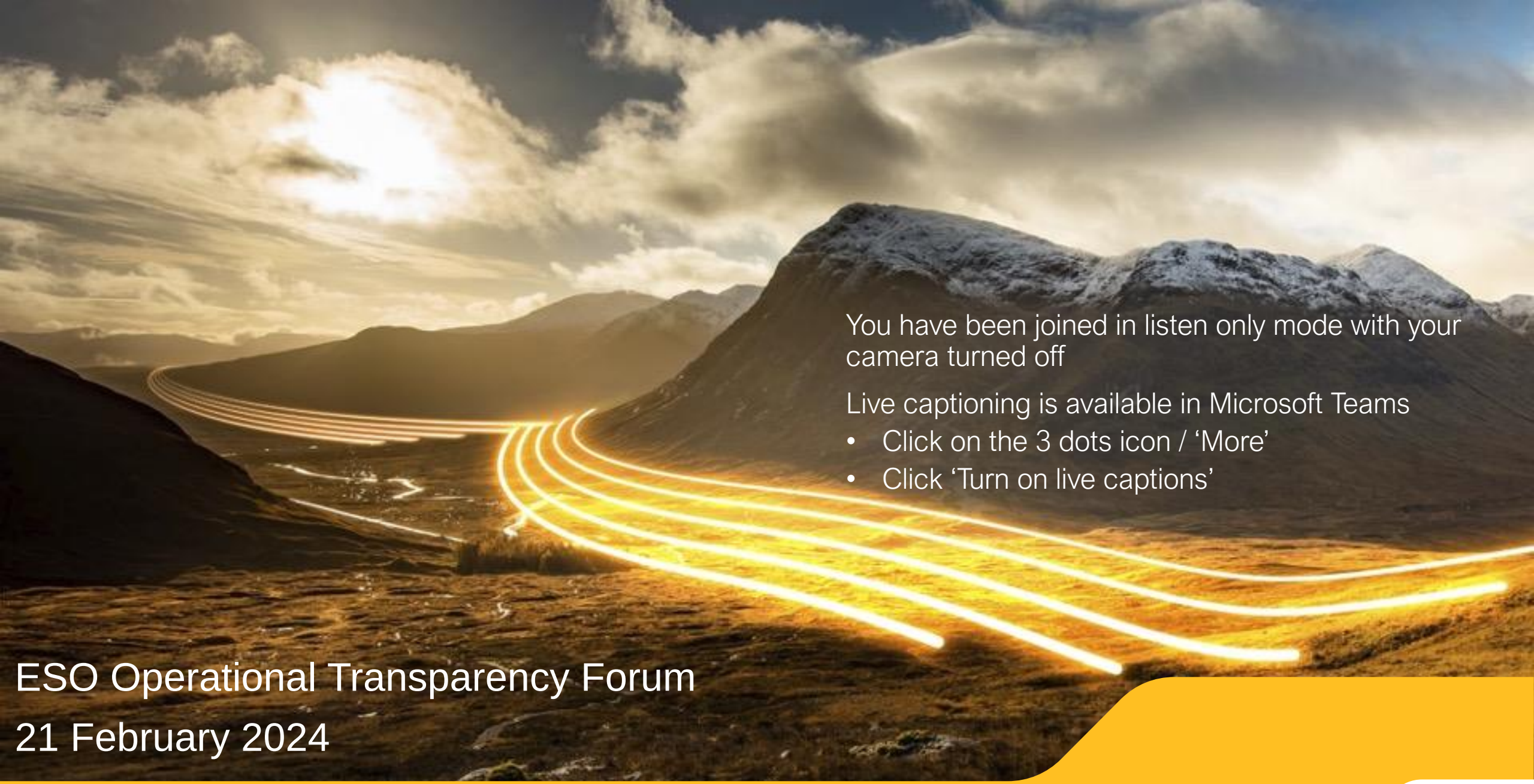


You have been joined in listen only mode with your camera turned off

Live captioning is available in Microsoft Teams

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

ESO Operational Transparency Forum

21 February 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

Managing Storm Conditions

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

Upcoming NESO Webinars

Join us in our upcoming webinars to learn more about the new responsibilities of NESO from Day 1, how these will evolve and how we can work together to deliver a net zero energy system that balances sustainability with affordability and security.

Resilience and Security	Strategic Planning	Market Development
26 February, 11:00	**1 March, 10:30**	**6 March, 10:00**
Find out how NESO is establishing a Directorate of Resilience and Emergency Management that will take a whole system perspective when considering resilience and security for GB.	Find out how NESO will deliver national and regional energy planning bringing electricity, gas and hydrogen plans together to efficiently deliver net-zero.	Find out how NESO will drive the evolution of market arrangements across the whole energy system to facilitate security of energy supply and deliver investible markets at the most equitable cost to consumers.

Sign up via the registration links on the ESO website and LinkedIn

https://www.nationalgrideso.com/what-we-do/becoming-national-energy-system-operator-neso

Implementation of Frequency Risk and Control Report (FRCR) 2023 - Reduced Minimum Inertia Policy

- From 28th February 2024 the ESO will implement **FRCR 2023 Phase 1**, i.e. operating the system at reduced minimum inertia policy at 130GVA.s.
- To avoid any unintended operability risks associated with the lower level of the minimum inertia policy, we plan to operate the system with 130GVA.s minimum inertia policy for at least 8 weeks.
- After this initial phase, we will communicate with the industry through OTF ahead of making the change for the implementation of Phase 2 which will reduce the minimum inertia policy further from 130GVA.s to 120GVA.s

If you would like to talk about the change please contact:
box.techcodes@nationalgrideso.com
07768 537317

FRCR 2023 Full Report and other Documents, please go to ESO website

Enhancing the use of storage assets in our balancing activities

Sli.do code #OTF

12 February webinar

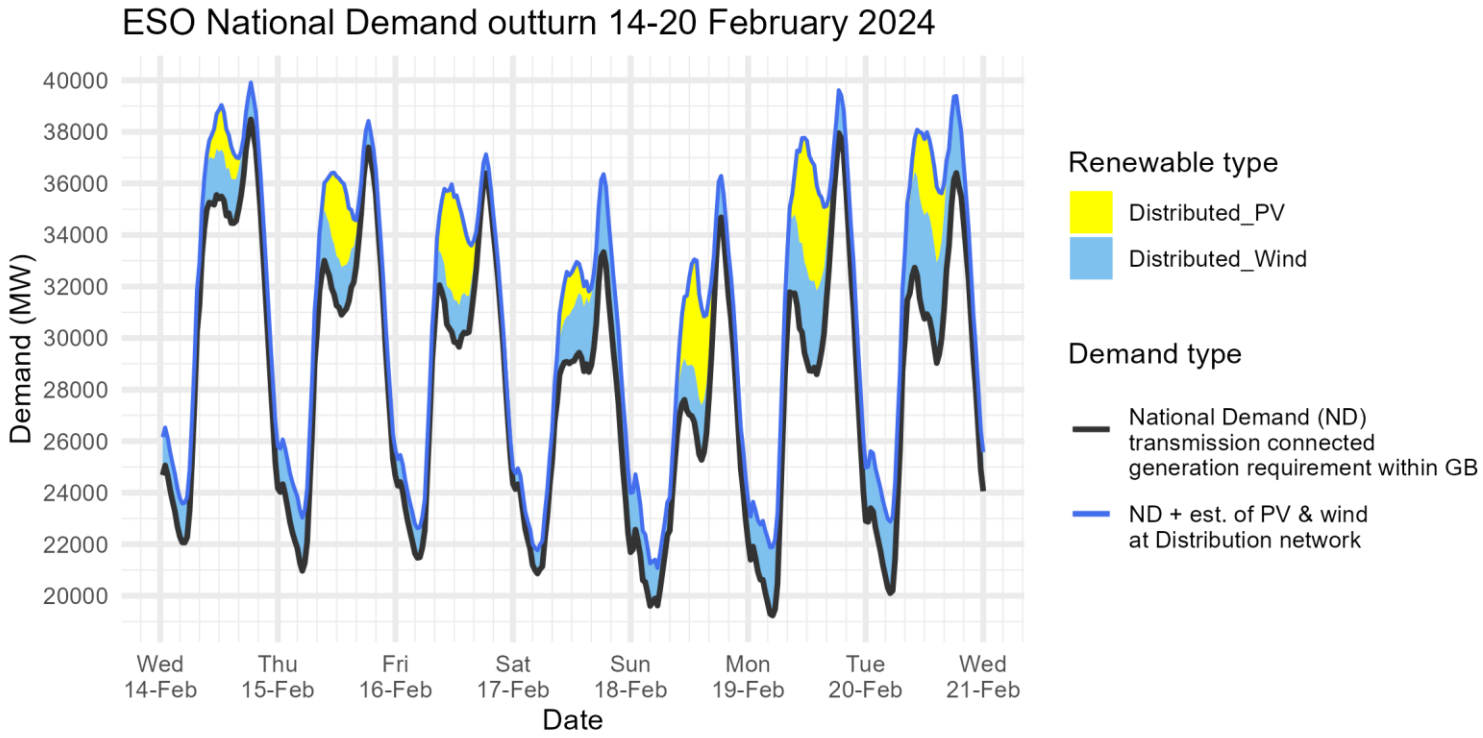
- We remain on track, 10 new activities added to the plan
- Open Balancing Platform launched on 12 December – progressively increased utilisation in our operations
- Enhancements to our Scheduling and Dispatch processes

Link to webinar recording and slides here

Proposal to change the 15-minute rule to 30 minutes – we need your feedback!

- We proposed to extend this rule to 30 minutes from 1 March 2024, ahead of the launch of Balancing Reserve
- 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), this will be monitored as per normal process. The new 30-minute rule will be in place until new energy storage parameters are in place as part of GC0166
- General feedback has been positive and supportive of the change, however, a small number of participants have expressed they would like more time to implement the change
- Therefore, new proposed date for implementation is 11 March 2024. New MEL/MIL guidance will be issued next week
- Get in touch by emailing **box.balancingprogramme@nationalgrideso.com – we want to hear from you**

Demand | Last week demand out-turn



		FORECAST (Wed 14 Feb)		OUTTURN			
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	National Demand (GW)	Triad Avoidance est. (GW)	N. Demand adjusted for TA (GW)	Dist. wind (GW)
14 Feb	Evening Peak	38.5	1.6	38.5	0.0	38.5	1.4
15 Feb	Overnight Min	21.3	1.5	21.0	n/a	n/a	2.1
15 Feb	Evening Peak	37.9	0.9	37.4	0.0	37.4	1.0
16 Feb	Overnight Min	21.2	1.4	21.5	n/a	n/a	1.1
16 Feb	Evening Peak	36.5	1.3	36.4	0.0	36.4	0.7
17 Feb	Overnight Min	21.1	0.6	20.9	n/a	n/a	0.9
17 Feb	Evening Peak	33.1	1.9	33.3	0.0	33.3	3.0
18 Feb	Overnight Min	18.6	2.0	19.6	n/a	n/a	1.6
18 Feb	Evening Peak	34.1	1.9	34.7	0.0	34.7	1.6
19 Feb	Overnight Min	20.8	1.2	19.2	n/a	n/a	2.7
19 Feb	Evening Peak	38.9	1.4	38.0	0.0	38.0	1.7
20 Feb	Overnight Min	22.0	1.4	20.1	n/a	n/a	2.8
20 Feb	Evening Peak	37.9	2.7	36.4	0.0	36.4	3.0

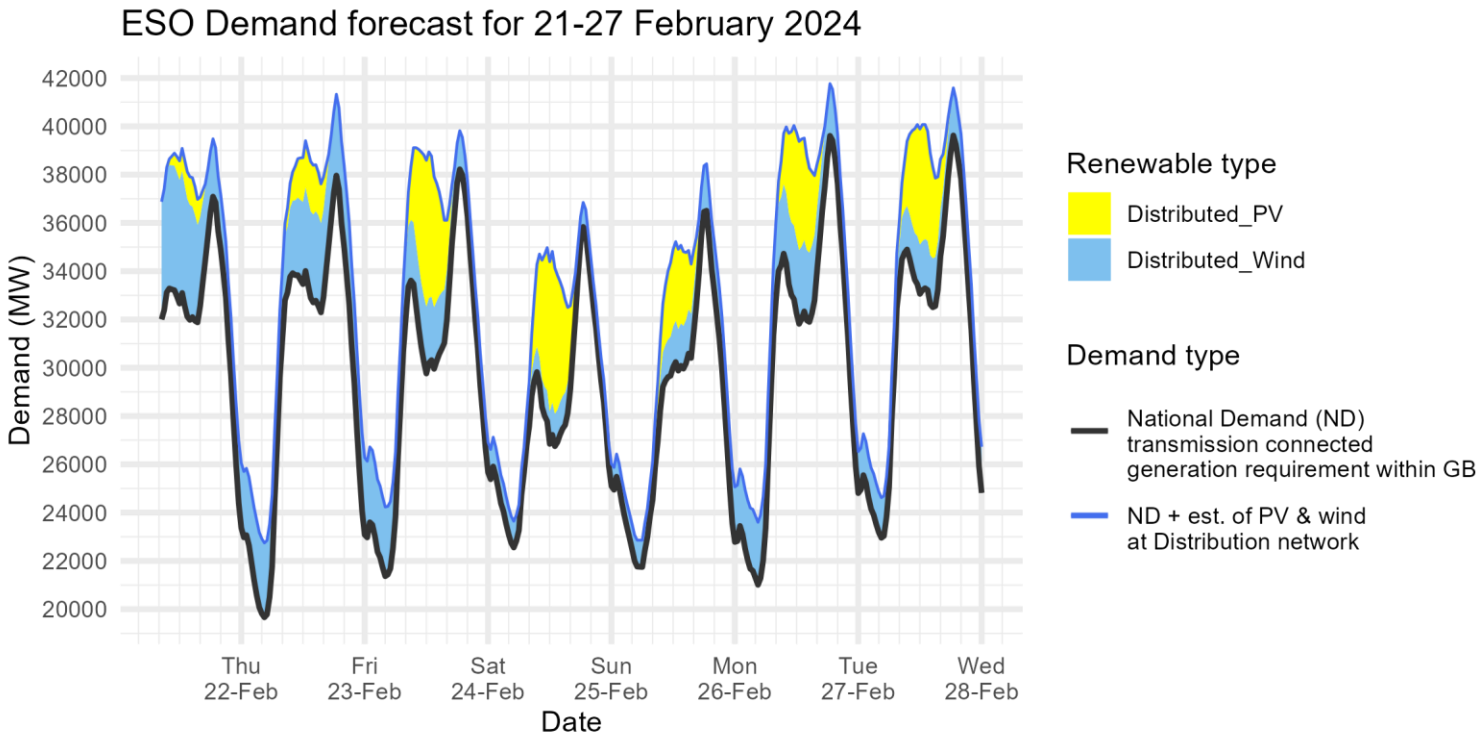
The black line (National Demand ND) is the measure of portion of total GB customer demand that is supplied by the transmission network.

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



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		FORECAST (Wed 21 Feb)	
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)
21 Feb 2024	Evening Peak	37.1	2.4
22 Feb 2024	Overnight Min	19.7	3.1
22 Feb 2024	Evening Peak	38.0	3.4
23 Feb 2024	Overnight Min	21.4	2.9
23 Feb 2024	Evening Peak	38.2	1.6
24 Feb 2024	Overnight Min	22.6	1.1
24 Feb 2024	Evening Peak	35.8	1.0
25 Feb 2024	Overnight Min	21.7	1.1
25 Feb 2024	Evening Peak	36.5	1.9
26 Feb 2024	Overnight Min	21.0	2.6
26 Feb 2024	Evening Peak	39.6	2.2
27 Feb 2024	Overnight Min	23.0	1.7
27 Feb 2024	Evening Peak	39.6	1.8

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 21st February 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	22/02/2024	39806	13830	4080	38560	15090
Fri	23/02/2024	39806	7670	4080	38820	8570
Sat	24/02/2024	41253	3770	4080	36440	8620
Sun	25/02/2024	41895	9530	4080	37110	14150
Mon	26/02/2024	43554	10310	4080	40210	13480
Tue	27/02/2024	44640	9550	4080	40220	13620
Wed	28/02/2024	44749	10230	4080	39510	15240

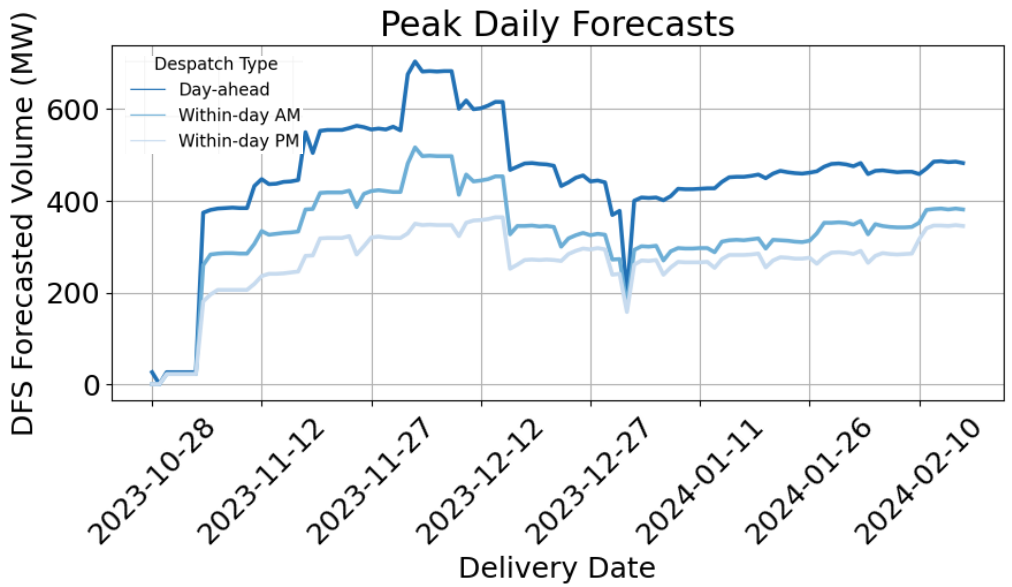
*Interconnector flow in line with the Winter Outlook Report Base Case but will ultimately flow to market price

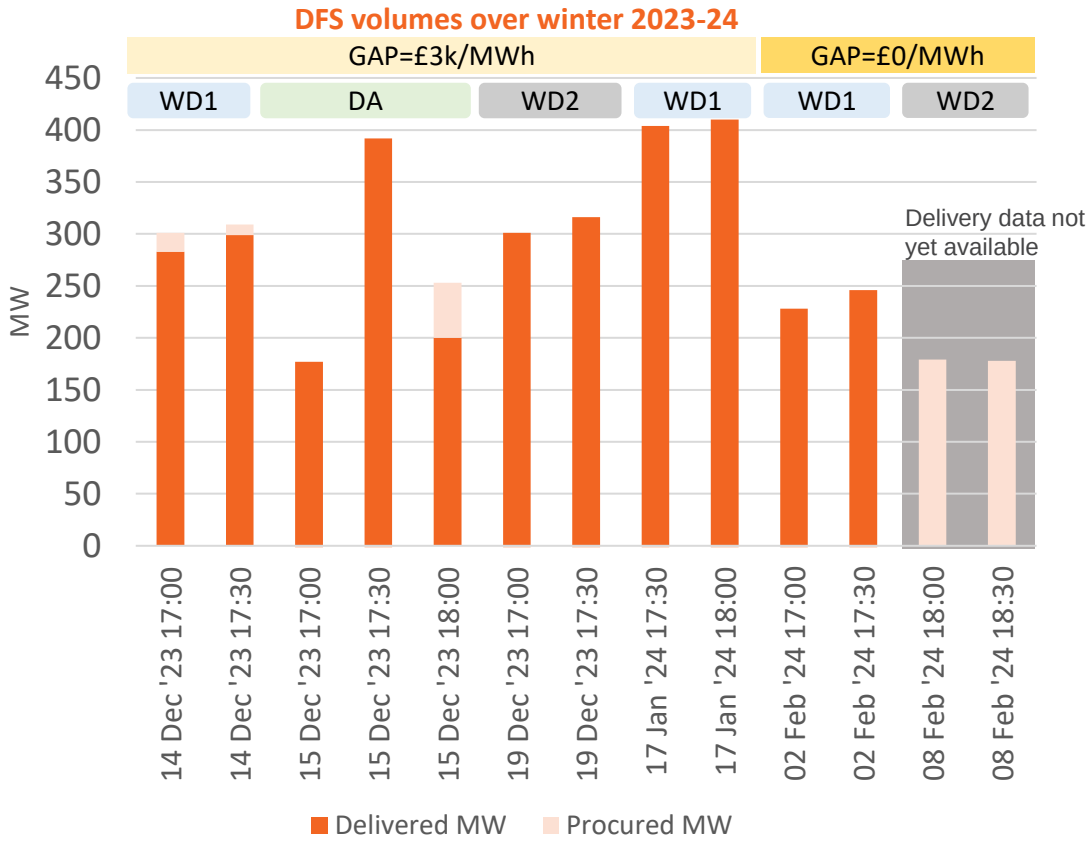
Demand Flexibility Service

Latest events:

Delivery Date: 8th February 2024; 18:00 to 19:00 h
Within day 2, GAP = 0£/MWh.

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



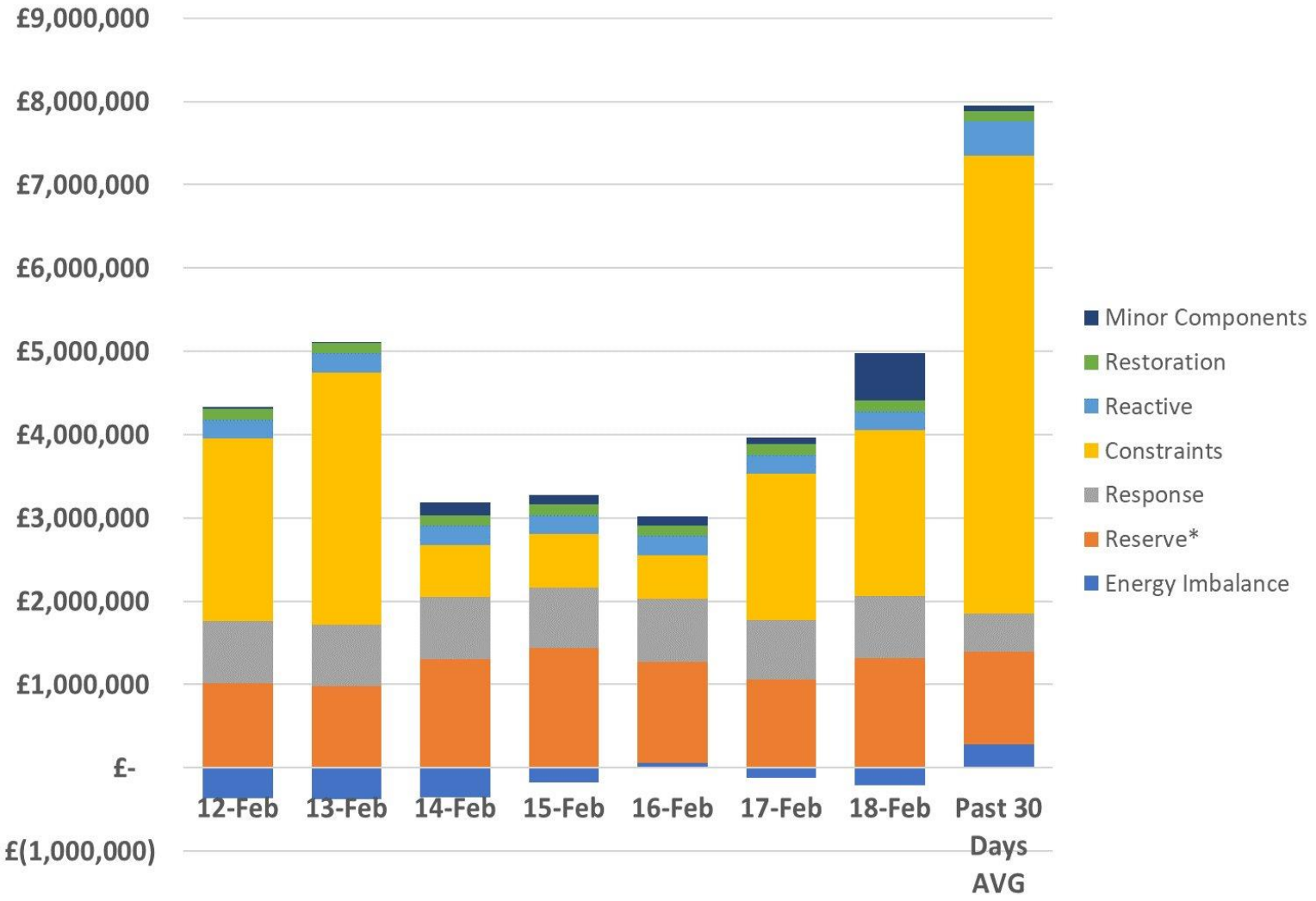


Despatch Time	Number of events		
	Live	Test (GAP £3,000/MWh)	Test (GAP £0/MWh)
Day-ahead	2	2	0
Within day 1	0	3	1
Within day 2	0	2	1
Total	**2**	**7**	**2**

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

Sli.do code #OTF

ESO Actions | Category costs breakdown for the last week



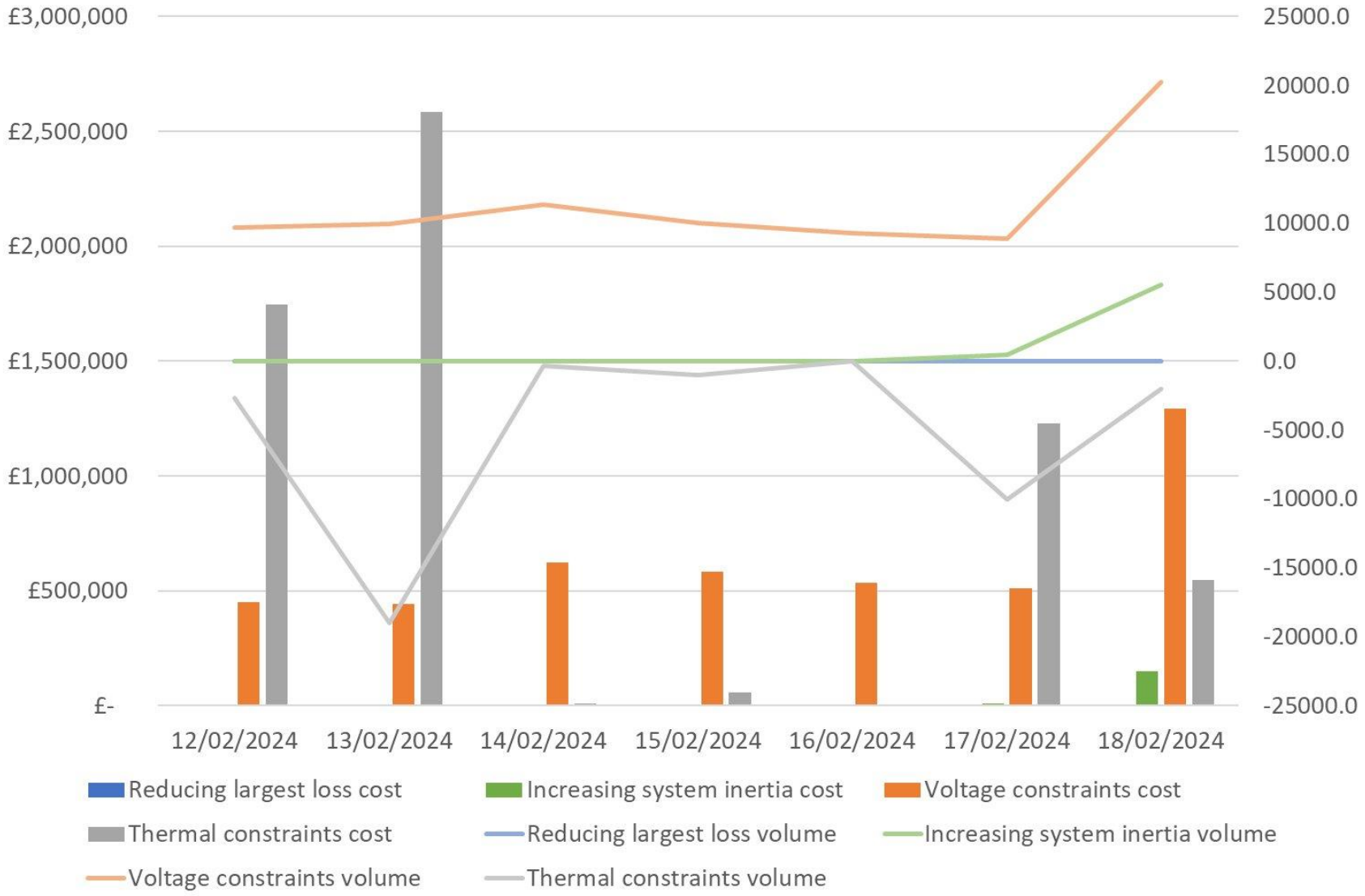
Date	Total (£m)
12/02/2024	4.0
13/02/2024	4.7
14/02/2024	2.8
15/02/2024	3.1
16/02/2024	3.0
17/02/2024	3.8
18/02/2024	4.8
Weekly Total	26.3
Previous Week	40.6

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



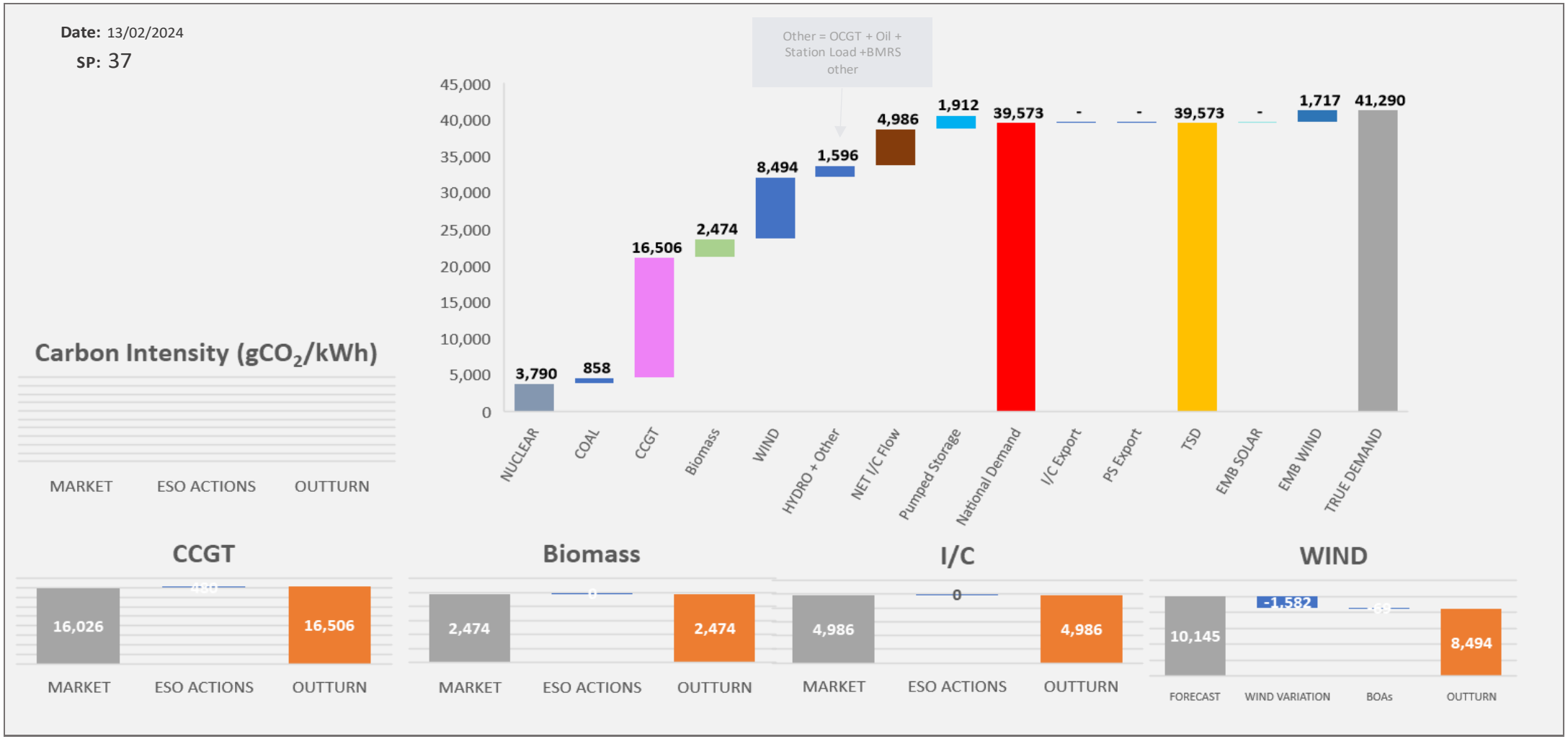
Thermal – network congestion
Actions were required to manage thermal constraints throughout the week except on the Friday, with the most significant costs on Monday, Tuesday and Saturday.

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

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

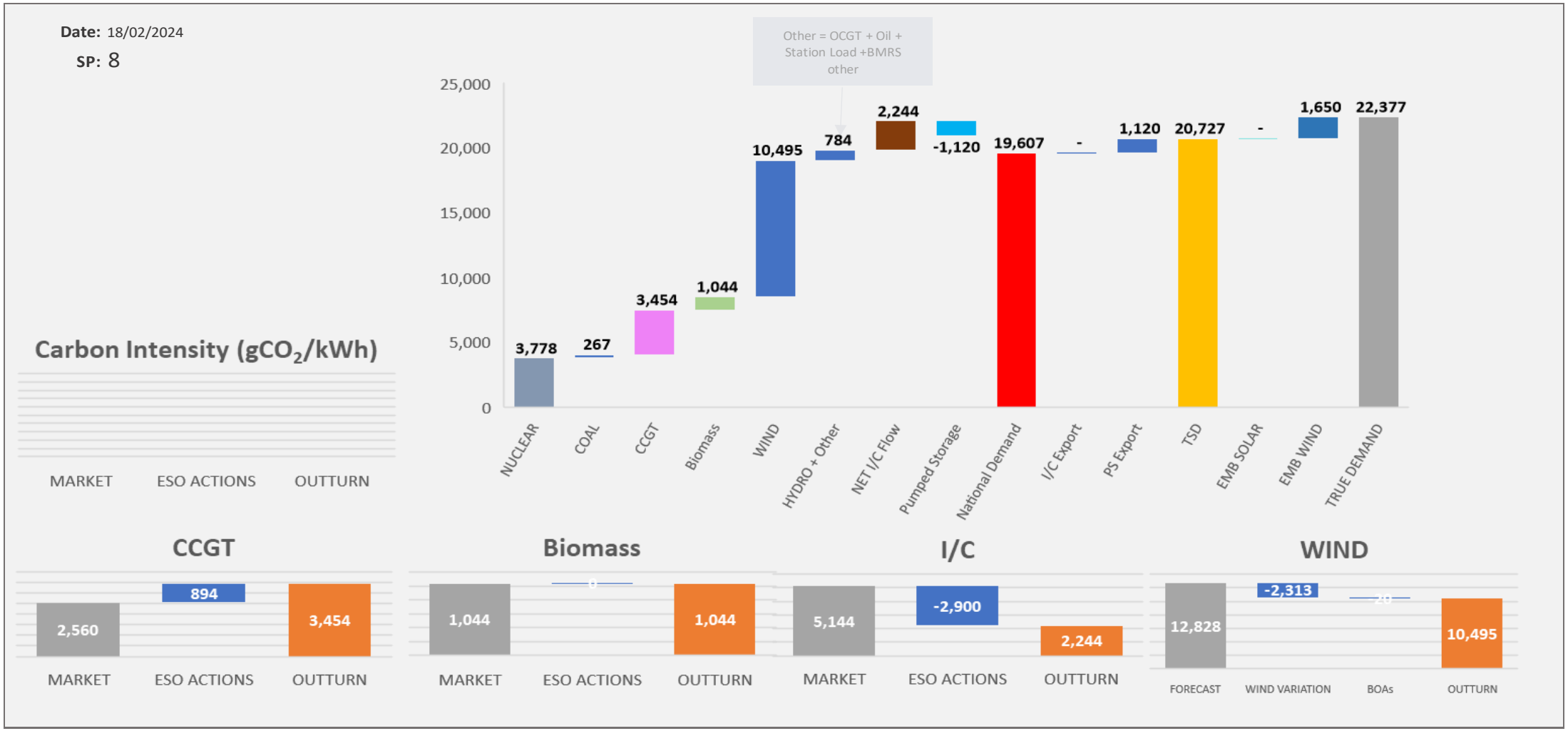
Increasing inertia
Intervention was required to manage System Inertia on Saturday and Sunday.

ESO Actions | Tuesday 13 February – Peak Demand – SP spend ~£7k



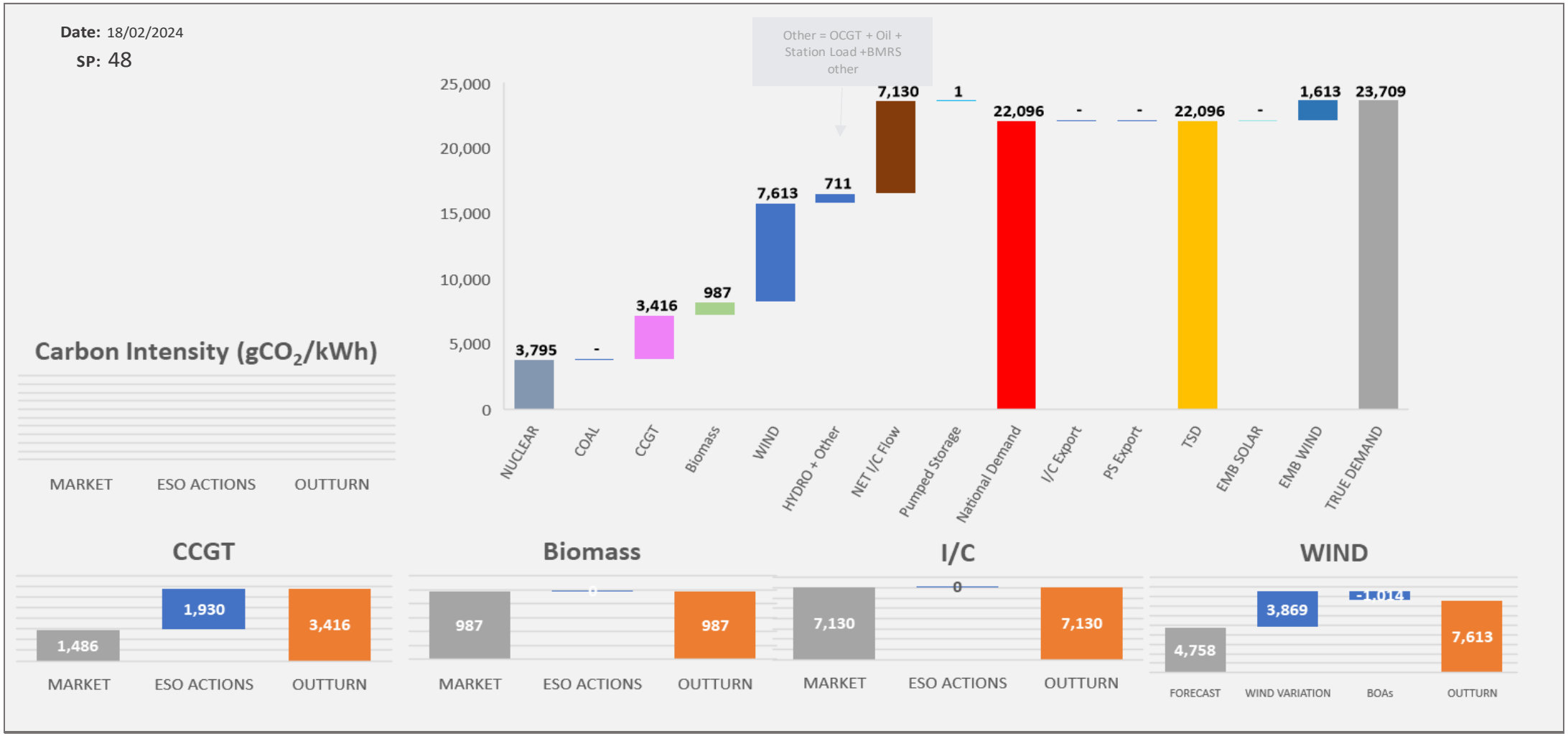
Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

ESO Actions | Sunday 18 February – Minimum Demand – SP Spend ~£130k



Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

ESO Actions | Sunday 18 February – Highest SP Spend ~£272k



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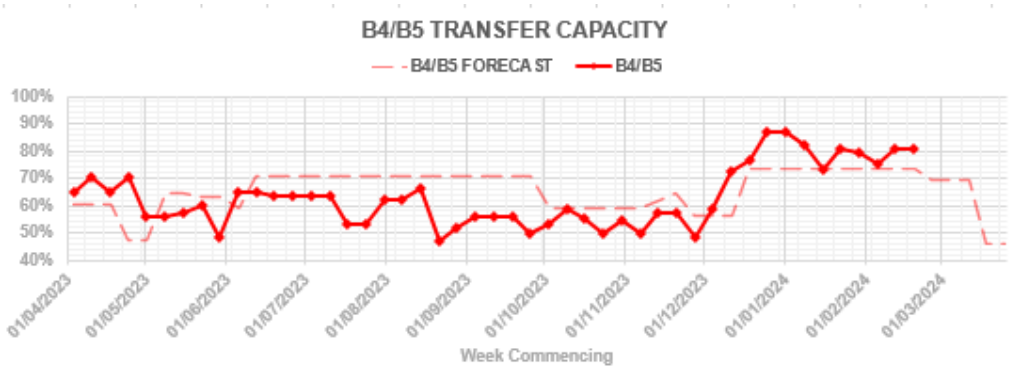
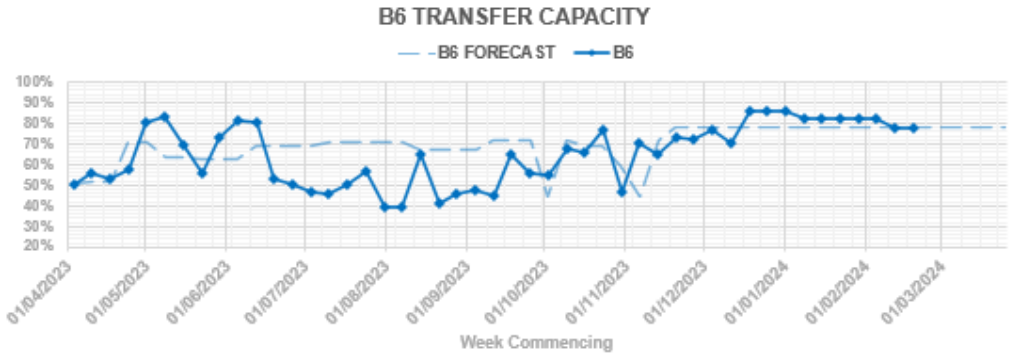
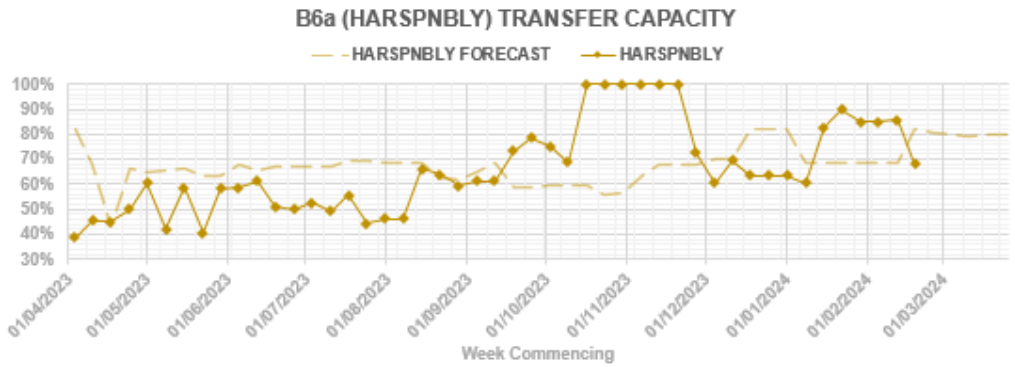
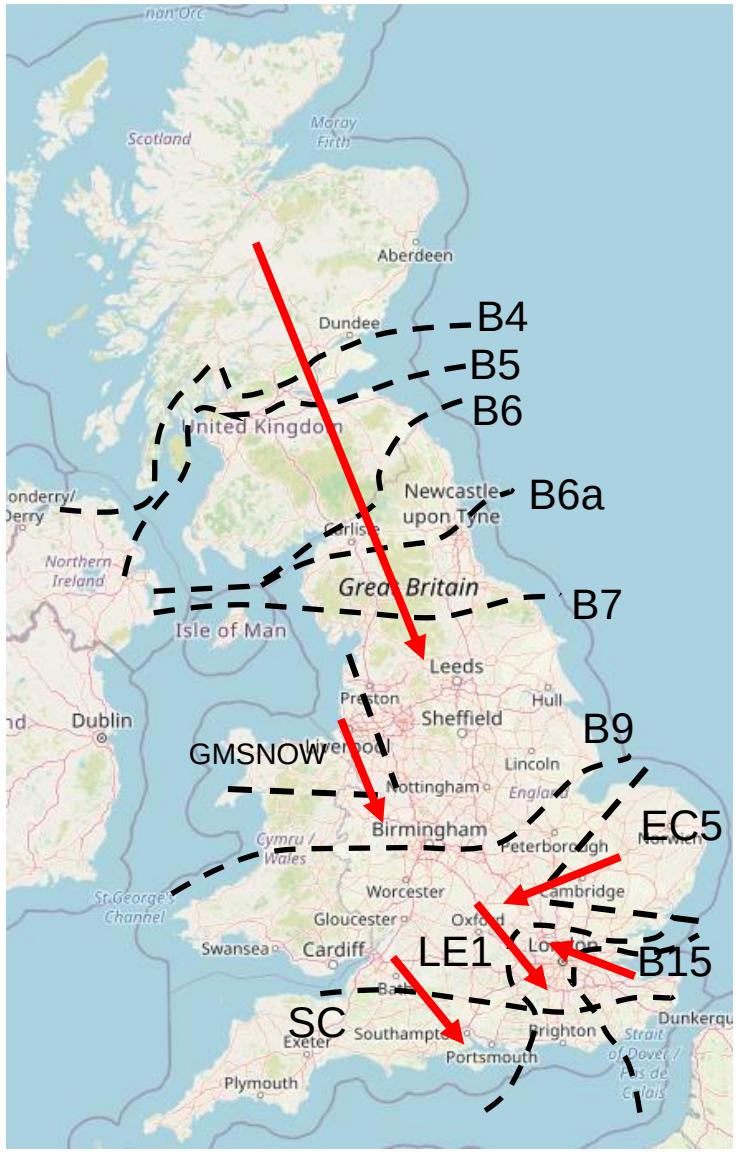
Transparency | Network Congestion





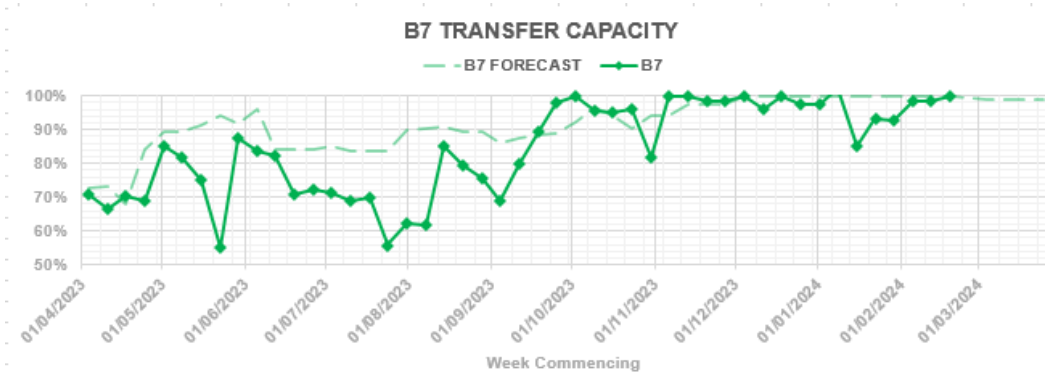


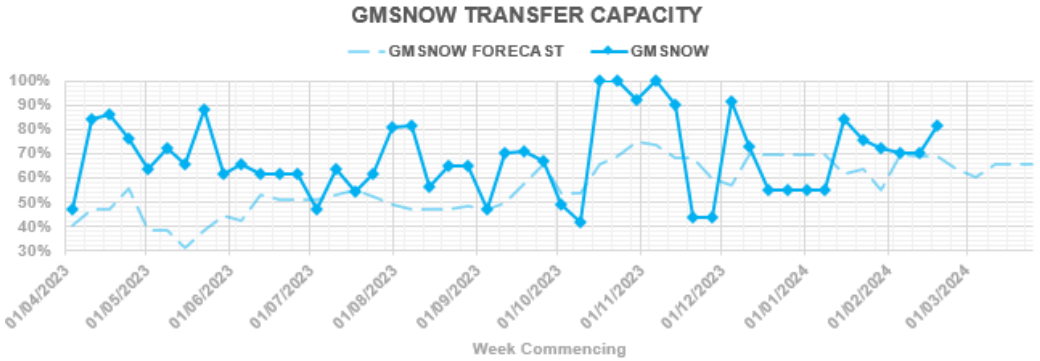
Boundary	Max. Capacity (MW)	Current Capacity (%)
B4/B5	3400	81%
B6	6800	78%
B6a	8000	68%
B7	8325	100%
GMSNOW	4700	82%
EC5	5000	92%
LE1	8500	78%
B15	7500	82%
SC	7300	100%

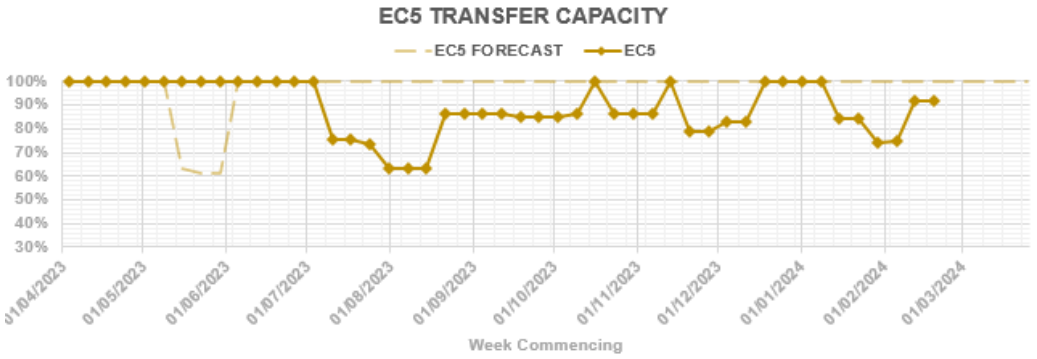


Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
https://data.nationalgrideso.com/data-groups/constraint-management

Transparency | Network Congestion







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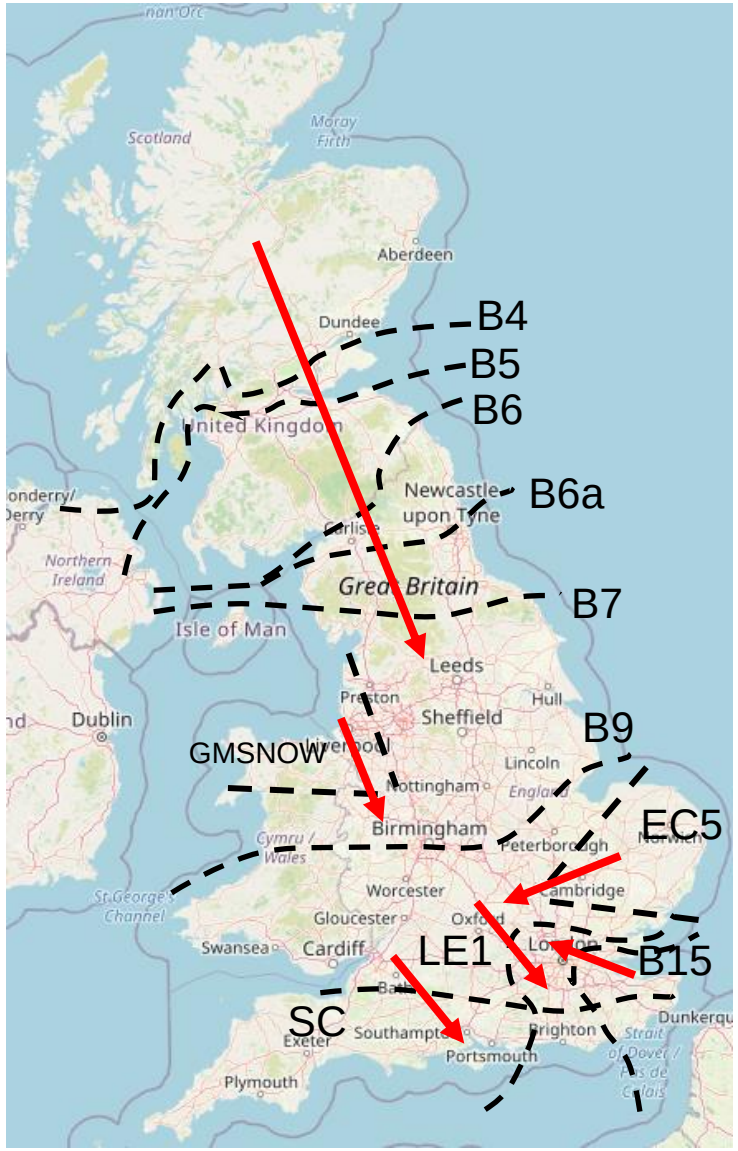

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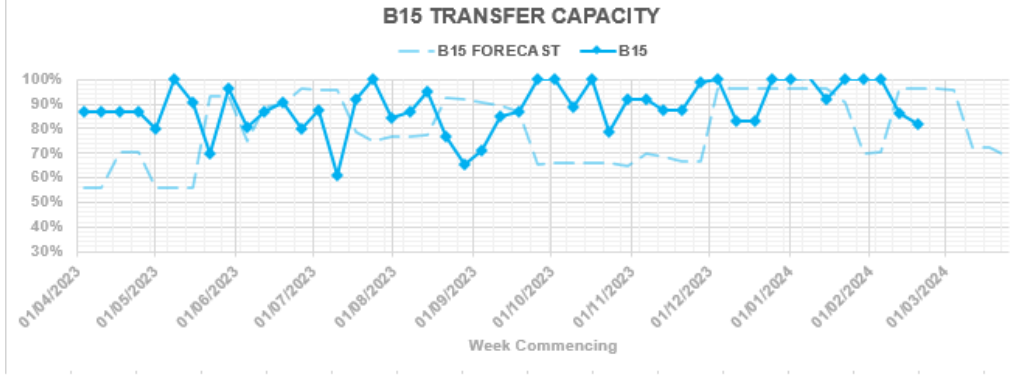
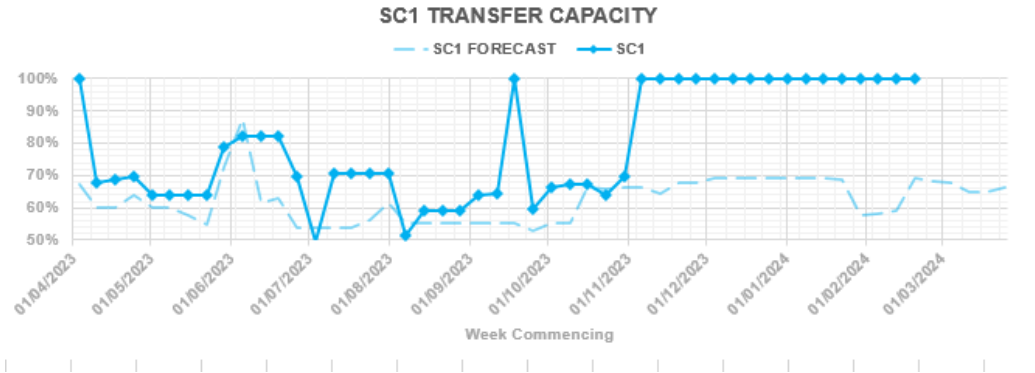
Sli.do code #OTF

Transparency | Network Congestion





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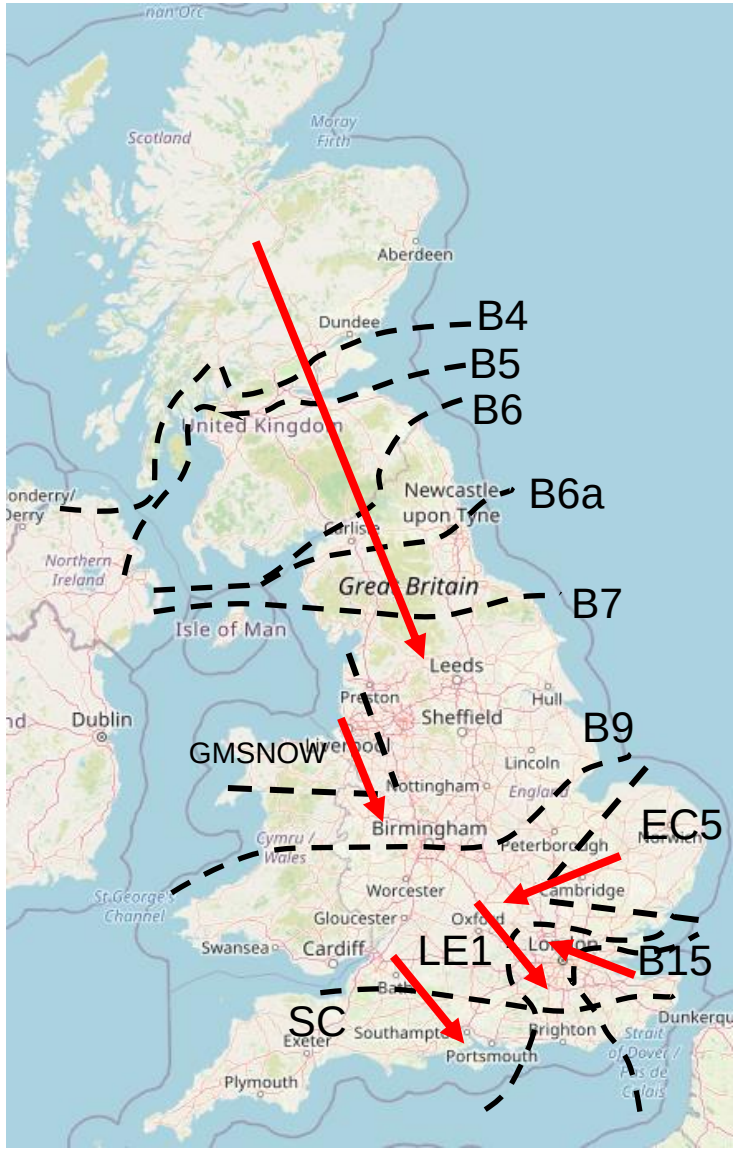

Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
https://data.nationalgrideso.com/data-groups/constraint-management

Updated answer to question published 7 February 2024

Q: There have been multiple instances recently of bids and offer acceptances for priced out batteries. The worst of this recently was Sunday 4th Feb in SP41, where 2 units saw a combined 12.5MWh of offer volume at £10,000/MWh, costing NGESO (and the consumer?) £125,000. No manifest error has been published.

Answer published 7 February: Regarding that "No manifest error has been published" – ESO can confirm the manifest error was published through the BMRS email alerts on Sunday evening in accordance with BSCP 14: Processing of manifest error claims.

The BMRS alerts can be found on the Elexon website at: ELEXON Portal; BMRS system warnings or there is a subscription option to receive messages by email.

Links from circular:

disputes@elexon.co.uk

subscriptions page

Answer update: Elexon Circular (received by email)

20 February 2024

Manifest Error Claim ME045 and ME046 – Settlement Day 4 February 2024, Settlement Period 41

In accordance with Section Q7 of the Balancing & Settlement Code (BSC), the National Electricity Transmission System Operator (NETSO) has raised two Manifest Error claims. The claims relate to Settlement Period 41 of Settlement 4 February 2024.

On 20 February 2024 the Trading Disputes Committee (TDC) heard the claims and determined, in accordance with Q 7.1.1 of the BSC, that Manifest Errors had occurred.

The TDC agreed that the Bid Price and Offer Prices associated with the Error Bid-Offer Pairs would be replaced in accordance with BSC Section Q 7.5. Amendments will be made in time for the Initial Settlement Run (SF) scheduled for 23 February 2024.

If you have any queries regarding the above information please contact the Trading Disputes team: disputes@elexon.co.uk.

Where can I find previous Circulars?

All current and previous circulars can be found on our subscriptions page.

Previously asked questions

Q: If ESO is bidding off so much wind/energy at -ve prices(-£60/MWh+) why don't prices go -ve in that HH? Is it cos bids (-ve prices) R flagged System (don't feed into cashout)while counter actions/offers in south tagged energy which do thus actually raise cahsout price as c.2x the price at the time?

A: The Cashout/system price is determined by transactions without the system flag. As the vast majority of wind actions at negative prices are done for constraint management purposes these are system flagged and do not influence cashout price.

Q: Does more frequency response clearing allow for lower inertia levels? If so, is the ESO considering adjusting the inertia requirement in line with frequency response clearing?

A: Response requirements are calculated based on inertia (alongside other variables). FRCR policy looks into the inertia level we will hold. Any updates on our inertia policy will be communicated through OTF.

Previously asked questions

Q: On Feb11th 12:00-14:00 GMT, we saw a suspiciously flat frequency, and very limited balancing activations (mainly batteries, no CCGTs). Was the published data correct for that period?

Flat frequency: please let us know where you are viewing the frequency data so that we can look into this. Email to : box.NC.Customer@nationalgrideso.com

Balancing actions: The Open Balancing Platform (OBP) provides the capability for the ESO Control Room to dispatch a combination of smaller capapcity units to meet the balancing requirements where this is overall more economic than using fewer larger assets. This is reflected in the 440 Bid Offer Acceptance (BOA) in this time period using smaller capacity units including batteries.

Details of the BOA for this period are published by Elexon at:

About Us | BMRS (bmreports.com) and

Home | Insights Solution (elexon.co.uk)

Previously asked questions

Q: When exactly is the switch from 15-minute rule to 30-minute rule going to take place? Is there any written documentation of the new rule and the timing of the change?

A: Our new proposed date is 11 March, we will be seeking feedback from industry until the end of this week (23 February). New updated MEL/MIL guidance will be issued next week, to ensure we have captured and considered this feedback appropriately.

Q: Re: 30-minute rule. Are the slides from the webinar available anywhere? We have looked up detailed information about when the rule change will take place (you can appreciate how a date is too vague) but couldn't find anything. Thank you

A: The slides and recording from the webinar can be found here:

Enhancing the use of storage assets in our balancing activities | ESO (nationalgrideso.com)

Detailed information on the implementation of the 30-min change will be issued next week alongside updated MEL/MIL guidance.

Advance questions

Q: Would it be possible to learn more about this announcement in the press 12 Feb.

https://www.current-news.co.uk/eso-moves-to-day-ahead-procurement-for-energy-reserves-cutting-consumer-costs-by-639-million/

I was particularly interested to understand where how this change has come about, have new processes been required and will it be delivered by procuring more flexibility services, could it bring down the cost of DFS too as well as more mainstream reserve assets?

A: We have lots of information on our website about the new service including the technical requirements and information about how you can register an asset to participate in the service.

Balancing Reserve | ESO (nationalgrideso.com)

You mentioned in your query that you were interested in the potential impact of the service and why the ESO wants to introduce it. I would recommend taking a look at the Cost Benefit Analysis we commissioned from energy consultants LCP Delta. It shows some modelling including where our estimation of the potential consumer savings comes from.

Balancing Reserve CBA Refresh (nationalgrideso.com)

Advance questions

Q: If BMU's accepted for balancing reserve have offers / bids (potentially significantly) better priced than BM market alternatives, will they be skipped as they are designated as holding reserve and ring fenced for that service? i.e. Will potential loss of BM income need to be included as an opportunity cost when calculating what availability price to offer for Balancing Reserve?

A: Balancing Reserve (BR) is designed for pre-fault usage in solving energy imbalances or meeting system requirements. Therefore, unlike STOR, there is no designated “flag” or “hold” on the contracted BR BMUs to avoid dispatching them.

Balancing Reserve units will be dispatched in merit order provided they can meet the requirements at the time (speed of dispatch, location, access to dispatch tools etc.).

We would not expect units to factor in potential loss of BM income into their availability prices. BR units should expect to be dispatched at least as much as if they were not contracted and just participating in the BM as normal.

Q: You mentioned in last week's OTF that you're able to go below 49.5Hz for up to 60s but that you aren't able to do this for high frequencies. Would you be able to explain why there's this difference and why you aren't able to go above 50.5Hz for up to 60s? Thanks very much

A: Current SQSS/FRCR policy states the frequency can temporarily go below 49.5Hz but ESO is obligated to return frequency within 49.5Hz under 60s. The reason why the low-frequency and high-frequency limits are not symmetrical is that the size of the largest generation loss is typically higher than the largest demand loss. Also, historically, it has been more difficult to contain frequency decreases compared to frequency increases. However, with the introduction of fast frequency response services such as Dynamic Containment, the frequency dropping below 49.5Hz is rare in the current system.

Advance questions

Q: 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

Outstanding questions

Q: RE OfGem's recent announcement of an investigation in to wind farms 'overstating' their FPN. Is NG's view of network constraints based on gen submitted FPNs which .: feed into INDGEN/Zonal INDGEN or does NG substitute in its own forecasts for the Wind BMUs? If not the latter, why not?

Q: EAC is far from optimizing market welfare. It can't distinguish between BMU/non-BMU, and clearing 1 MW of one vs another at the same price can be much cheaper for the ESO due to ABSVD rules. This is currently favoring non-BMUs and adds up to customers' bills. What's blocking harmonizing ABSVD rules?

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