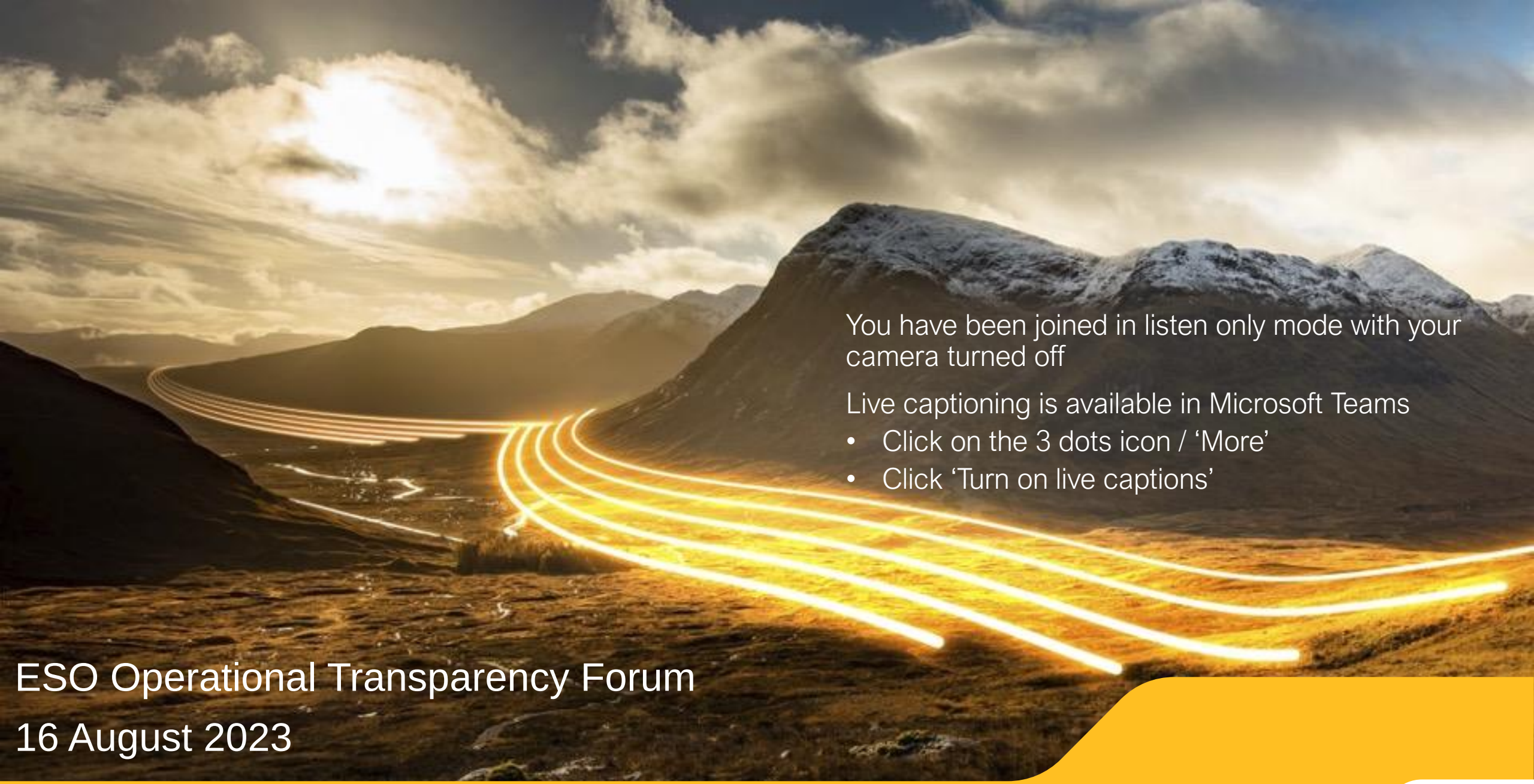


You have been joined in listen only mode with your camera turned off

Live captioning is available in Microsoft Teams

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

ESO Operational Transparency Forum

16 August 2023

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 next 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.

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

Future deep dive / focus topics

Future

Scottish Oscillations – following conclusion of current investigative work. Likely to be September.

Constraints – September

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

Balancing Reserve webinar – postponed until 24th August

After careful consideration, and in order to align more closely with our schedule for launching the EBR Article 18 consultation for Balancing Reserve we have taken the difficult decision to **postpone our Industry Webinar** until **Thursday 24th August.**

The Balancing Reserve team have been working hard to simplify the service design, address areas of concern around the cap on reimbursement and further alignment across ESO reserve services.

For those already registered you will have received an updated invitation and for those yet to sign up a link is available on the right.

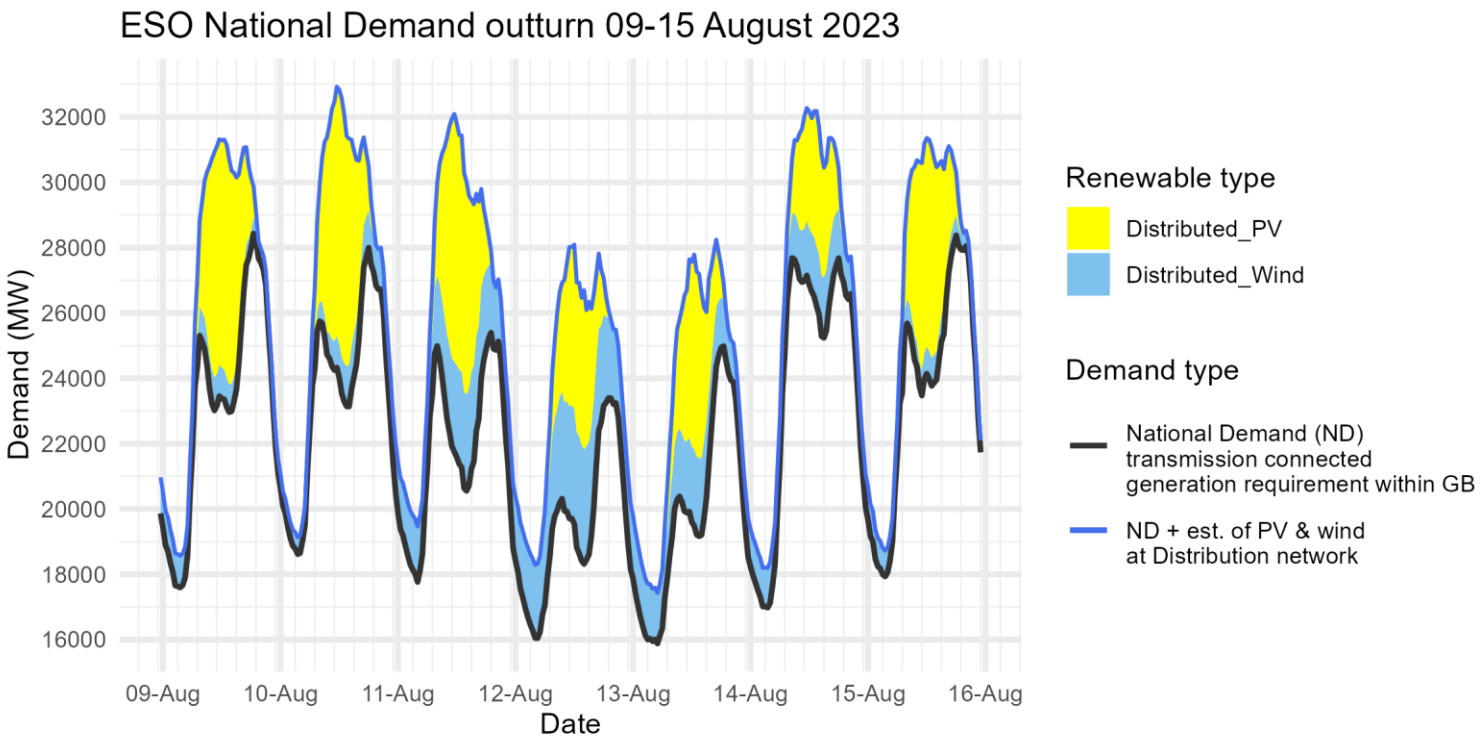
If you have any further questions or concerns, please email us on:

box.futureofbalancingservices@nationalgrideso.com

Sign up for the webinar here

Microsoft Virtual Events Powered by Teams

Demand | Last week demand out-turn



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

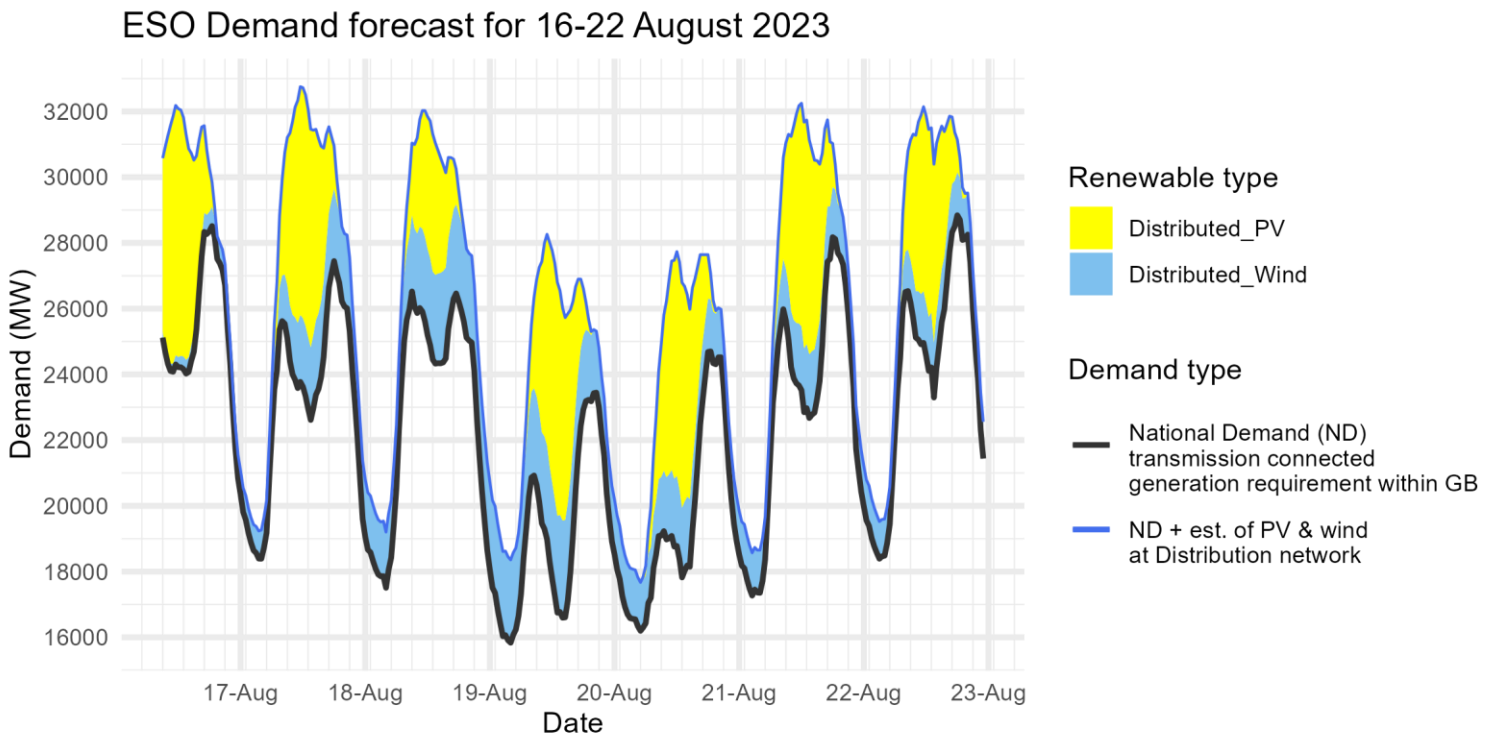
ND values **do not include** export on interconnectors or pumping or station load

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

		FORECAST (Wed 09 Aug)			OUTTURN		
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
09 Aug	Afternoon Min	22.7	1.0	7.5	23.0	0.9	6.9
10 Aug	Overnight Min	18.2	0.5	0.0	18.6	0.5	0.0
10 Aug	Afternoon Min	23.1	1.4	5.9	23.1	1.3	6.9
11 Aug	Overnight Min	17.3	1.7	0.0	17.8	1.7	0.0
11 Aug	Afternoon Min	21.5	3.0	6.0	20.6	3.0	6.5
12 Aug	Overnight Min	15.6	2.2	0.0	16.0	2.3	0.0
12 Aug	Afternoon Min	17.3	3.4	5.6	18.3	3.5	4.9
13 Aug	Overnight Min	15.2	1.8	0.0	15.9	1.6	0.0
13 Aug	Afternoon Min	17.3	2.5	6.3	19.2	2.4	5.6
14 Aug	Overnight Min	16.9	1.1	0.0	17.0	1.2	0.0
14 Aug	Afternoon Min	23.5	1.3	6.2	25.2	1.9	3.4
15 Aug	Overnight Min	18.4	0.6	0.0	17.9	0.8	0.0
15 Aug	Afternoon Min	24.3	0.7	5.6	23.8	0.9	6.4

Demand | Week Ahead



Date	Forecasting Point	FORECAST (Wed 16 Aug) National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
16 Aug 2023	Afternoon Min	24.0	0.4	6.9
17 Aug 2023	Overnight Min	18.4	0.9	0.0
17 Aug 2023	Afternoon Min	22.6	2.2	6.6
18 Aug 2023	Overnight Min	17.5	1.7	0.0
18 Aug 2023	Afternoon Min	24.3	2.7	4.0
19 Aug 2023	Overnight Min	15.8	2.5	0.0
19 Aug 2023	Afternoon Min	16.6	3.0	6.5
20 Aug 2023	Overnight Min	16.2	1.5	0.0
20 Aug 2023	Afternoon Min	17.8	2.1	6.8
21 Aug 2023	Overnight Min	17.3	1.3	0.0
21 Aug 2023	Afternoon Min	22.7	1.9	6.5
22 Aug 2023	Overnight Min	18.4	1.1	0.0
22 Aug 2023	Afternoon Min	23.3	1.7	5.4

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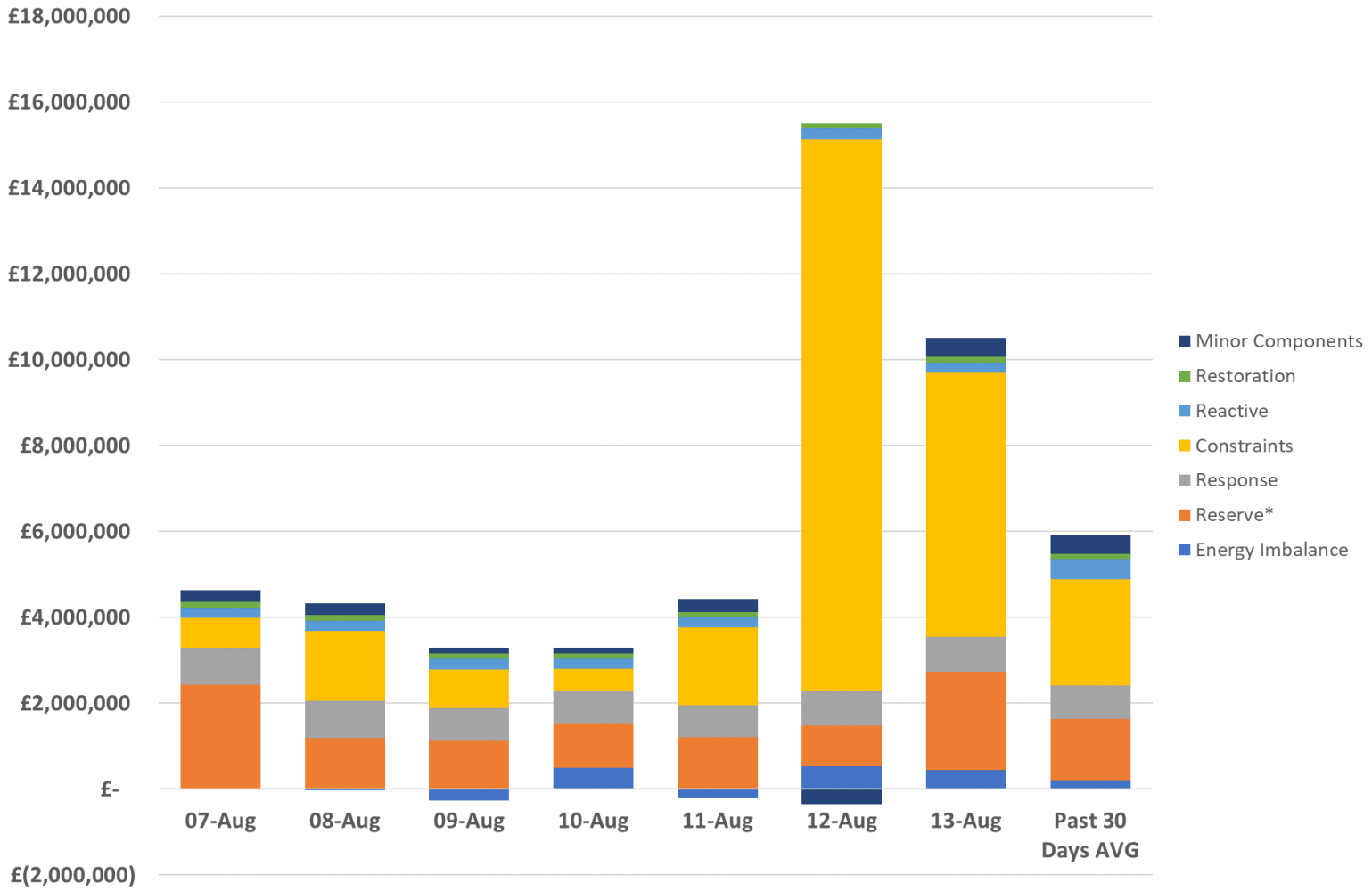
ESO Actions | Category costs breakdown for the last week



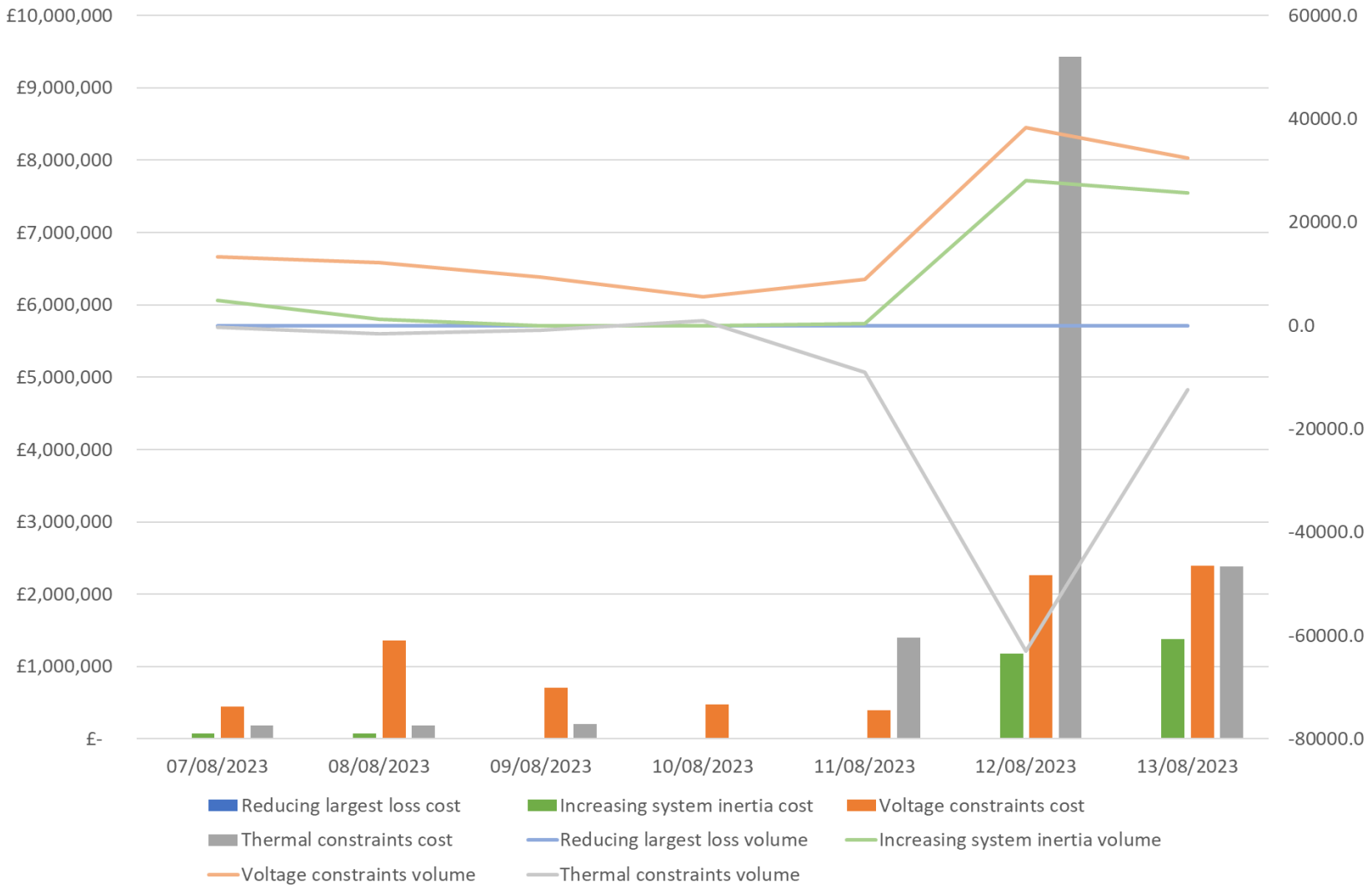
Date	Total (£m)
07/08/2023	4.6
08/08/2023	4.3
09/08/2023	3.0
10/08/2023	3.3
11/08/2023	4.2
12/08/2023	15.2
13/08/2023	10.5
Weekly Total	45.1
Previous Week	41.9

Constraints 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



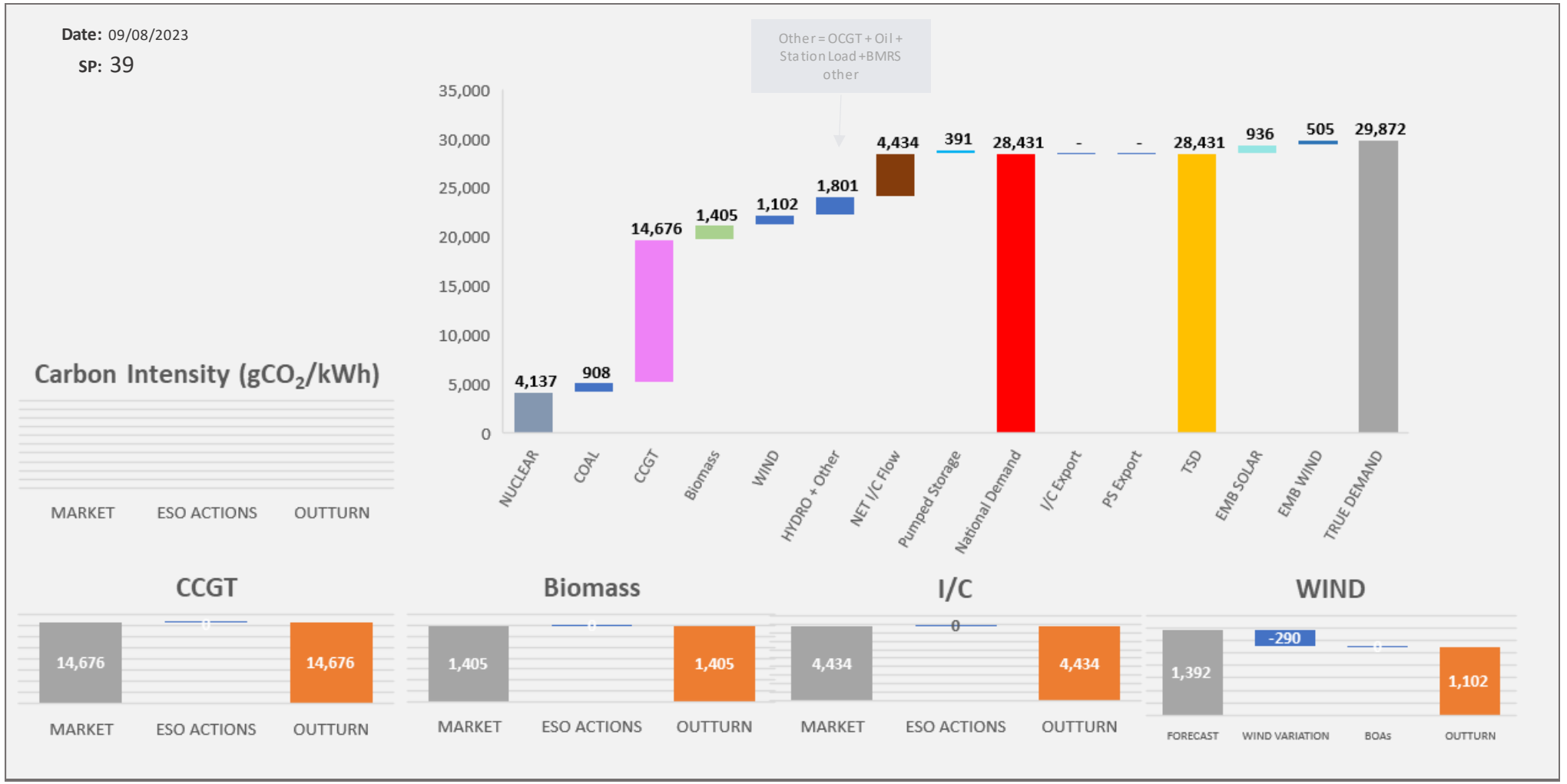
Thermal – network congestion
Actions were required to manage thermal constraints throughout the week expect Thursday. The most significant costs were on Saturday.

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

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

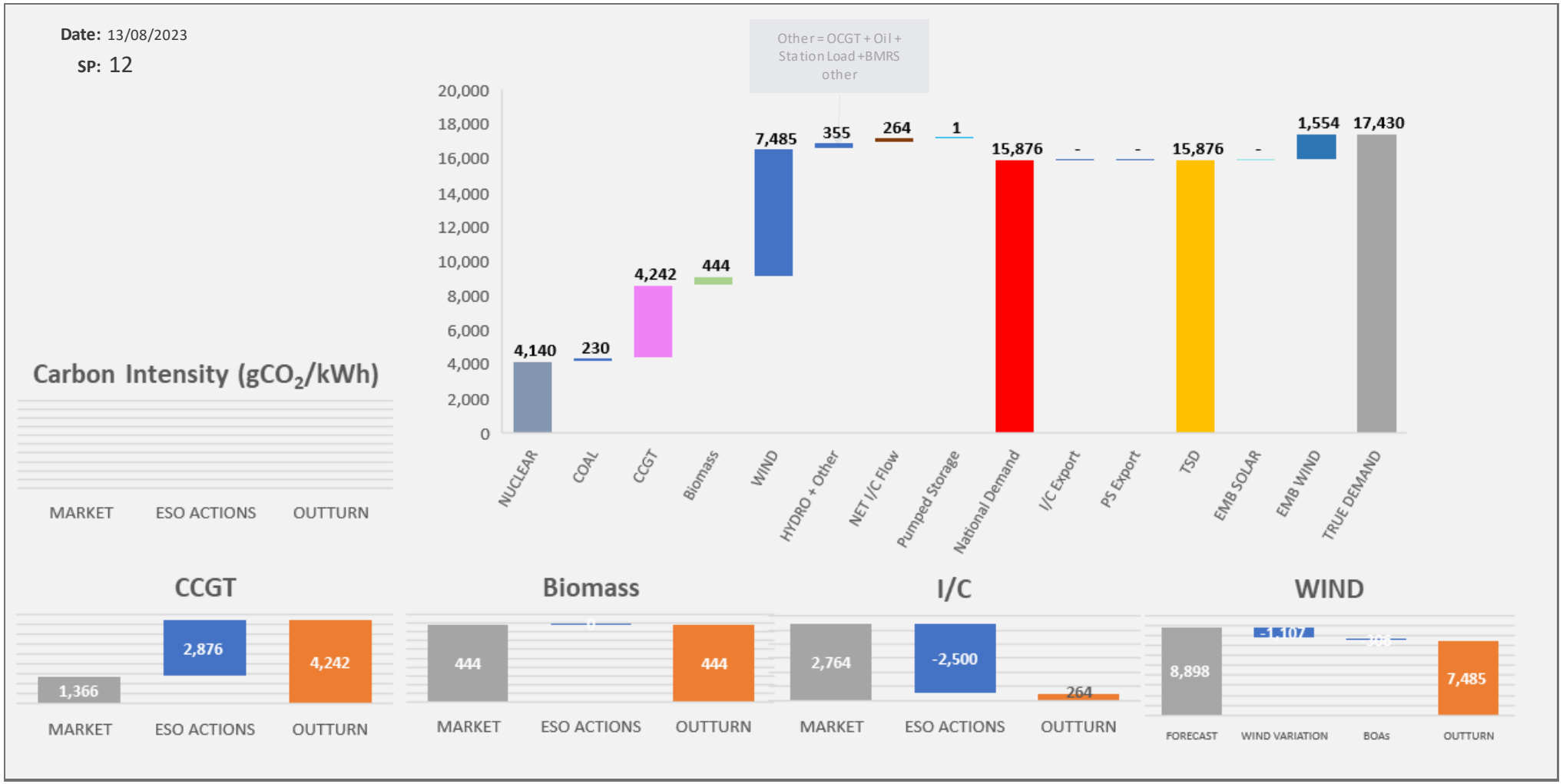
Increasing inertia
Intervention was required to manage system inertia on Mon, Tue, Sat and Sun.

ESO Actions | Wednesday 09 August – Peak Demand – SP spend ~£17k



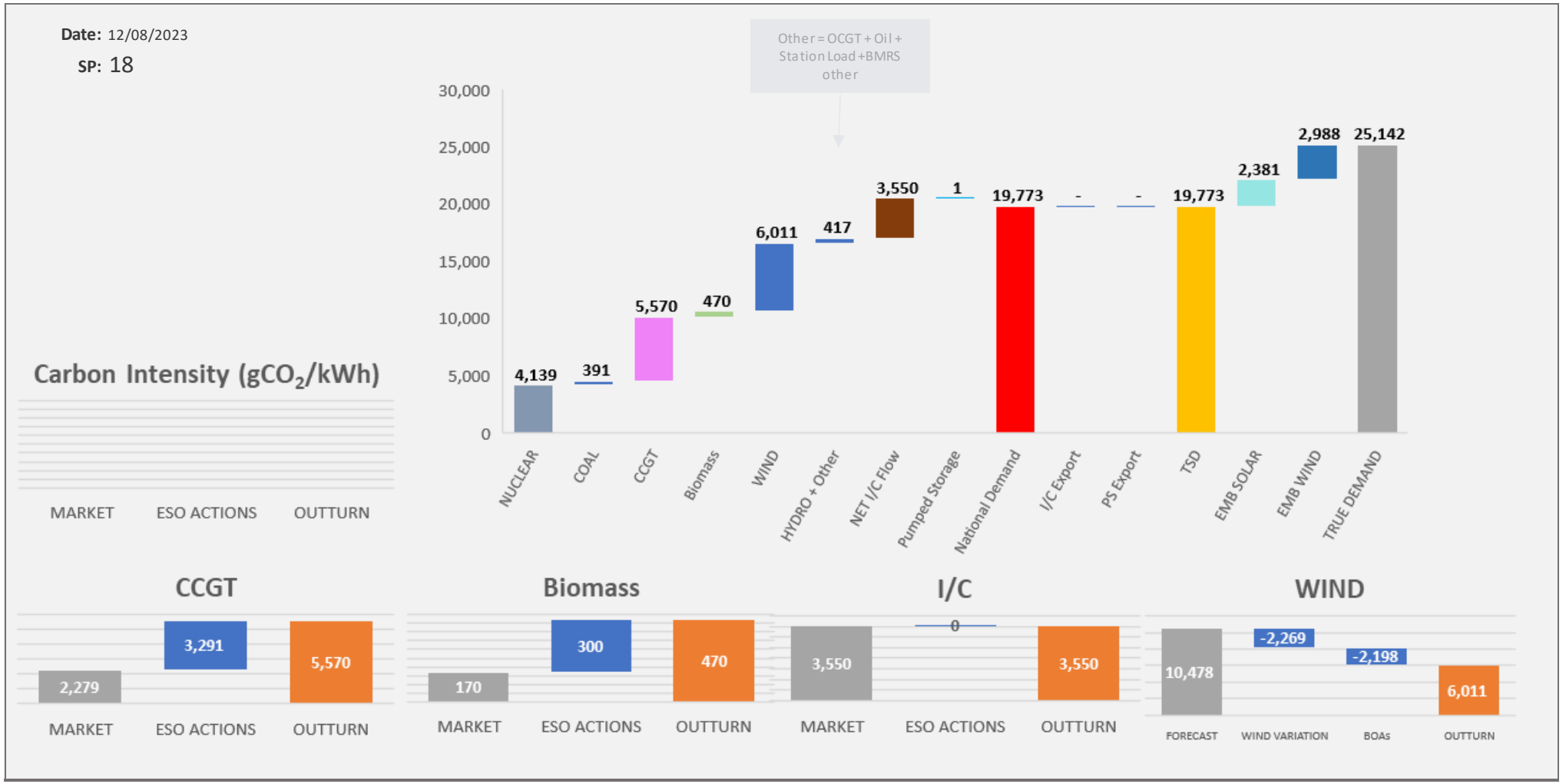
Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

ESO Actions | Sunday 13 August – Minimum Demand – SP Spend ~£232k



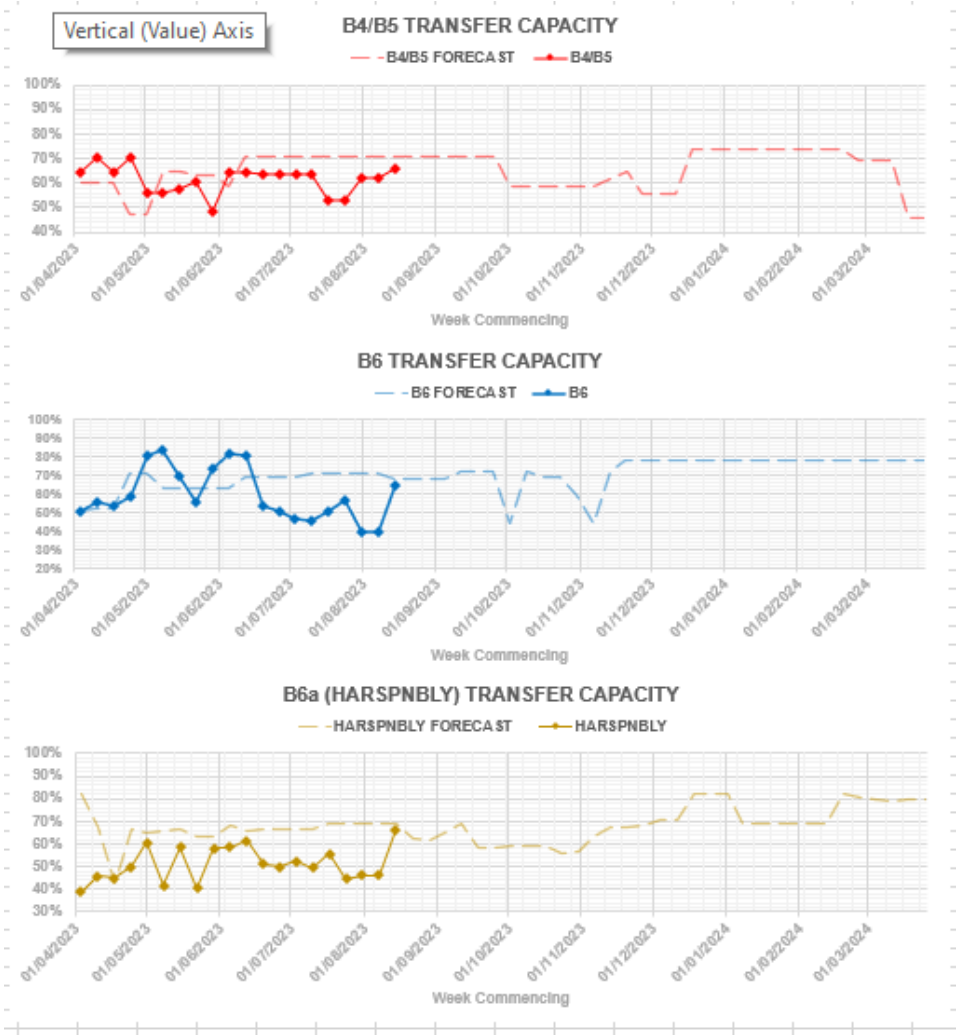
Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

ESO Actions | Saturday 12 August – Highest SP Spend ~£476k

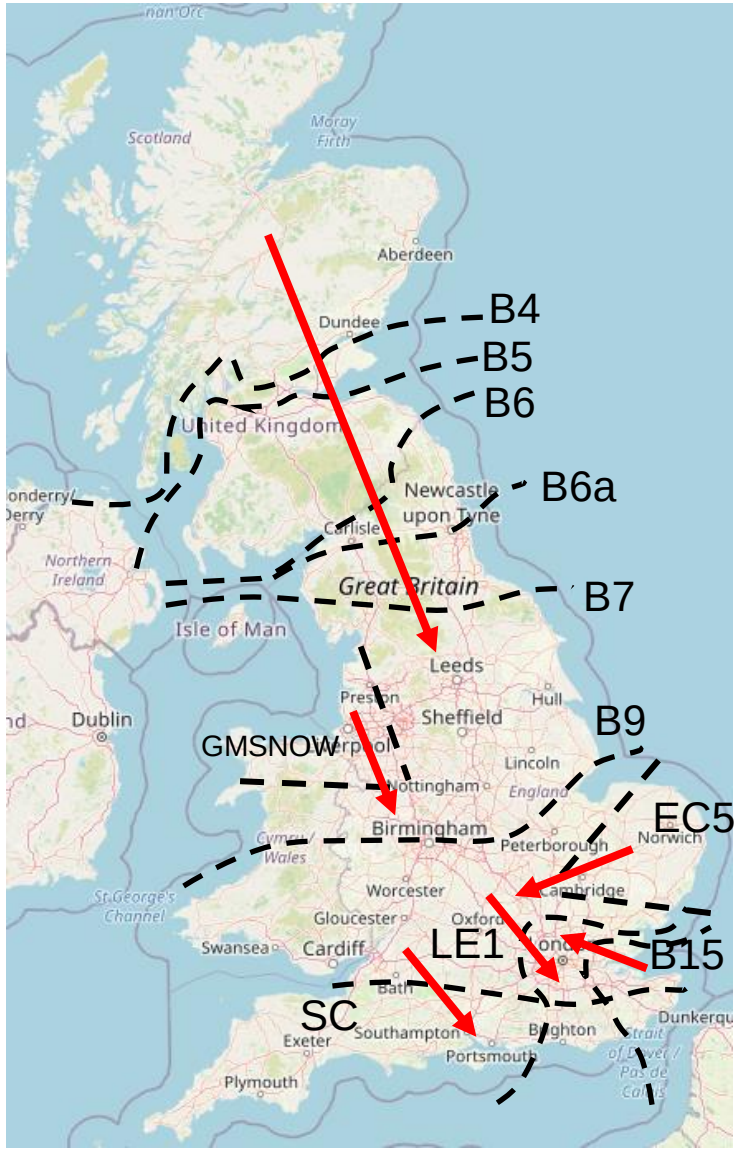


Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

Transparency | Network Congestion

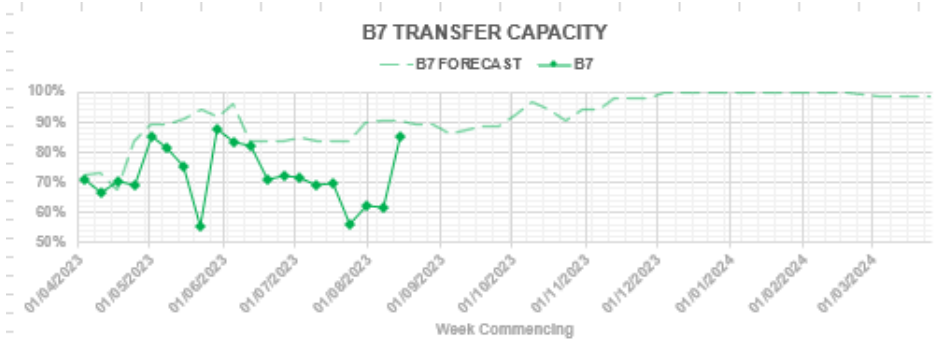


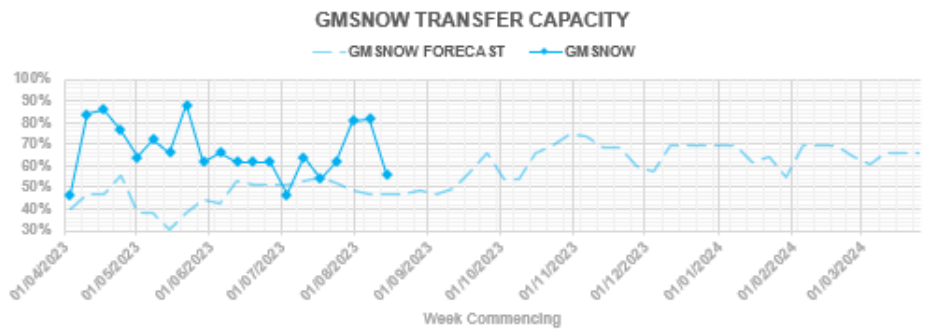
Boundary	Max. Capacity (MW)
B4/B5	3400
B6	6800
B6a	8000
B7	8325
GMSNOW	4700
B9	10600
EC5	5000
LE1	8500
B15	7500
SC	7300

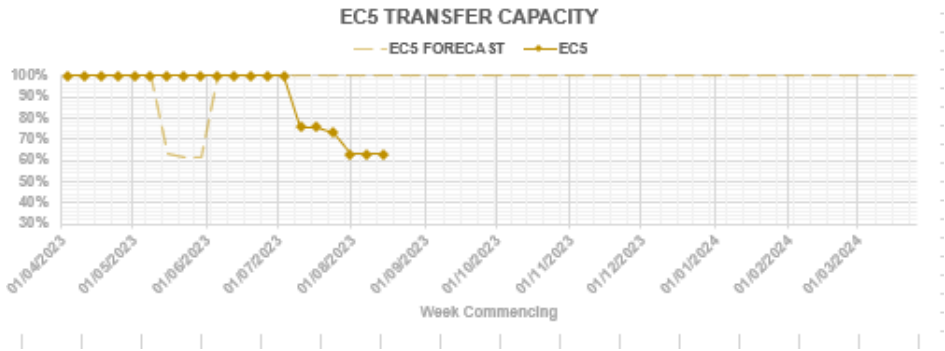


Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
https://data.nationalgrideso.com/data-groups/constraint-management

Transparency | Network Congestion







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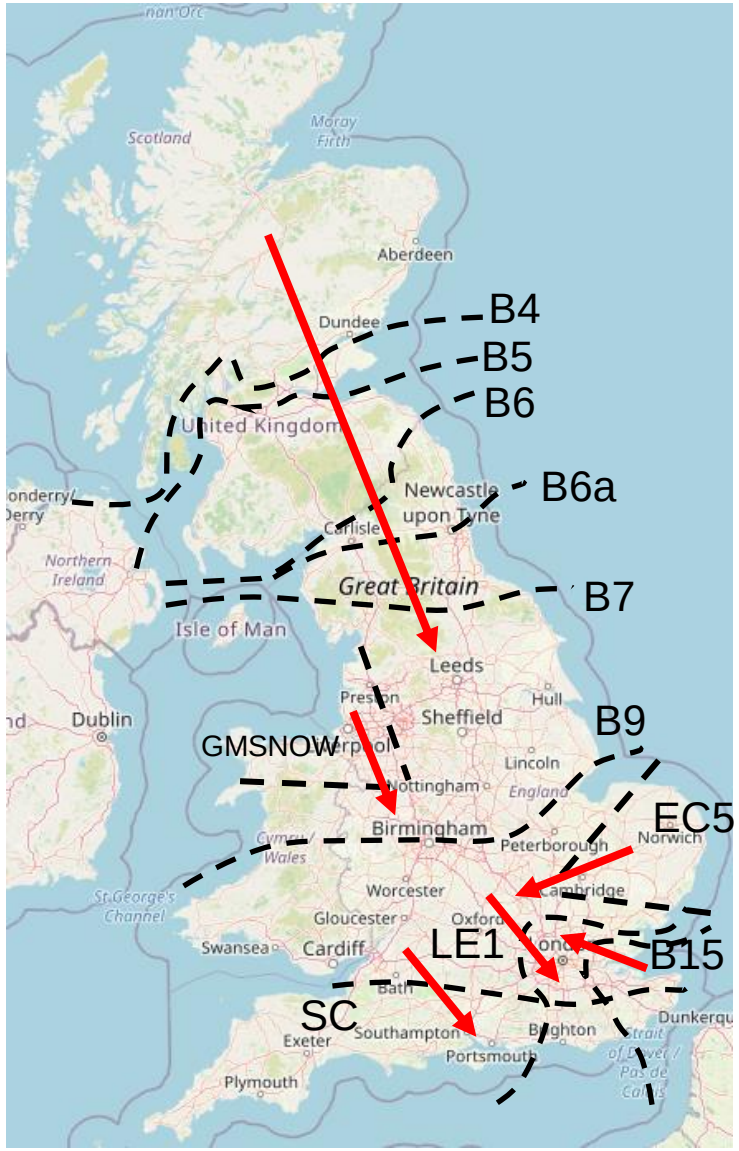

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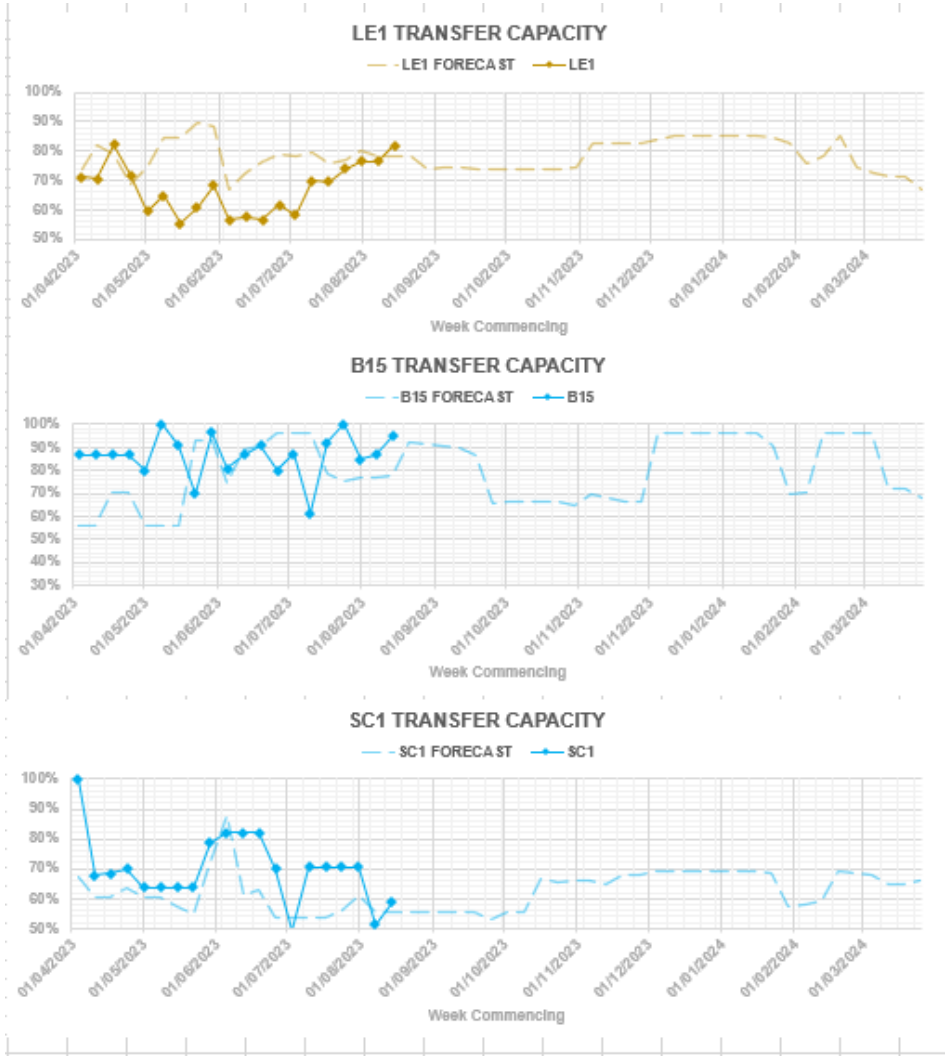
Transparency | Network Congestion



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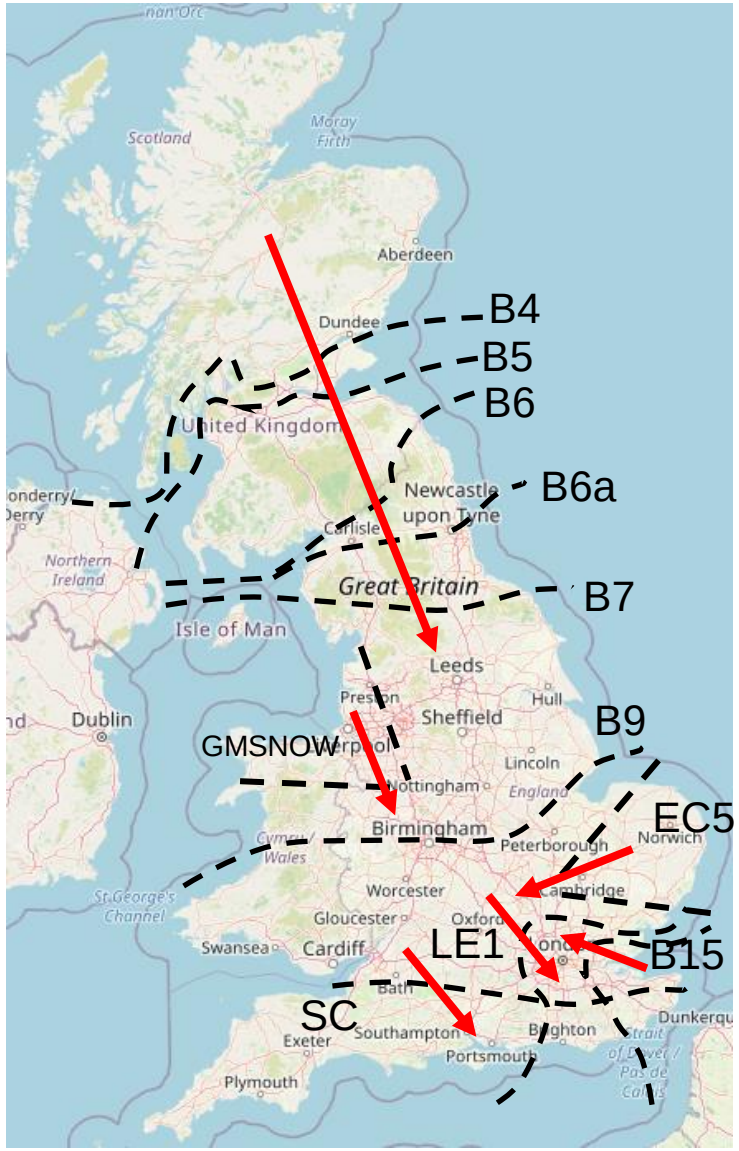

Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
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Previously Asked Questions

Q: About the answer for the scenario 3b in stacking DC/DM/DR + BM - can you clarify if you've started the analysis? >1 GW is awarded daily in DC/DM/DR, and most of it comes from BMUs. Allowing 3b would bring a very large amount of additional volume in the BM (+ make batteries nearly always available)

A: Further analysis is ongoing before we make this change. Industry will be provided with sufficient notice before any changes are made.

DC – Dynamic Containment
DM – Dynamic Moderation
DR – Dynamic Regulation
BM – Balancing Mechanism
BMU – Balancing Mechanism Unit

Previously Asked Questions

Q: As far as I can tell, Piclo's data portal contains contracted volumes, but not instructed volumes. During the LCM design phase, dispatch transparency was an important requirement that was discussed. When will LCM dispatch be made actually transparent?

A: Thank you for pointing to this. ESO and our partner Piclo is working to ensure Piclo's data portal shows the best possible transparent forward view of actual dispatch. https://data.piclo.energy/

Exceptionally, at this stage in the trials, a few Expired instructions incorrectly show as Contracted. We are working to correct this, so that all Contracted Volume is accurate before any Operational use begins.

LCM – Local Constraint Management

Q: But if a voltage reduction was requested by the ENCC under OC6 that would feed through into cash out at VoLL?

A: Yes, in the extremely rare event that there is insufficient capacity in the market to meet demand, the SO can use Demand Control actions as a last resort to balance the system. Such an emergency instruction would be issued under OC6 (Operating Code 6 of the Grid Code, concerning demand control) and would be captured through the BSC (Balancing and Settlements Code) and included in the imbalance price calculation at a price of Value of Lost Load (VoLL) and notified to the market via MODIS (Market Operation Data Interface System).

Previously Asked Questions

Q: Will 'out of scope' questions regarding actions on specific units be answered directly with the question proposer post OTF if asked on the OTF? I know you won't answer regards specific units on the day

A: The ESO will not provide detailed explanations about specific units or actions whether the question is asked at the OTF or through another route.

If you have concerns about the actions of a unit or market participant (including the ESO) these should be reported to the market Monitoring team at: MarketMonitoring@nationalgrideso.com

For clarity, we will continue to present deep dives at the OTF about expensive or difficult days and as before this will include explanation of the operational scenarios and how we made particular decisions - for margin/ system issues, etc

Q: If demand control by voltage reduction is becoming a BAU process, is it possible for the volumes of the service to be made visible to the wider market so other participants can gauge the volume that the ESO has access to?

A: Voltage reduction system tests are issued as a voltage instruction to a limited area (single DNO) and as such are not designed as a market tool. OFGEM have agreed that due to the relatively small volumes and durations these tests don't need to be notified to the market via MODIS (Market Operation Data Interface System).

Apologies BAU may not be quite the correct term, these are still classed as system tests and are relatively rare, the term was used to refer to the fact that they are mature in their development, rather than that their usage is commonplace.

Previously Asked Questions

Q: Can we not have a break and you answer some of these at the OTF - Tom's one is quite important and I hope you know the answer!

A: Thank you for the feedback. I understand it is frustrating when we are unable to provide an immediate response.

The OTF is supported each week by experts and their teams from across the ESO and they do their best to answer questions live. However, we cannot guarantee to answer all questions on the day and will continue to take questions away when:

- The relevant expert is not available to join the call
- The necessary information or data is not immediately available, or the answer requires further consideration.
- We need to clarification to ensure we answer the question appropriately
- We are not able to provide the answer in the time available in the call.

During the live event we are monitoring the progress on questions being answered. The decision is made to take a short break when it is considered likely this will enable us to provide more answers on the day. We value the time of everyone participating in the OTF do not want to keep people hanging on when we are unlikely to deliver additional answers.

Previously Asked Questions

Q: Apologies if I missed it today. Do you have a date for the Scottish network oscillations 'deep dive' ? Thanks, Dan

A: We will notify the date for the deep dive once the investigation is complete and any questions we receive on this topic will be forwarded for inclusion in the deep dive. Once the deep dive date is confirmed it will be included on the slide near the beginning of the pack.

If you miss part or all of an event you can catch up on our webpage at: Operational Transparency Forum | ESO (nationalgrideso.com) . We aim to publish the slide pack before the weekly live event and the webinar recording shortly afterwards.

Q: Could you please provide a brief explanation on how non-BMUs can participate in ancillary services (DC, DM, DR) via Ancillary Services Dispatch Platform (ASDP)?

A: We are still working on an answer to this part of the question.

Q: How are PNs submitted and selected by the ESO?

A: The ESO does not submit or select PNs. PN or Physical Notification is part of the set of data items which the operator of a BMU must submit into the Balancing Mechanism. This informs the BM and the ESO of the unit's planned levels of generation.

It is defined in the Grid Code, Balancing Code 1 (https://www.nationalgrideso.com/document/33851/download) in section BC1.A.1.1 as a series of MW figures and associated times, making up a profile of intended input or output of Active Power at the Grid Entry Point or Grid Supply Point. BM = Balancing Mechanism BMU = Balancing Mechanism Unit

Previously Asked Questions

Q: Parties continue to be fined for breach of the TCLC. Can ESO please publish live constraint data so parties know when constraints are active? They are trading blind.

TCLC = Transmission Constraint Licence Condition Guidance

A: There are currently no plans to publish live constraint data, but one example of a data set you could use to identify constraint periods is the day ahead flows and limits file from the ESO data portal. This data file shows key constraint boundaries, expected flows and therefore forecast congestion. Whilst real time conditions can change, the wording of the Transmission Constraint Licence Condition (TCLC) refers to a Constraint Period and this data set could be used to help with identifying these conditions.

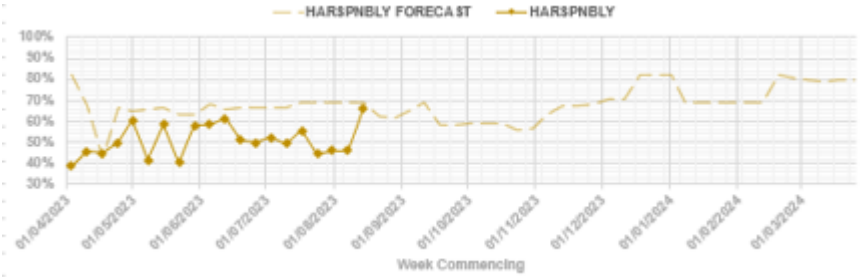
https://data.nationalgrideso.com/constraint-management/day-ahead-constraint-flows-and-limits

ESO cannot provide advice or guidance with respect to compliance with market rules as we are not an enforcement body. Therefore, the above does not constitute an advisory position but is shared in the interests of transparency.

Any specific queries on your own units compliance with TCLC can be shared with TCLC@Ofgem.gov.uk if you believe ambiguity may exist in their published guidance but it is for each business to ensure their own regulatory compliance.

https://www.ofgem.gov.uk/publications/transmission-constraint-licence-condition-guidance

Previously Asked Questions



Q: A lot of the constraints seem to be a long way from the forecasts, why?

A: Thank you for your question.

The graphs we provide on the OTF slides show the real-time constraint values (in the solid line) and the Year Ahead (YA) constraint limits (the dashed line). The real-time constraint limits are taken from the current day ahead (DA) handover information, and so are the most accurate limits we can provide. The year ahead limits are set a year ahead of time and are calculated based on the known outage plan at that time. As you point out, these values aren't always the same.

Your question of why, is indeed an important question, and there isn't necessarily one cause for this discrepancy. At year ahead the outage plan is decided, this plan factors in new installation projects, and routine maintenance. These are all major and foreseeable works that we can plan. The YA plan however does not factor in system faults, or emergency work that needs to be done. It also doesn't factor in delays, or over running of work, as all of these are to some extent unforeseen. Within Network Access Planning (NAP) we are constantly adjusting the outage plan at timescales from YA to DA to reduce the costs associated with system constraints. Delays to work, and network faults disrupt the outage plan, and part of the value added by NAP is reviewing the plan to optimise around these issues. This could lead us to revise constraint limits and get these costs sanctioned, or it can sometimes lead to the cancellation of work due to issues around maintaining a secure and operable network. Whatever the outcome of these unforeseen changes, what we see is that real-time constraint limits are sometimes different from what was released at YA. NAP as a department is constantly working with TOs to ensure that we reduce plan change as much as possible, but some level of change will always be necessary as we cannot avoid all unforeseen issues that may occur.

I hope this has answered your question, if any further clarification is needed this can be dealt with in the constraint deep dive.

Advanced questions

Q: I apologize if this question has already been answered in the past but is there a source that allows us to see the BMU to Fuel Type mapping that feeds into instantaneous fuel generation in order to better understand the amount of generation at risk due to intermittencies?

A: We do not publish this data but Elexon publishes reference data on fuel types: https://bmrs.elexon.co.uk/api-documentation

Q: On Sunday 13/8/2023 0430, DCH forecast requirements for 14/8/2023 were advertised to be 803MW on average. At the auction later that day, NG procured an average of 1350MW, causing the DCL prices to spike to 3x their normal level. Please can NG explain the rationale for this drastic change in forecast requirements. Is there a disconnect between the methodology used for the D+1 - D+4 forecasts and the forecast used later in the day? Can the D+1 - D+4 volume requirements be trusted?

This question was received after the deadline and the answer will be included in next week's pack

Outstanding questions

Q: It seems to take a long time to get responses for reconciliation where mistakes have been made by the ESO in performance monitoring. Can we get more transparency on expected timescales for response, and how many of these kind of tickets are outstanding, and the rate at which they are resolved.

A: Thank you for providing additional detail about the outstanding queries. These have been passed to the appropriate ESO team for action and they will reply to you directly.

We will also ask the team to provide a response to the second part of this question for the OTF.

Q: Follow-on for question on non-BM balancing post-IT change: while auction results will be published, there's currently no publication of real-time dispatch. If IT systems are being upgraded to handle real-time data, can we please have real-time dispatch transparency (like we have for the BM)

Q: The published Peak Demand Forecast (source OPMR) shows a significant decrease in weeks 44-45 33GW. Is this forecast correct?

A: Thank you for raising this – we are investigating further.

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.
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- **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** – 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