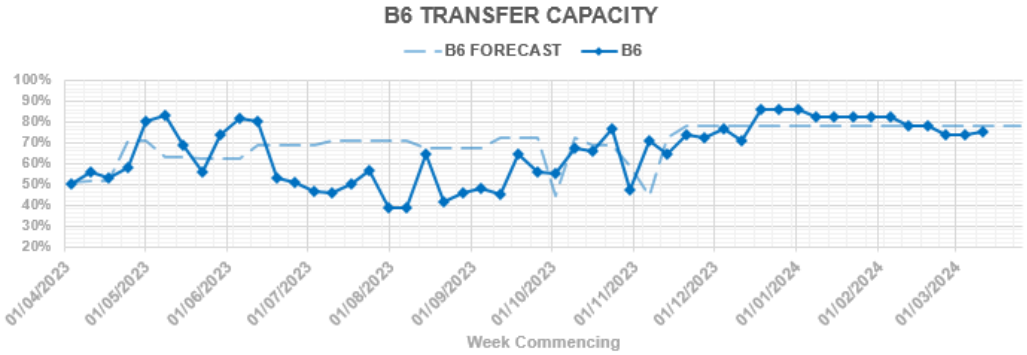
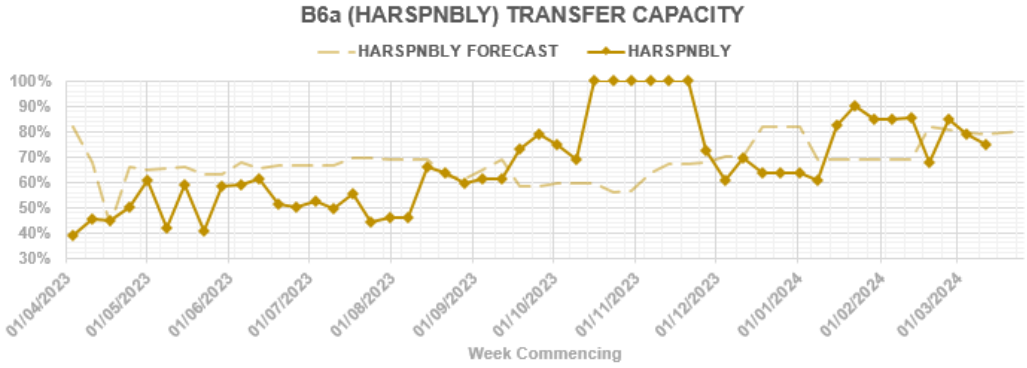
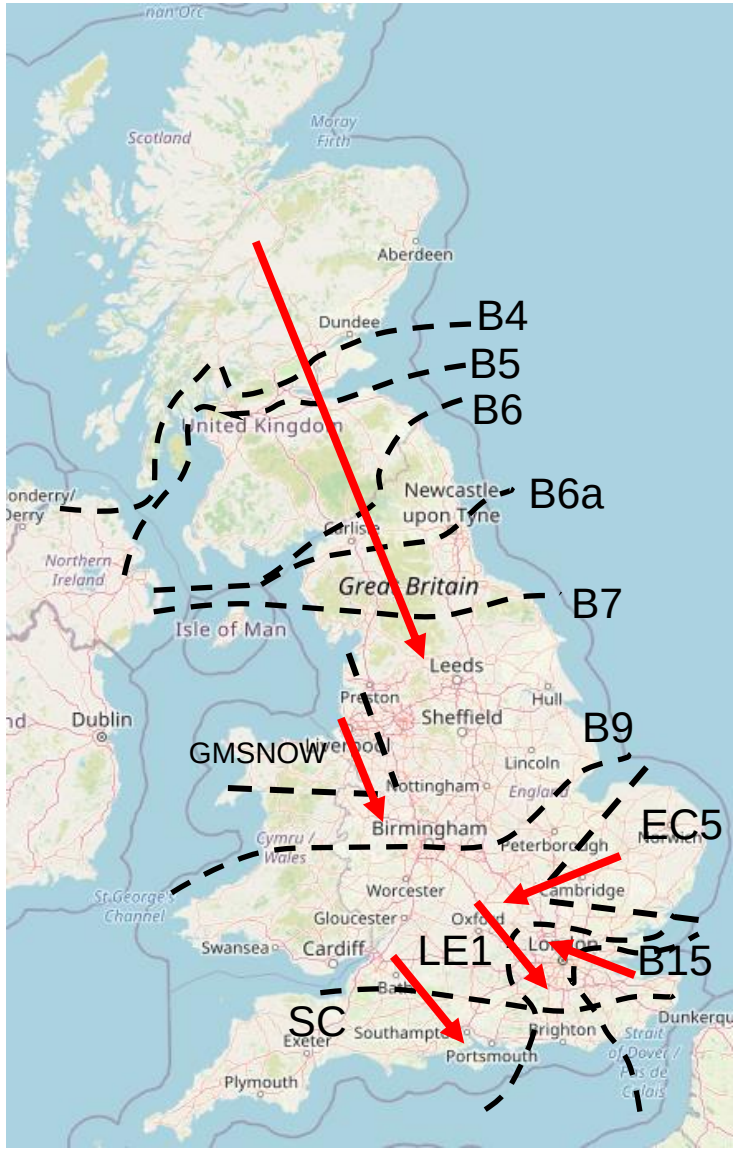
Transparency | Network Congestion





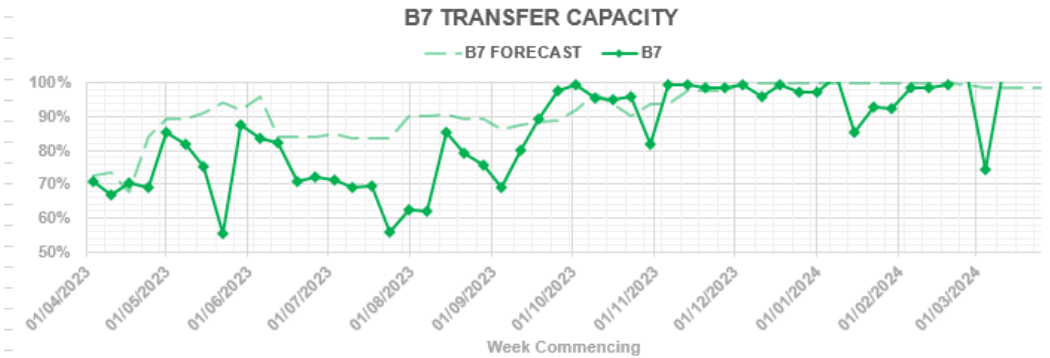


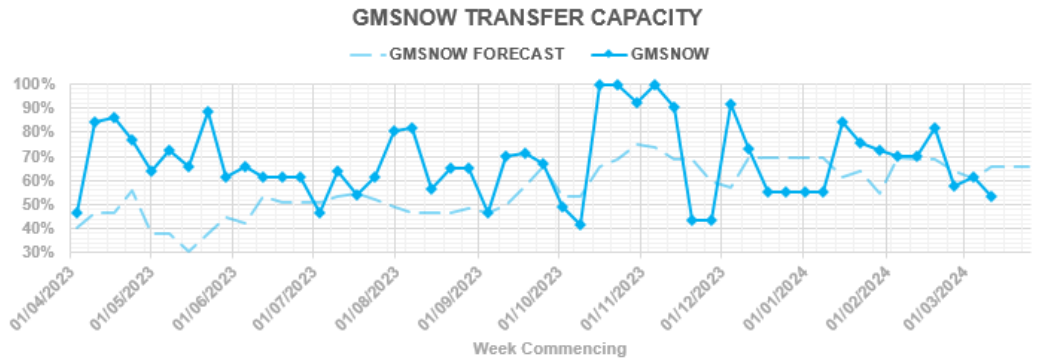
Boundary	Max. Capacity (MW)	Current Capacity (%)
B4/B5	3400	62%
B6	6800	75%
B6a	8000	75%
B7	8325	100%
GMSNOW	4700	53%
EC5	5000	84%
LE1	8500	72%
B15	7500	100%
SC	7300	100%

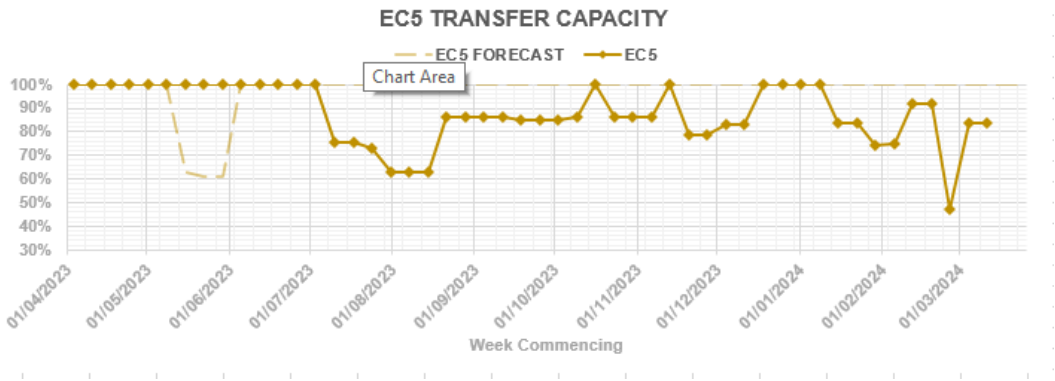


Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
[Constraints Management]

Transparency | Network Congestion







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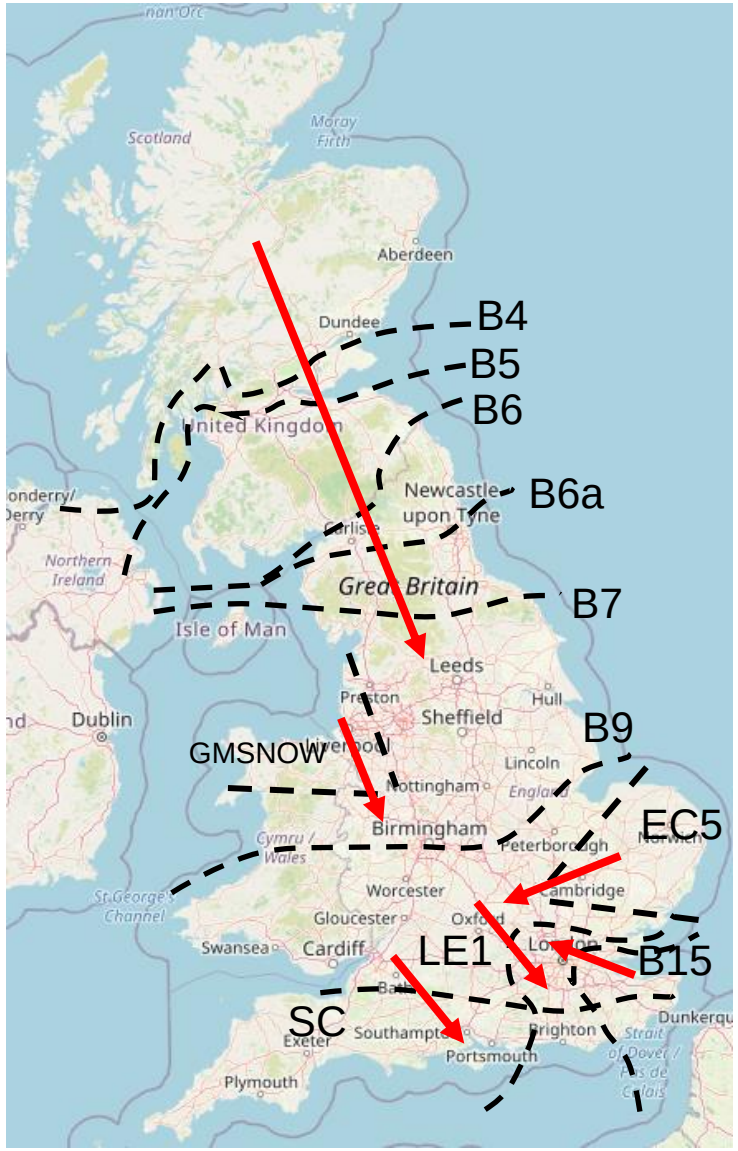

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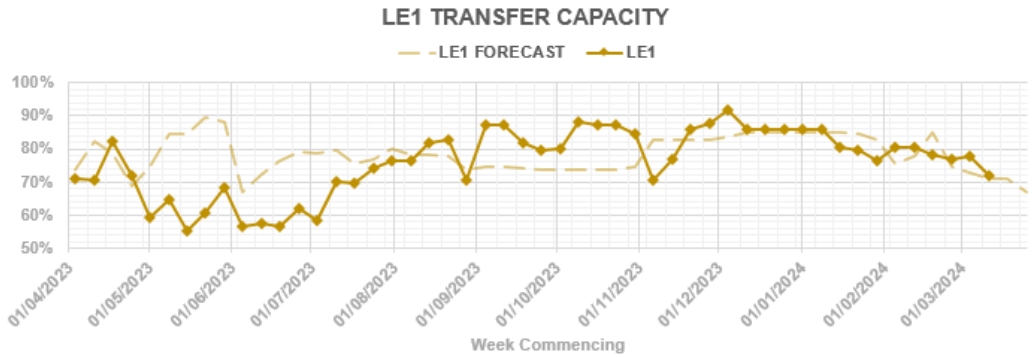
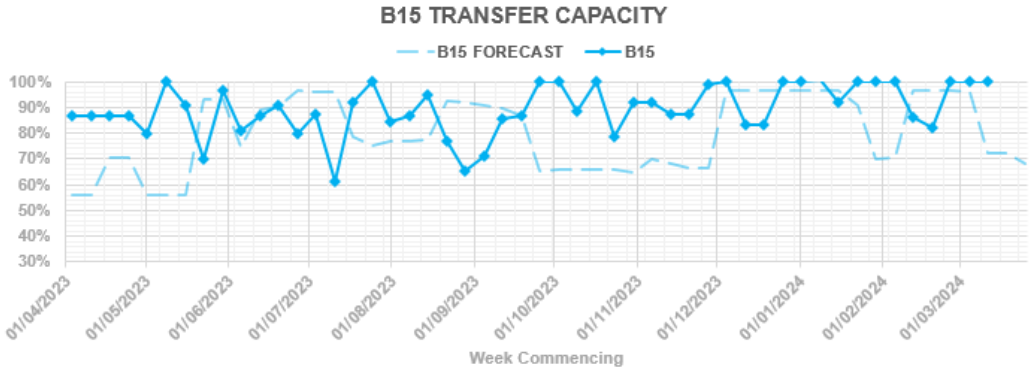
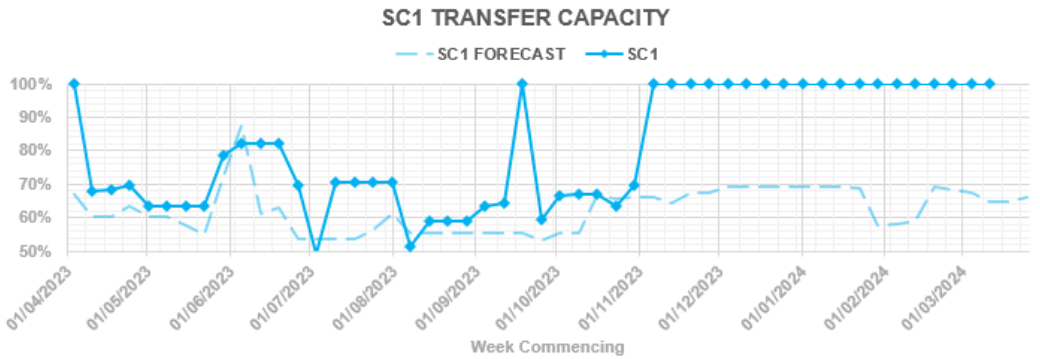
Transparency | Network Congestion







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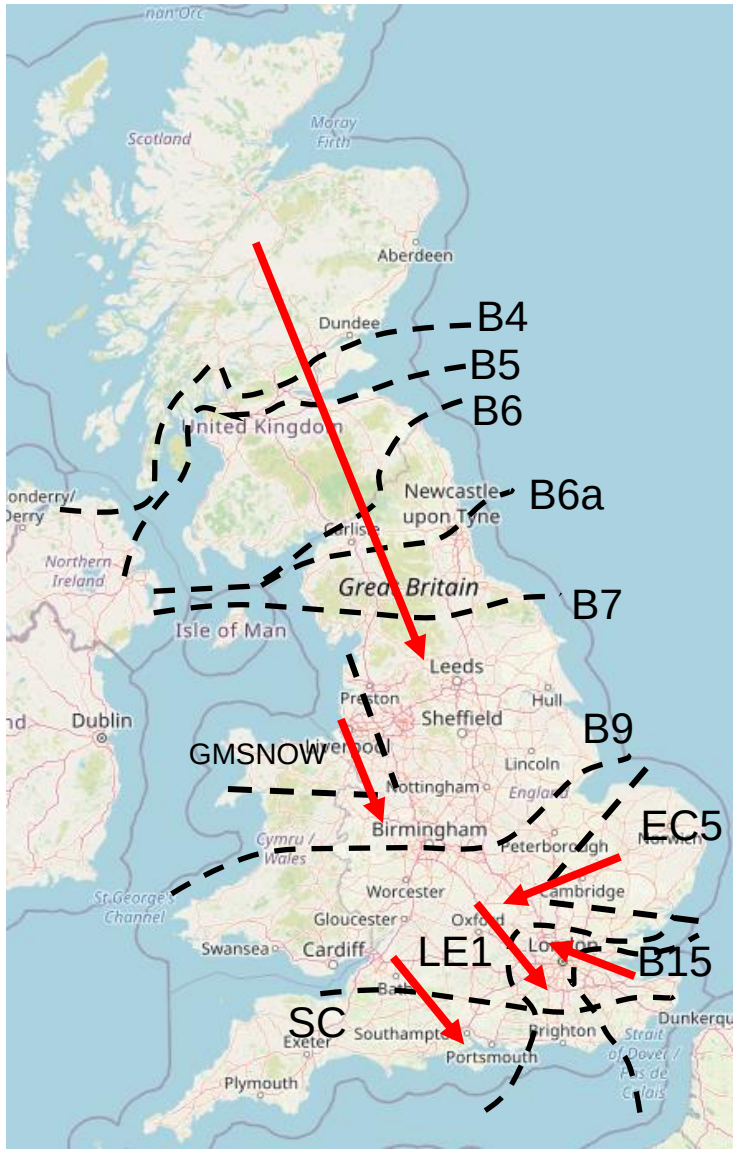

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[Constraints Management]

Previously asked questions

Q: What level of inertia contribution does demand provide?

A: We don't currently share the demand inertia to public. Inertia from demand was derived based on historical frequency events and the value has been under periodic review to ensure the data and model in ESO inertia calculation are good reflection of system condition changes.

Q: On DFS, what was the rationale for making the auction pay-as-bid rather than pay-as-cleared?

As part of the Article 18 consultation process for new balancing services we complete a pricing pro-forma to determine whether the payment mechanism for the new market should be Pay-as-Clear or Pay-as-Bid.

The pro-forma for the 2023/24 DFS service can be found on our website.

The key message is that the market is not sufficiently competitive for a Pay-as-Clear payment mechanism to function efficiently.

Our analysis showed that during the live events from the 22/23 DFS a single provider held more than 60% market share by volume. This produced an Herfindahl-Hirschman Index (HHI) competition measure of over 4000. Pay-as-clear is only recommended for sufficiently competitive markets, ideally ones where the HHI is <1500.

Advance Questions

Q: I submitted a question regarding BM re-pricing before the 21st Feb OTF which has not been answered, would you be able to provide an update on this? Thanks

“On 13 Feb (during settlement period 30), there were a number of bids accepted from several wind farms that were re-priced. Would you be able to explain why? From what I can see in guidance documents, repricing is normally only used for STOR, demand control actions, or contingency balancing reserve actions but these bids don't seem to fit into these categories. Thanks very much”

A: The other reason actions are repriced is when there are energy actions that are more expensive than the system actions that were taken. This is described in BSC Section T Annex 1: Final Ranked Set of system actions
https://bscdocs.elexon.co.uk/bsc/bsc-section-t-settlement-and-trading-charges#annex-t-1

Outstanding Questions

Q: For the network congestion transparency slides, is it possible to show more of the forecast constraints (so future view) than what happened ~ a year ago against plan. That would be more helpful. I understand that plans change so wouldn't take it as gospel!

Q: A large amount of large BMUs were instructed on to cover the evening peak on 20th Feb, however a number of assets were skipped in the process by a fairly large margin. 2 units failed to start early, but weren't replaced. Was the large amount taken in order to cover for some of them failing?

Reminder about answering questions at the ESO OTF

- **Questions from unidentified parties will not be answered live**. If you have reasons to remain anonymous to the wider forum please use the advance question or email options. Details in the appendix to the pack.
- **Questions will be answered in the upvoted order whenever possible**. We will take questions from further down the list when: the answer is not ready; we need to take the question away or the topic is outside of the scope of the OTF.
- **Sli.do will remain open until 12:00**, even when the call closes earlier, to provide the maximum opportunity for you to ask questions.
- **All questions will be recorded and published** All questions asked through Sli.do will be recorded and published, with answers, in the Operational Transparency Forum Q&A on the webpage: https://www.nationalgrideso.com/what-we-do/electricity-national-control-centre/operational-transparency-forum
- **Takeaway questions** – these questions will be included in the pack for the next OTF, we may ask you to contact us by email in order to clarify or confirm details for the question.
- **Out of scope questions** will be forwarded to the appropriate ESO expert or team for a direct response. We may ask you to contact us by email to ensure we have the correct contact details for the response. These questions will not be managed through the OTF, and we are unable to forward questions without correct contact details. Information about the OTF purpose and scope can be found in the appendix of this slide pack

slido

Audience Q&A Session

ⓘ Start presenting to display the audience questions on this slide.

Feedback

Please remember to use the feedback poll in sli.do after the event.

We welcome feedback to understand what we are doing well and how we can improve the event for the future.

If you have any questions after the event, please contact the following email address:
box.NC.Customer@nationalgrideso.com

Appendix

Purpose and scope of the ESO Operational Transparency Forum

Purpose

The Operational Transparency Forum runs once a week to provide updated information on and insight into the operational challenges faced by the control room in the recent past (1-2 weeks) and short term future (1-2 weeks). The OTF will also signpost other ESO events, provide deep dives into focus topics, and allow industry to ask questions.

Scope

Aligns with purpose, see examples below:

In Scope of OTF

Material presented i.e.: regular content, deep dives, focus topics
ESO operational approach & challenges
ESO published data

Out of Scope of OTF

Data owned and/or published by other parties
e.g.: BMRS is published by Elexon
Processes including consultations operated by other parties e.g.: Elexon, Ofgem, DESNZ
Data owned by other parties
Details of ESO Control Room actions & decision making
Activities & operations of particular market participants
ESO policy & strategic decision making
Formal consultations e.g.: Code Changes, Business Planning, Market development

Managing questions at the ESO Operational Transparency Forum

- OTF participants can ask questions in the following ways:
  - Live via Sli.do code #OTF
  - In advance (before 12:00 on Monday) at https://forms.office.com/r/k0AEfKnai3
  - At any time to box.NC.Customer@nationalgrideso.com

- **All questions asked through Sli.do** will be recorded and published, with answers, in the Operational Transparency Forum Q&A on the webpage: Operational Transparency Forum | ESO (nationalgrideso.com)
- **Advance questions** will be included, with answers, in the slide pack for the next OTF and published in the OTF Q&A as above.
- **Email questions** which specifically request inclusion in the OTF will be treated as Advance questions, otherwise we will only reply direct to the sender.
- **Takeaway questions** – we may ask you to contact us by email in order to clarify or confirm details for the question.
- **Out of scope questions** will be forwarded to the appropriate ESO expert or team for a direct response. We may ask you to contact us by email to ensure we have the correct contact details for the response. These questions will not be managed through the OTF, and we are unable to forward questions without correct contact details. Information about the OTF purpose and scope can be found in the appendix of this slide pack