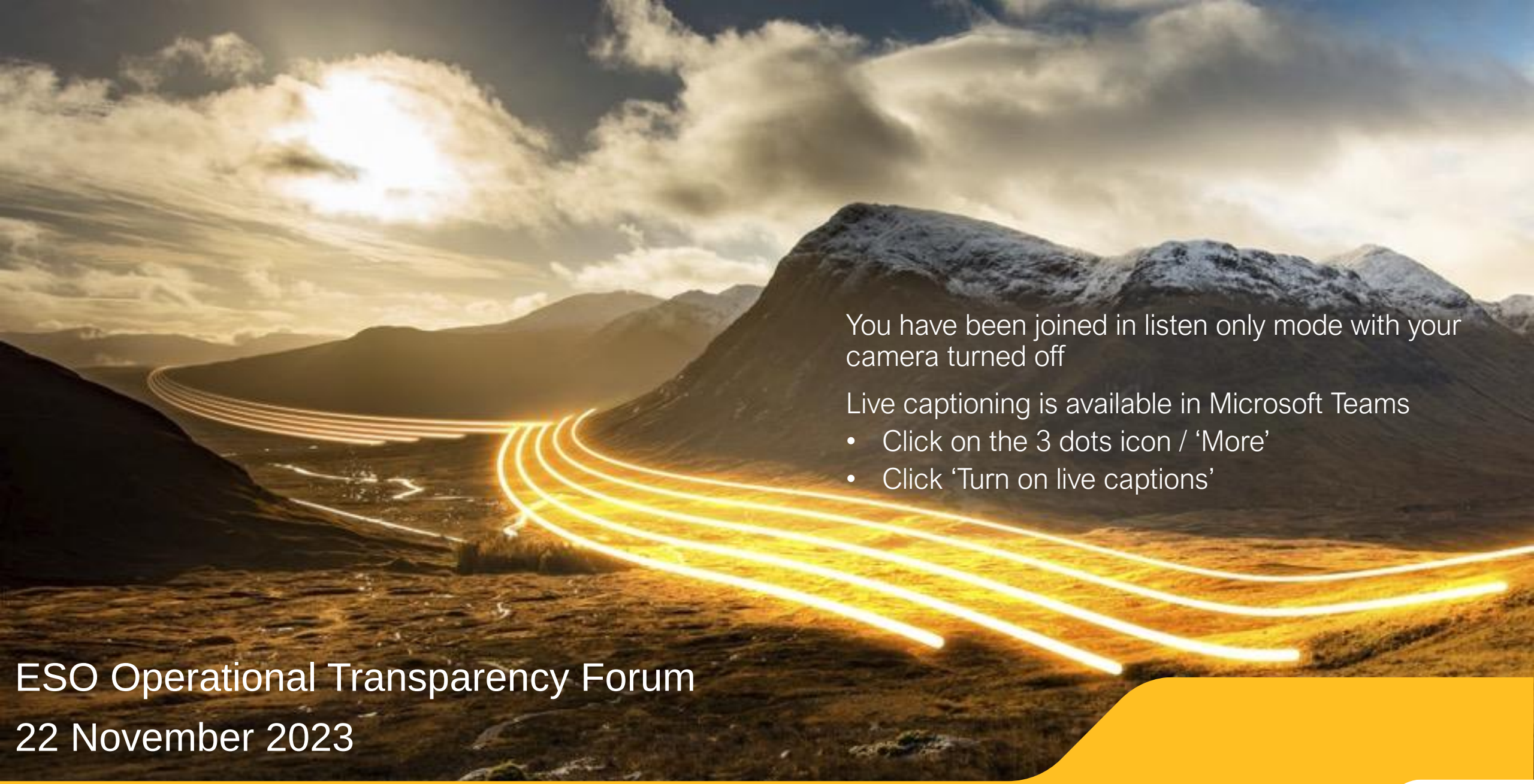

You have been joined in listen only mode with your camera turned off

Live captioning is available in Microsoft Teams

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

ESO Operational Transparency Forum

22 November 2023

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

Future deep dive / focus topics

Today

Future

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

You can ask questions in advance (before 12:00 on Monday) at: https://forms.office.com/r/k0AEfKnai3

ESO has launched an RFI for industry feedback on the creation of an Interconnector Framework, open until 7th December

Activity 2C (Ref 270 Role in Europe) within BP2 (Business Plan 2) seeks to create an Interconnector Framework. The aim of this being to not only ensure administration of retained European legislation, but to enable consistency for interconnectors operating in GB markets and aid transparency of the ways in which the interconnectors operate and work with the ESO.

We are keen to work with industry on the creation of an Interconnector Framework and welcome industry to respond to our first RFI.

The RFI has been shared and uploaded to the ESO ENC website.

The RFI has been extended for responses until the **7th December 2023.**

Request for Input Document

Proforma

To remain up to date with comms and updates regarding this you can sign up to our JESG newsletter here.

Enhancing Energy Storage in the Balancing Mechanism – follow up webinar

On 16 October, we welcomed over 75 stakeholders from across the energy industry to our 'Enhancing Energy Storage in the Balancing Mechanism' event where we outlined our plan to enhance the use of storage assets in our balancing activities and the timelines to achieve this.

A key focus of the event was to explore, in strong collaboration with industry, how to co-create and develop the capabilities and future market design solutions that will enable efficient dispatch of all assets in the Balancing Mechanism, in line with our net-zero ambitions.

To view the full timeline of or balancing activities, and view the event slides and Q&A, visit:

Enhancing Energy Storage in the Balancing Mechanism | ESO (nationalgrideso.com)

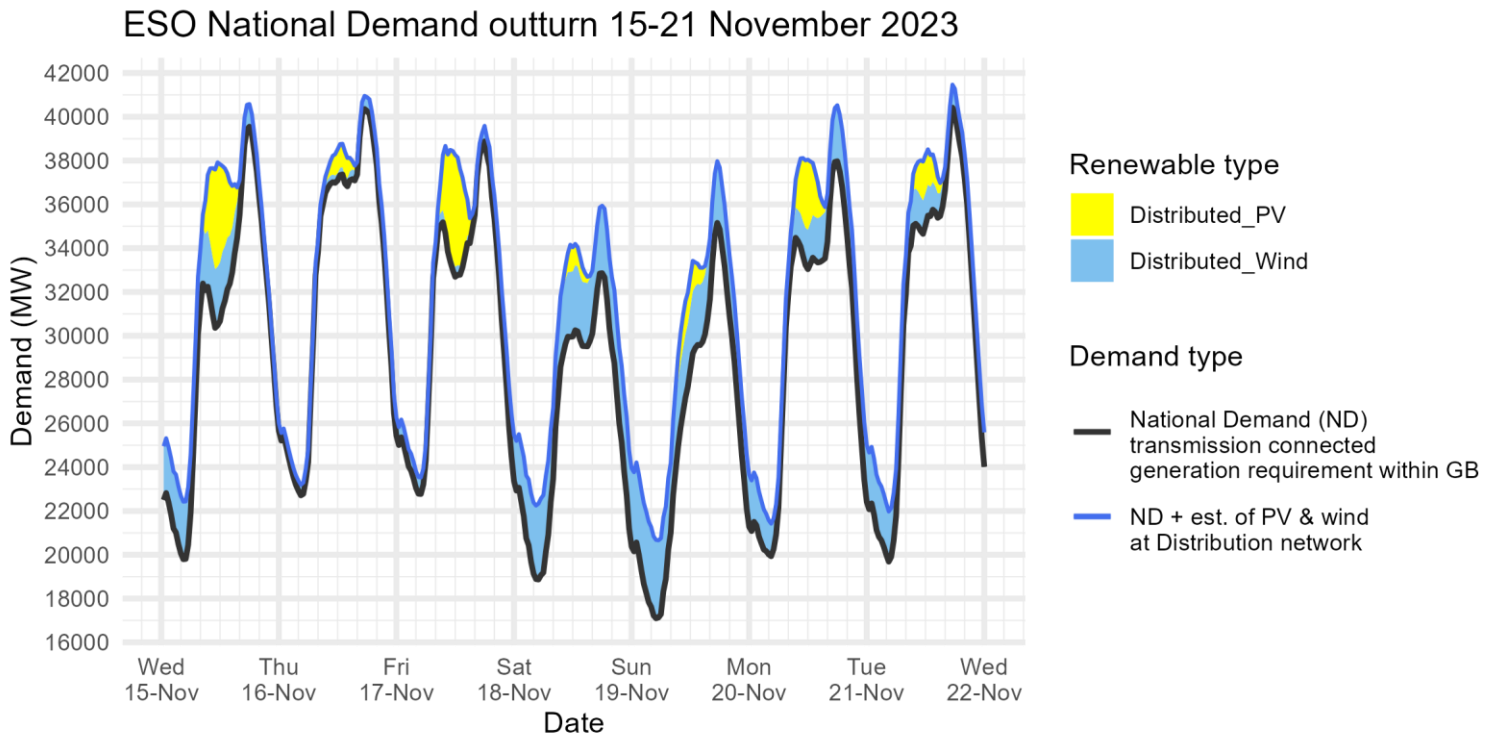
Follow up webinar – 14 December 2023

At the October event, we committed to sharing with you the outputs of the independent LCP Delta analysis, as well as a progress update on our plans.

The webinar will be held on the 14 December, 10.00 – 11.30am. Please register your attendance at the below registration form and the calendar invite will be sent to you shortly. Further details regarding the agenda will be shared in due course.

Registration form - Follow-up Webinar (office.com)

Demand | Last week demand out-turn



		FORECAST (Wed 15 Nov)		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)
15 Nov	Evening Peak	39.2	1.2	39.5	0.0	39.5	1.0
16 Nov	Overnight Min	22.3	0.7	22.7	n/a	n/a	0.5
16 Nov	Evening Peak	40.4	0.9	40.4	0.0	40.4	0.6
17 Nov	Overnight Min	22.8	0.6	22.8	n/a	n/a	0.8
17 Nov	Evening Peak	40.2	0.5	38.9	0.0	38.9	0.7
18 Nov	Overnight Min	18.8	3.3	18.9	n/a	n/a	3.5
18 Nov	Evening Peak	33.7	2.9	32.9	0.0	32.9	3.1
19 Nov	Overnight Min	17.3	3.0	17.1	n/a	n/a	3.6
19 Nov	Evening Peak	34.8	2.4	35.2	0.0	35.2	2.8
20 Nov	Overnight Min	18.6	2.7	19.9	n/a	n/a	1.5
20 Nov	Evening Peak	38.6	2.7	38.0	0.0	38.0	2.6
21 Nov	Overnight Min	20.9	1.9	19.7	n/a	n/a	2.3
21 Nov	Evening Peak	40.1	1.7	40.4	0.0	40.4	1.0

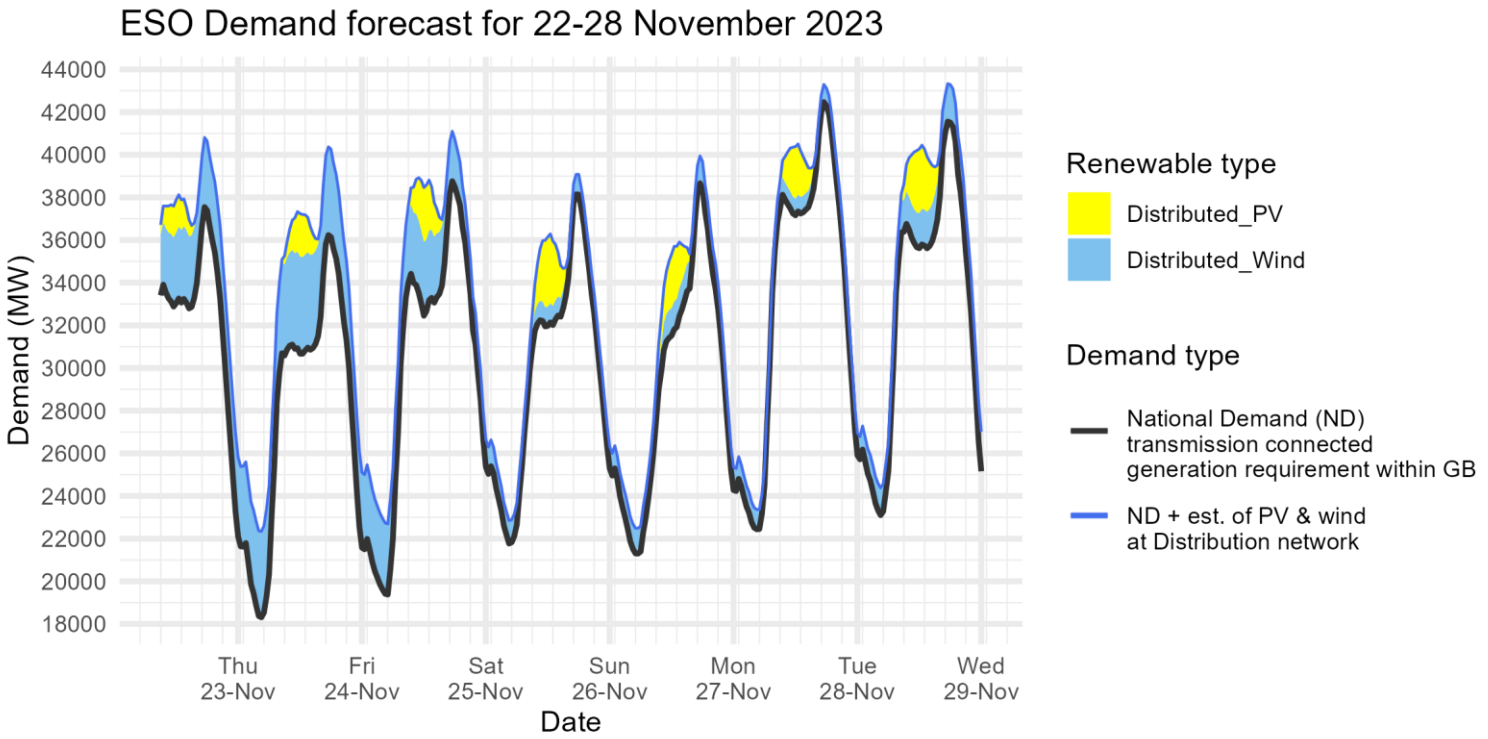
The black line (National Demand ND) is the measure of portion of total GB customer demand that is supplied by the transmission network.

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



		FORECAST (Wed 22 Nov)	
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)
22 Nov 2023	Evening Peak	37.5	3.3
23 Nov 2023	Overnight Min	18.3	4.0
23 Nov 2023	Evening Peak	36.2	4.1
24 Nov 2023	Overnight Min	19.4	3.3
24 Nov 2023	Evening Peak	38.8	2.3
25 Nov 2023	Overnight Min	21.8	1.1
25 Nov 2023	Evening Peak	38.1	0.9
26 Nov 2023	Overnight Min	21.3	1.2
26 Nov 2023	Evening Peak	38.7	1.3
27 Nov 2023	Overnight Min	22.4	0.9
27 Nov 2023	Evening Peak	42.5	0.8
28 Nov 2023	Overnight Min	23.1	1.3
28 Nov 2023	Evening Peak	41.6	1.8

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

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 22 November 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.

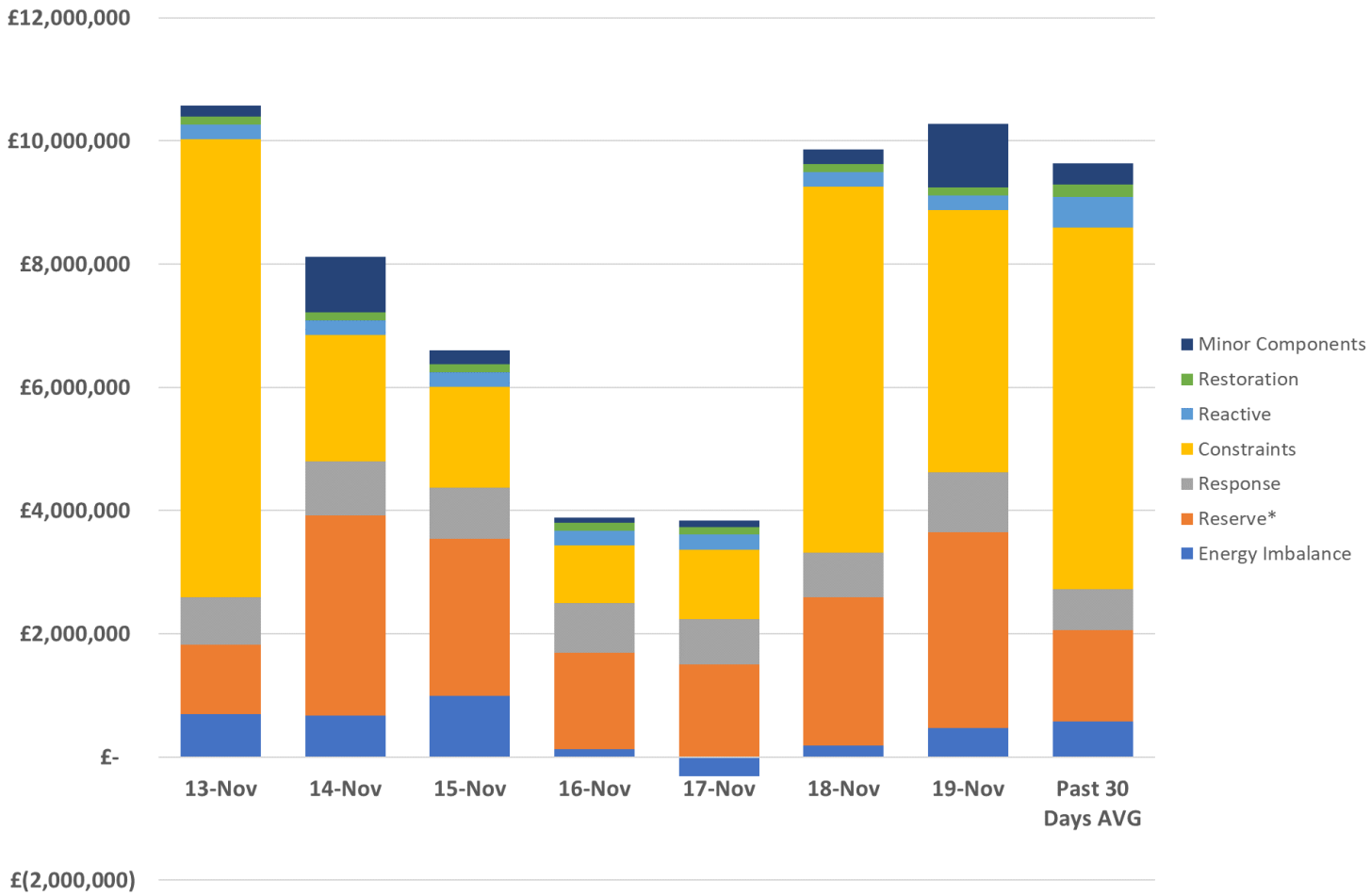
For lower (and potentially negative) surplus values, then this indicates operational margins could be tight and that there is a higher likelihood of the ESO needing to use its tools, such as issuing margins notices. We expect there to be sufficient supply available to respond to these signals to meet 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	23/11/2023	40166	18120	3110	36880	18320
Fri	24/11/2023	42394	12440	3110	39110	14290
Sat	25/11/2023	41733	6660	3370	38730	8830
Sun	26/11/2023	42590	7120	3370	39470	9400
Mon	27/11/2023	43349	3840	3370	41840	4530
Tue	28/11/2023	43275	9810	3370	41530	10630
Wed	29/11/2023	44023	11460	3370	42460	11930

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

ESO Actions | Category costs breakdown for the last week



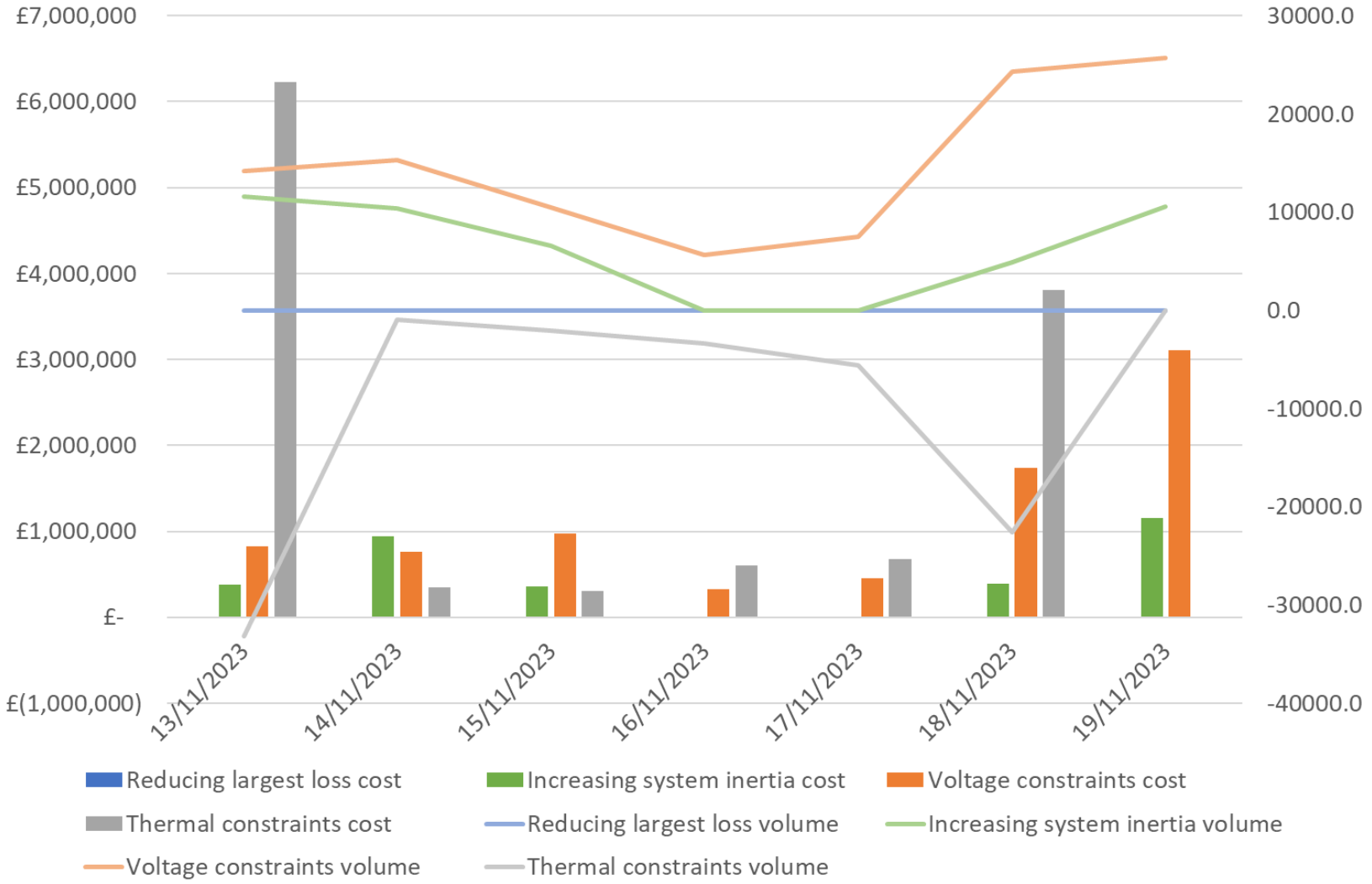
Date	Total (£m)
13/11/2023	10.6
14/11/2023	8.1
15/11/2023	6.6
16/11/2023	3.9
17/11/2023	3.5
18/11/2023	9.9
19/11/2023	10.3
Weekly Total	52.9
Previous Week	43.7

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



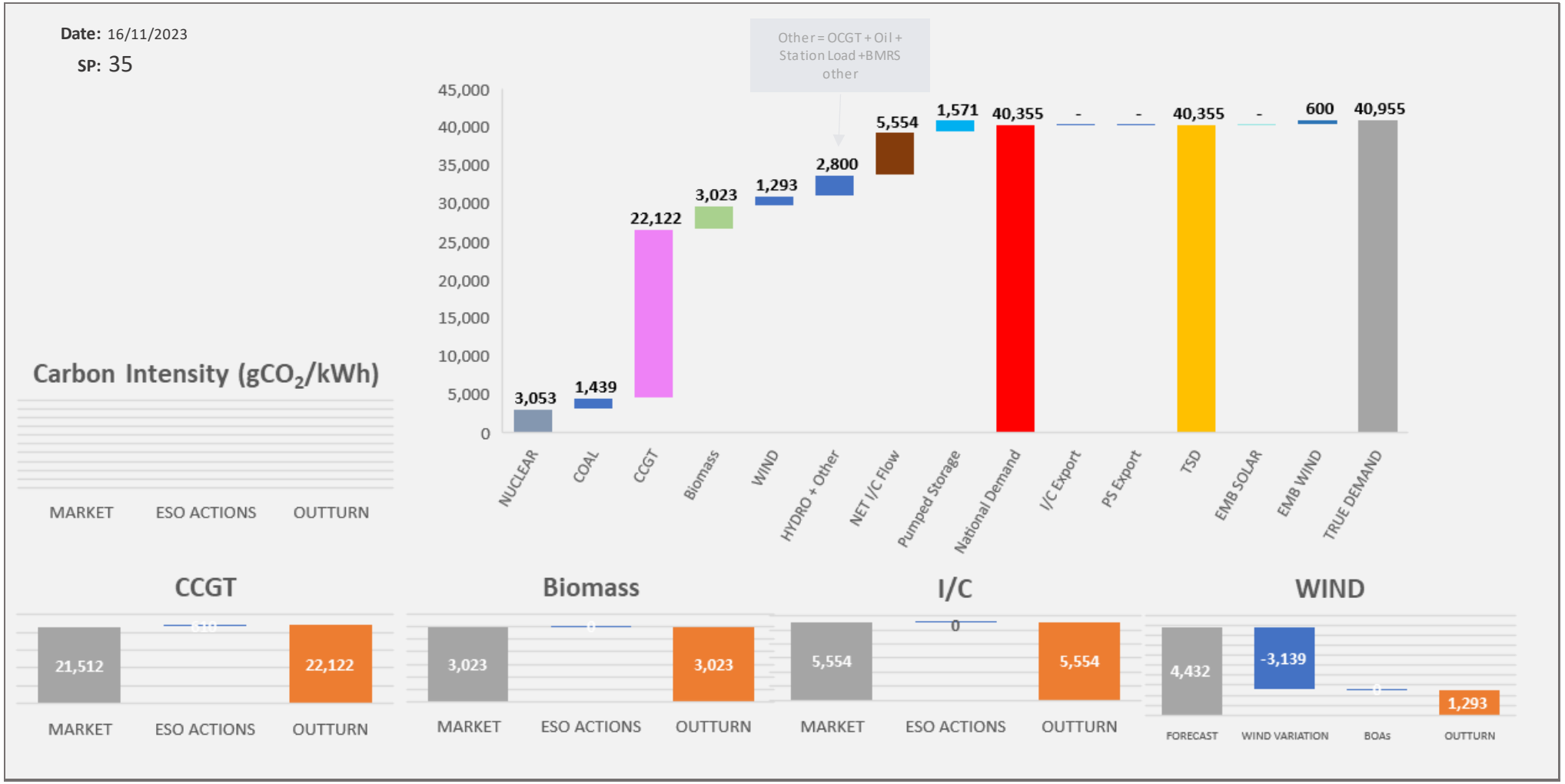
Thermal – network congestion
Actions were required to manage thermal constraints from Monday to Saturday with the most significant cost on Monday.

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

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

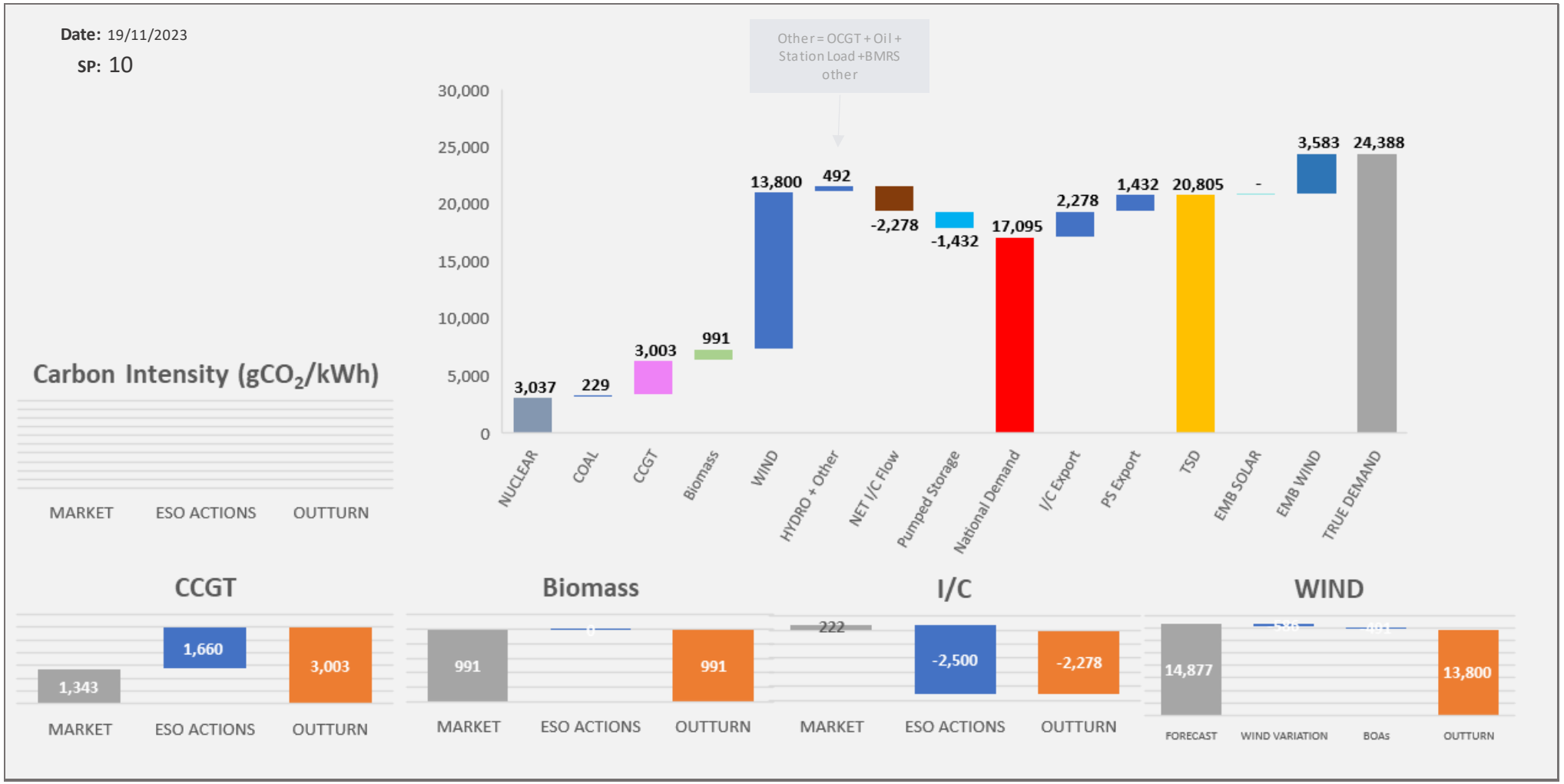
Increasing inertia
Intervention was required to manage System Inertia Monday to Wednesday and also Saturday and Sunday.

ESO Actions | Thursday 16 November – Peak Demand – SP spend ~£37k



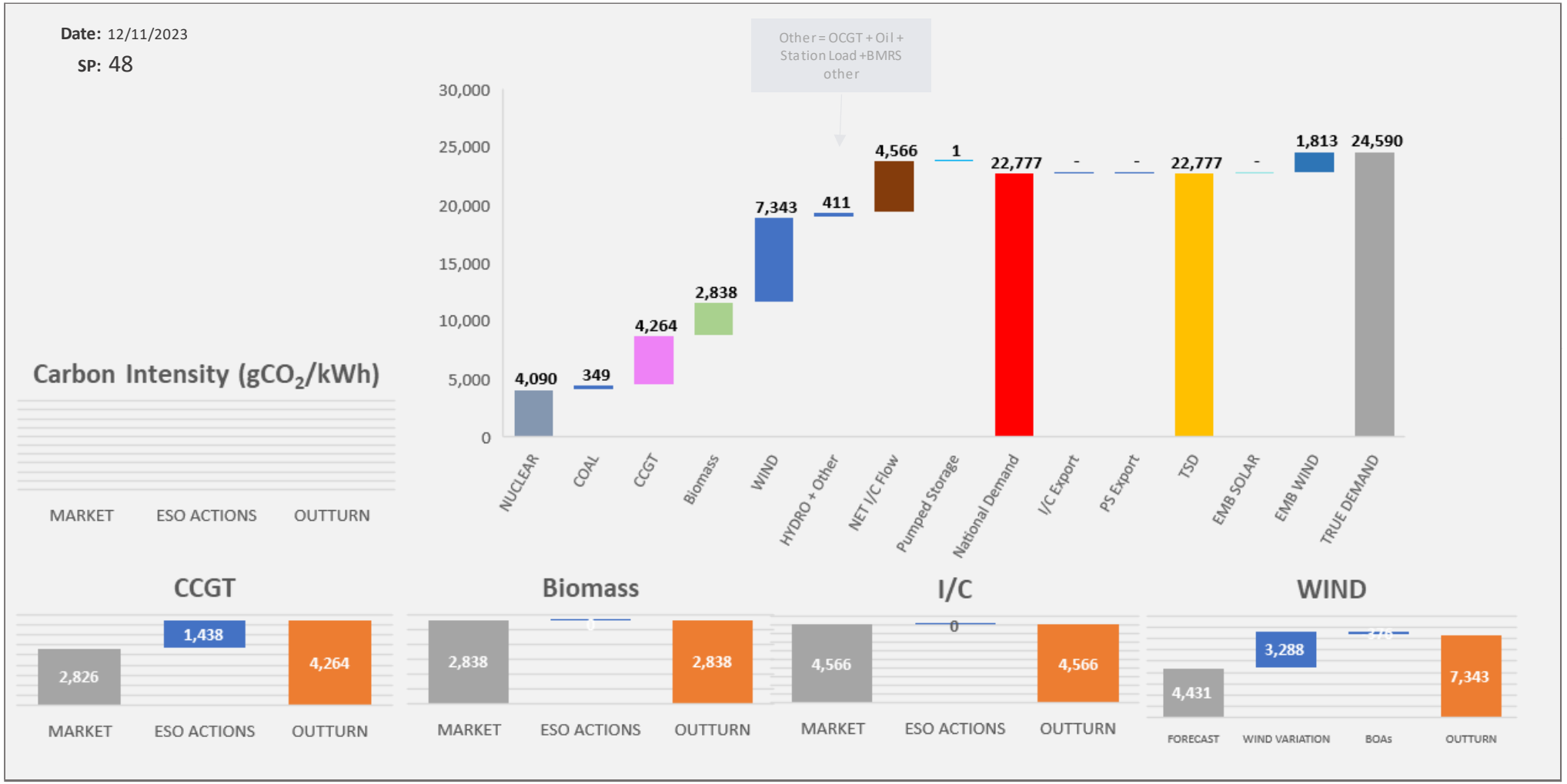
Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

ESO Actions | Sunday 19 November – Minimum Demand – SP Spend ~£309k



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

ESO Actions | Tuesday 14 November – Highest SP Spend ~£392k



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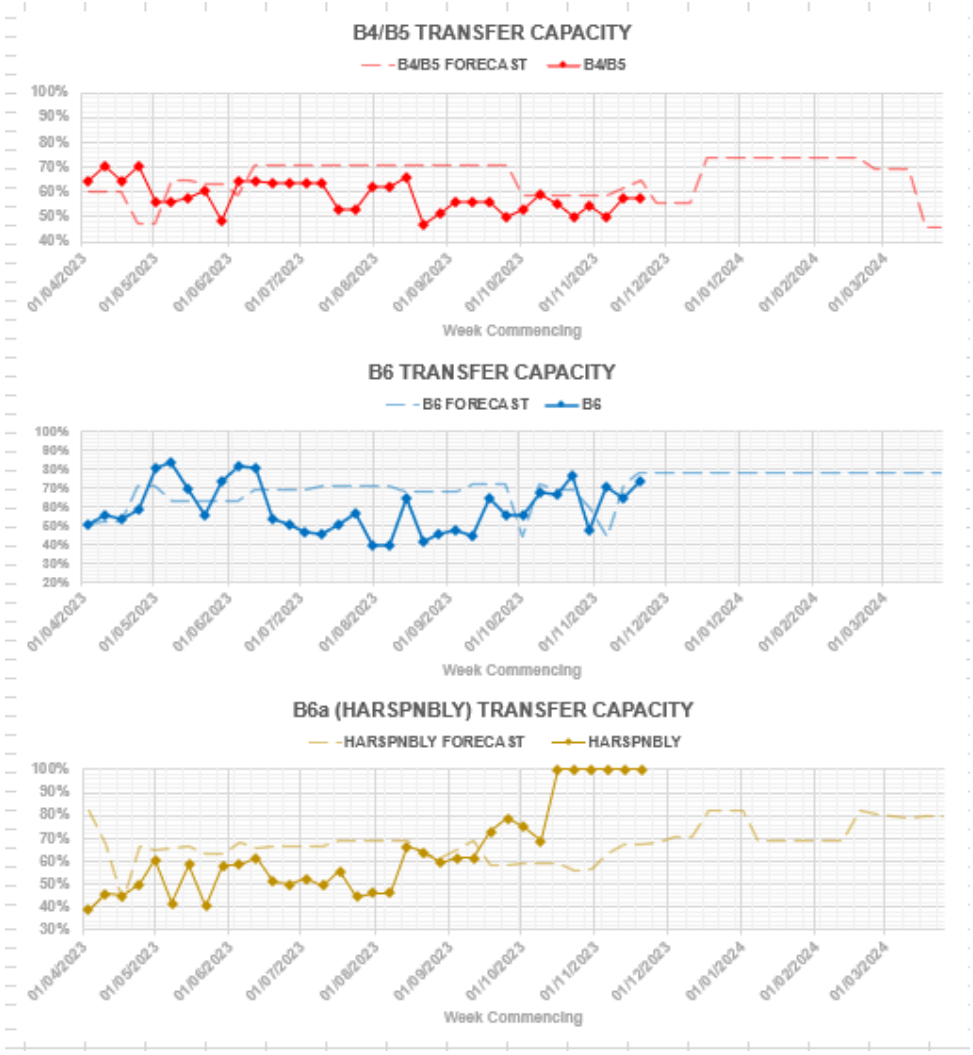
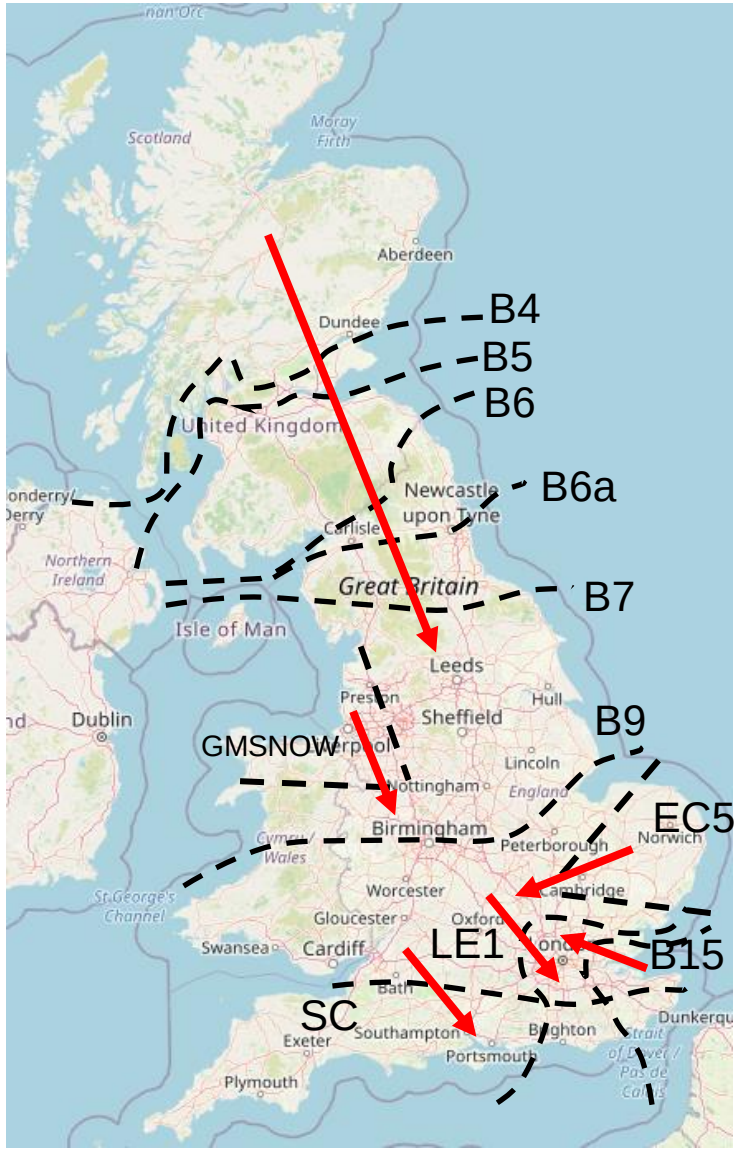
Transparency | Network Congestion

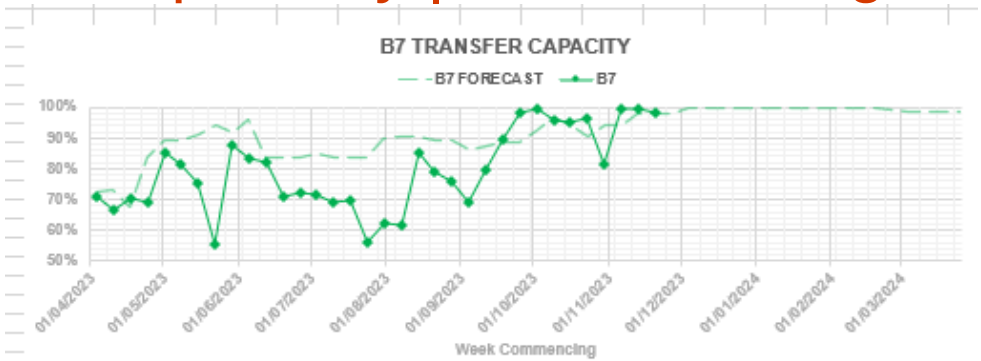


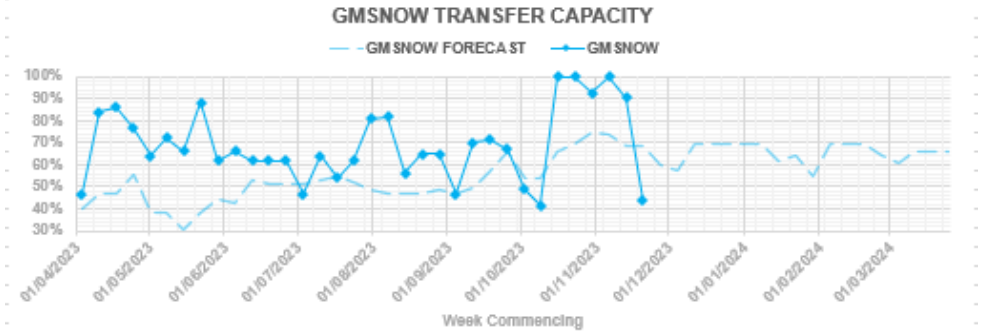
Boundary	Max. Capacity (MW)
B4/B5	3400
B6	6800
B6a	8000
B7	8325
GMSNOW	4700
B9	10600
EC5	5000
LE1	8500
B15	7500
SC	7300

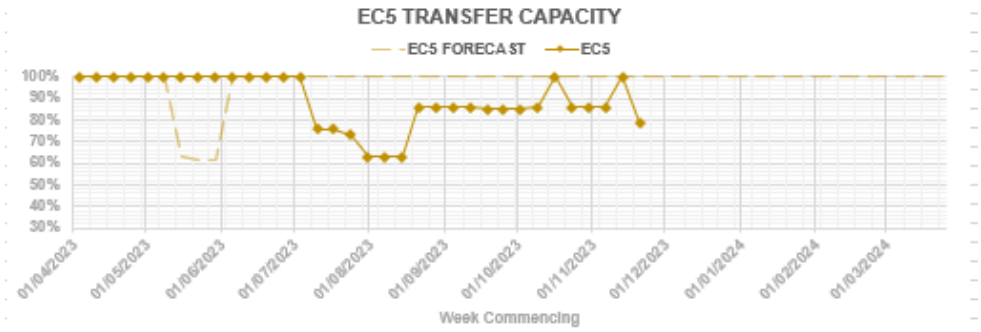


Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
https://data.nationalgrideso.com/data-groups/constraint-management

Transparency | Network Congestion







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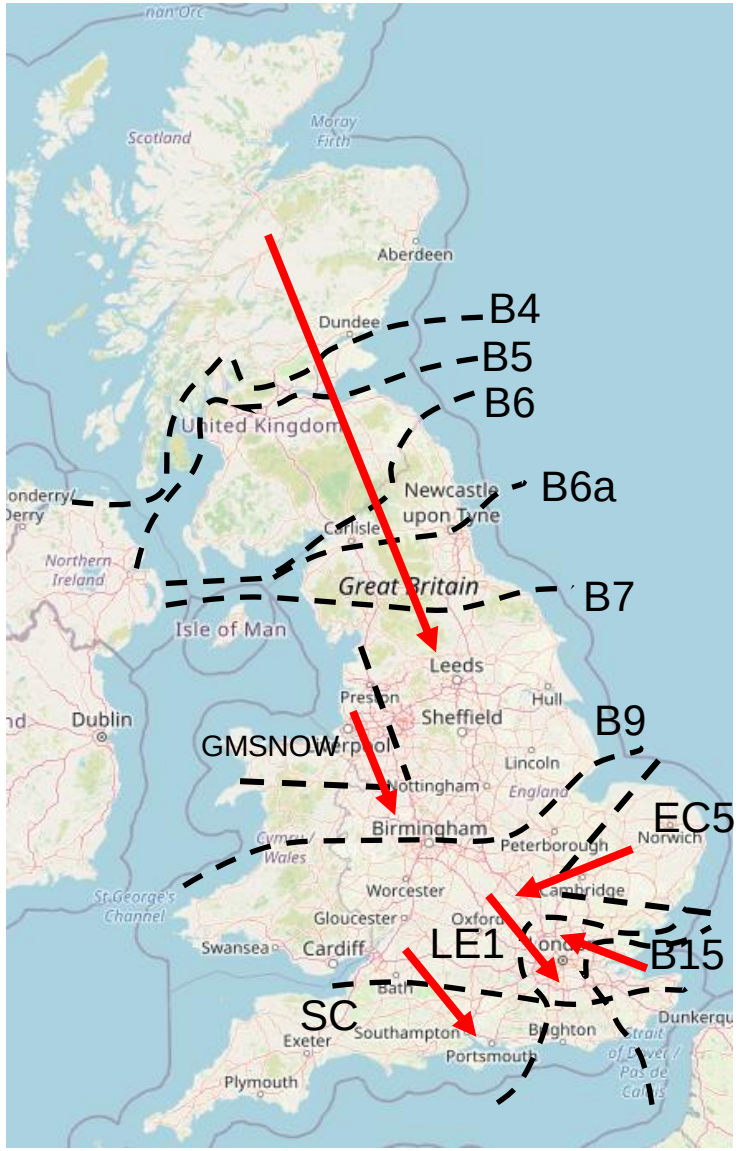

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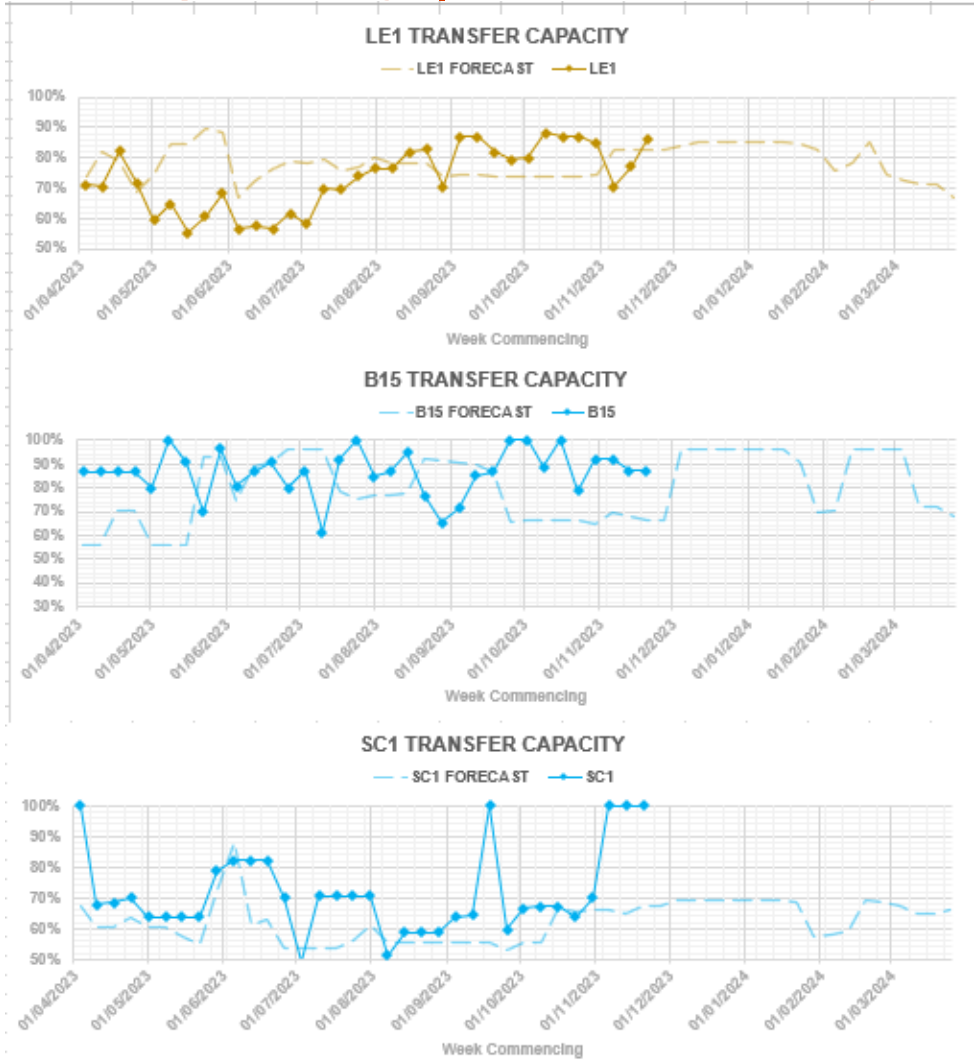

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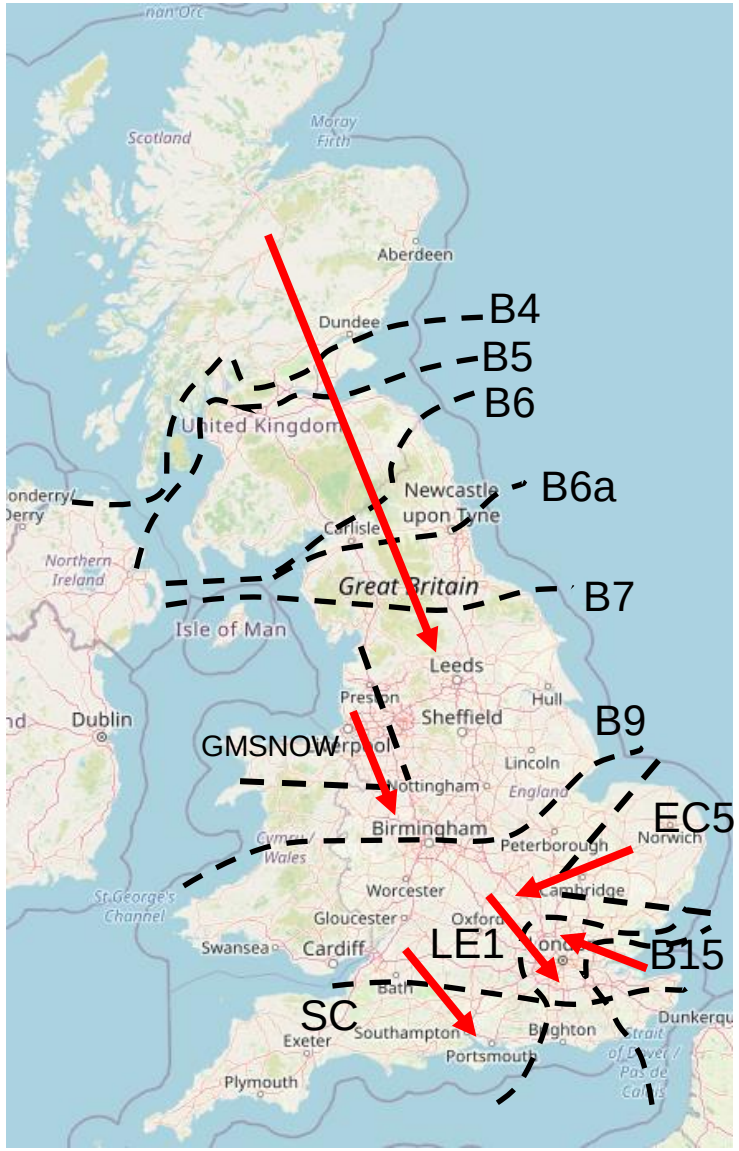

Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
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Previously Asked Questions

Q: Thanks for the answer re the difference between BM and non BM providers for frequency services. BM providers can, rightly, submit negative bids in High services due to ABSVD. Non BM providers cannot do this, it sounds like your suggestion is that they should just register in the BM?

A: Although there may be a difference in the benefits of each individual service, we expect that providers being awarded both high and low contracts would not see a significant difference due to ABSVD as for the low side it may be proportionately advantageous to not have ABSVD. As the markets are generally clearing with looped bids, this should therefore not be impacting market clearing prices. Registering in the BM would enable ABSVD for response, and also other benefits of BM access such as real-time dispatch, and we are keen to work with providers who wish to do this. We will continue to review our services and update designs where we can see benefits for competition and minimising consumer cost.

Q: We also saw oscillations in the South East region on the 04/04/21. Is there any information on those events? These were a smaller magnitude but longer duration.

Follow-up: In this week's OTF I raised a question about the oscillations we saw in the South East area in 2022 (sorry I got the year wrong in the Sli.do question!) and whether there was any published information on this, I was asked to provide specific times.

A: Thank you for providing the additional information. We investigated the event at the time and found that the oscillation was caused by a specific unit and related to the Power System Stabilizer (PSS). The operator investigated the issue and quickly resolved it.

We do not publish reports into specific system issues related to individual assets.

Previously Asked Questions

Q: Will the new EAC results endpoints (e.g., EAC ESO Results Summary 2023-2024) expire after 2024? Can you clarify if you intend to use new endpoints in the future? If not, can you strongly consider omitting the years from the names to prevent them from becoming outdated?

A: The current file end points will stay as they are throughout 2024. In 2025, we expect the end points to change to 'EAC ESO Results Summary 2023-2025' for example

Q: Have the changes to the Calon plant REMIT data altered the margins?

A: We don't comment on individual units. But any updates in declared availability reflected in the margins

Q: As part of the FRCR, has the minimum inertia level now dropped from 140GVA.s to 120GVA.s? Can you please provide a timeline of any changes?

A: FRCR 2023 lower inertia policy was approved by Ofgem on 9th June 2023. The new policy hasn't been implemented. We commit to give industry 5 working days' notice prior to the planned change. We will communicate this via OTF. The first phase is to reduce from 140GVA.s to 130GVA.s. We will monitor this for 1.5-2 months before further reduce to 120GVA.s

Q: The DC procurement forecast history (and probably other) dataset has recently been given two different date formats. Could NGESO consolidate on one date/datetime format? It would make data handling with your date much easier. Thank you

A: We followed up with this owner of this question by email and they have confirmed that this has now been rectified.

Previously Asked Questions

Q: Following the go live of the EAC platform, the BM registered assets are benefitting from the low to negative pricing, however this seems to be distorting the prices for non BM participants. Is this an intended consequence of the auction co-optimisation? Could NGESO consider the impacts this is having on future non BM assets in the frequency services?

A: Thanks for your feedback. EAC co-optimisation and negative pricing aim to optimise the overall market clearing. Non-BM providers can change their bidding strategy to "turn off" welfare sharing if they would like to avoid getting cleared at a unwanted low or negative price. At the same time, we are reviewing ways to align ABSVD for BMUs and non-BMUs as part of our Response reform work.

Q: DCH procurement volumes on 07/11 were 46% below the latest forecasted requirements before the auction run, was this an incorrect forecast and if not, then which specific system conditions changed from forecast publication to auction run?

A: In the process of setting up the DCH assumptions for the auction on the 6th November for delivery on the 7th, an issue in the data file wasn't identified and fed through into the requirements set for the auction that day. This resulted in a large change in procured amount compared to the anticipated volumes we published in the forecast for this day. By the time the issue had been discovered, it was unfortunately too late as the auction process had started.We are currently refining our processes to ensure this does not occur again.

Previously Asked Questions

Q: The ESO actions slide does not have a category for batteries. You have been saying for months that it would be added. Could you please provide a timeline?

A: Thank you for the reminder. Please see the answers we provided to similar questions in August. In addition this analysis relies on the data from the BMRS website which does not currently identify batteries as a fuel type.

16/08 Q: In your ESO actions charts you show “PS Export” and “Pump Storage” (import) but not Battery Storage. Why is this?

A: Following a previous question on this topic we are reviewing the categories used on this slide, however the these charts use early indicative data from the Control Room systems which currently does not identify Battery actions.

09/08 Q: It would be great to see the spending on batteries and how they are used (if at all) on days of significant spend. Same way CCGTs are deployed and you can comment on this so not breaching the "comment on specific actions" restriction.

A: Thank you for the further feedback. As we said in the earlier answer we do continue to review content and will consider this suggestion in the future. However, at this point in the process there is currently insufficient detail in the data to identify specific types of storage.

Advance Questions

Q: Is there a dataset of the Operational Margins - Week Ahead available through the ESO data portal or elsewhere? Would the ESO consider publishing the forecast vs. outturn operational margin in the future (similar to the current Demand slides)?

A: We do not currently publish the operational surplus forecast on the ESO data portal. A de-rated margin forecast is published by Elexon but this has a limited time horizon.

https://www.bmreports.com/bmrs/?q=transmission/lossloadProbDerateMargin

As part of the winter review (available at the link below), we present the outturn operational surplus compared with the probabilistic range published in the Winter Outlook.

https://www.nationalgrideso.com/document/281671/download

We will review internally as to whether we will publish the forecasts and an assessment of the forecasts on the data portal.

Advance Questions

Q:

1) Can NGESO provide an estimate of the percentage of payments that are clawed back across Dynamic Containment, Dynamic Moderation and Dynamic Regulation?

2) As part of the FRCR, has the minimum inertia level now dropped from 140GVA.s to 120GVA.s? Can you please provide a timeline of any changes (past and future)?

A:

1) We are still working on a response to this question.

2) FRCR 2023 lower inertia policy was approved by Ofgem on 9th June 2023. The new policy hasn't been implemented. We commit to give industry 5 working days' notice prior to the planned change. We will communicate this via OTF. The first phase is to reduce from 140GVA.s to 130GVA.s. We will monitor this for 1.5-2 months before further reduce to 120GVA.s.

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