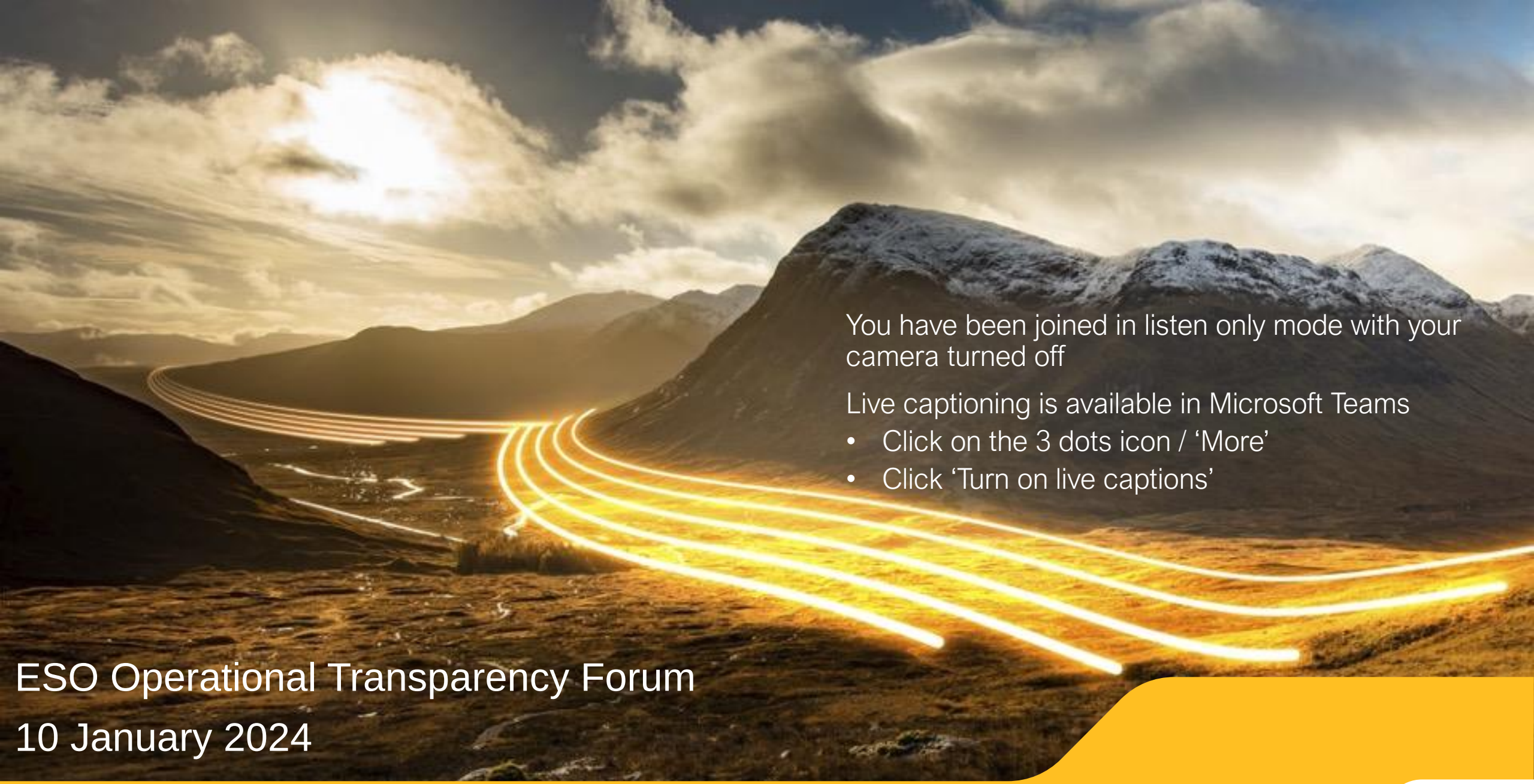


You have been joined in listen only mode with your camera turned off

Live captioning is available in Microsoft Teams

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

# ESO Operational Transparency Forum

10 January 2024

# 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**

OTF Survey Results – 17th January

Overview of frequency event on 22nd December – 17th January

DFS Update – 24th January

Managing Storm Conditions – date tbc

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

# Recent Events (20/12 – 09/01)

**22/12/2023**

13:10 an interconnector tripped whilst importing 1000MW to GB, followed by a subsequent generator trip which was exporting ~440MW.

The frequency reached a maximum deviation of 49.266Hz returning to steady state limit (49.5Hz) within 60 seconds.

**Storm Events**

Several storm events over the end of December to early January resulting in circuit trips.

In all events, systems performed as expected and as is standard practice, all events are reviewed and investigated. We have more information on these topics planned at future OTF events.

# Local Constraints Market Scotland

**The LCM was established to save overall costs for the consumer on actions at one of the Boundaries with highest total spend.**

LCM Scotland has been open since April and publishes volumes to-date and comparative BM prices.

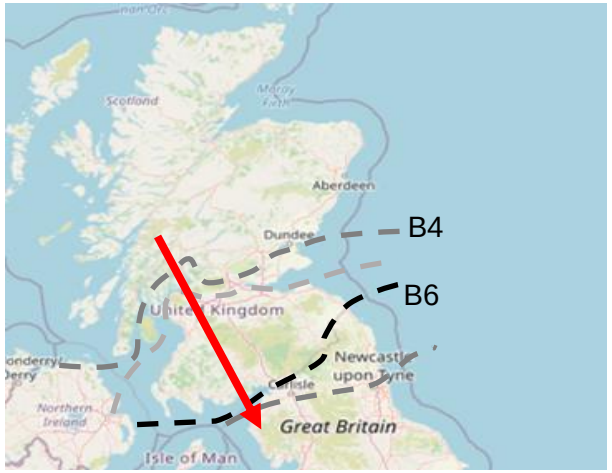
LCM Results Report available at https://data.piclo.energy/;

BM prices: https://www.nationalgrideso.com/document/291006/download

***Webinar: LCM Futures & fairer access consultation - Tues 16th Jan***

- **Focus on learnings & driving benefits** for ongoing LCM Scotland
- **Applicable Balancing Services Volume Data (ABSVD)** – progress limited option for interim LCM energy compensation
- **Q&A** - How we work together, deliver value whilst managing constraints

Register for our Webinar on Tues 16th January here




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

Ahead of implementing longer-term Regional Development Programmes (RDP) across Scotland, a tactical solution may ease rising constraint costs on GB's most congested boundary, if it can use Distributed Energy Resources (DER). Anglo-Scottish (B6) boundaries show some of the highest constraints of any GB boundary and these are set to increase.

**LCM specifically targets B6 constraint costs as an interim solution; can help B4 constraints too**.

LCM went live in Dec 23; Bids since April 2023 – >80 Competitions run; 1 MW tendered (average levels)

**Thank you to our Stakeholders for all the valued feedback.**

# OTF Survey

Thank you to the 91 people who completed our OTF survey!

We really appreciate you taking the time provide your feedback and suggestions.

We will provide a summary of results and next steps in next week's OTF (17th January).

# Updated Transparency Roadmap

On 21st December we published our updated Transparency Roadmap for 2023-2024 here.

The Transparency Roadmap identifies activities across ESO which contribute to the ongoing delivery of transparency for the ESO and works in tandem with the OTF to enhance the provision of transparency & insight of operational decision making.

# BSUoS Fixed Tariff 4 Published

Sli.do code #OTF

**BSUoS Fixed Tariff**
**Final Tariff 4 - Oct 2024 - Mar 2025**
**Draft Tariff 5 - Apr 2025 – Sep 2025**

Published 22nd December 2023

**Introduction**

From 1st April 2023 BSUoS costs have been recovered under a new fixed tariff methodology as defined by CMP361. The CMP361 decision determined that the tariff should be fixed for 6 months with 9 months' notice of the tariff values being provided by the ESO. This report defines the final BSUoS tariff for the Oct 2024 to Mar 2025 period as well as providing a draft view of the Apr 2025 to Sept 2025 tariff period. We are calling these BSUoS Fixed Tariffs 4 and 5 respectively.

**Background**

The costs of balancing the system change and are difficult to predict. This makes the BSUoS charge also difficult to predict.

CMP361 introduced an ex-ante fixed volumetric BSUoS tariff set over a total fixed and notice period of 15 months which was designed to deliver the recommendations of the Second BSUoS Task Force. The decision on implementing CMP361 was made by Ofgem on the 15th December 2022.

The decision was made to implement WACM3 (Workgroup Alternative CUSC Modification) from the 1st April 2023. WACM3 fixed BSUoS for 6 months with 9 months' notice and defined that there would be no BSUoS fund to support the tariff.

Final BSUoS tariffs for Apr 2023 to Sep 2023 (Fixed Tariff 1) and Oct 2023 to Apr 2024 (Fixed Tariff 2) were published at the end of January 2023.

Final BSUoS tariff for Apr 2024 to Sep 2024 (Fixed Tariff 3) was published at the end of June 2023.

**Webinar – 11th January**

We will be running a webinar on the 11th January to discuss this final and draft tariff and answer any questions that you may have about it.

Click the button below to register for the webinar.

Register for the BSUoS Tariff Webinar Here

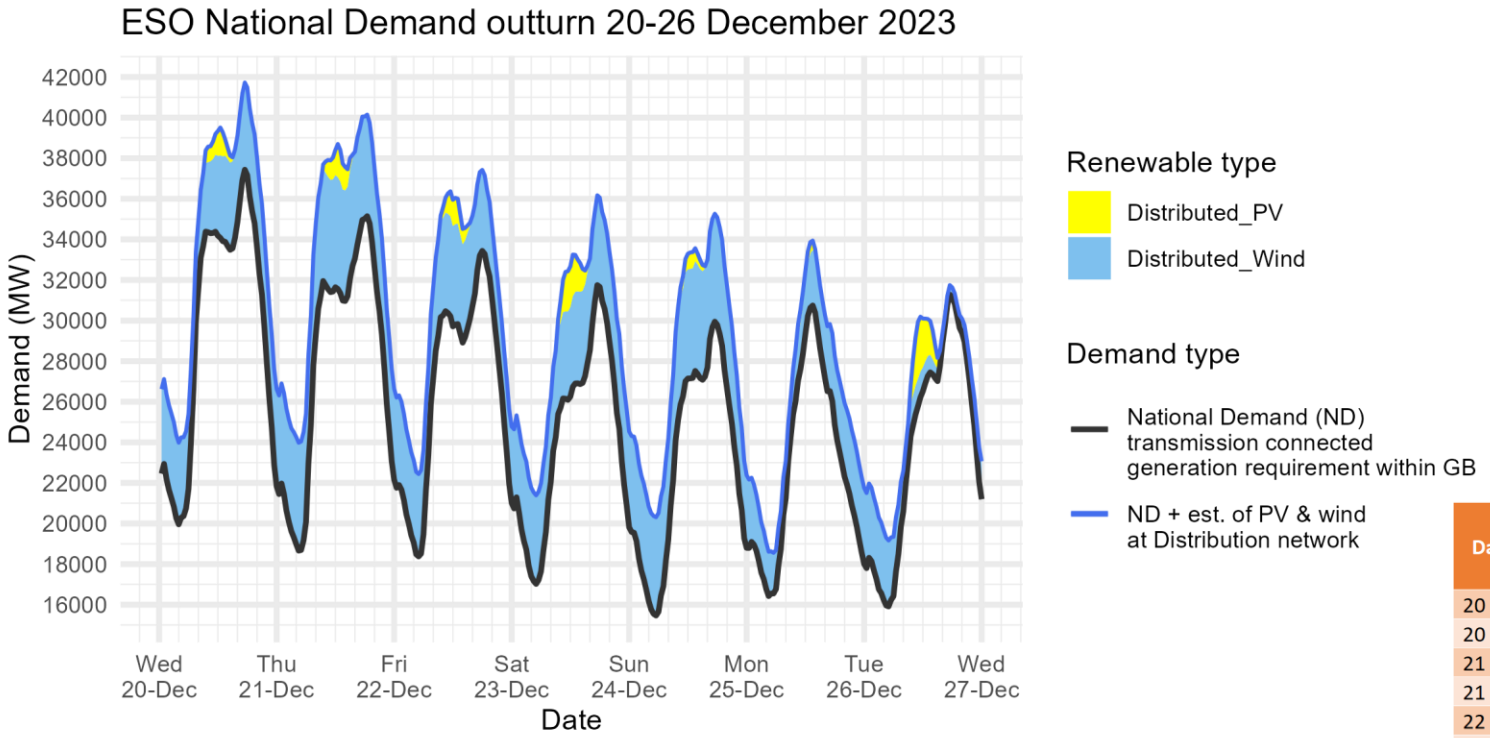
**1. BSUoS Fixed Tariffs Overview/Calculation**

The forecasting model we have developed is used to determine balancing costs for the fixed tariff period ahead. The central forecast number determines the cost that goes into the tariff.

1

- On the 22nd of December we published BSUoS Fixed Tariff 4 and Draft Tariff 5.
  Download Tariff Document
- We are holding a webinar on the 11th January at 2pm to talk through the tariffs and answer any questions from industry.
  Sign up for the webinar
- Each week we publish a report that shows BSUoS Revenue recovery v Costs and forecasts future positions.
  Download the latest report
- We issue comms to industry each time we publish tariffs.
  Sign up to our mailing list here
- For any BSUoS related questions please email us.
  BSUoS.queries@nationalgrideso.com

# Demand | Week-3 demand out-turn




| | | FORECAST (Wed 20 Dec) | | 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) |
| 20 Dec | Overnight Min | 19.9 | 3.9 | 20.0 | n/a | n/a | 4.0 |
| 20 Dec | Evening Peak | 36.7 | 4.3 | 37.4 | 0.0 | 37.4 | 4.3 |
| 21 Dec | Overnight Min | 17.8 | 5.0 | 18.7 | n/a | n/a | 5.3 |
| 21 Dec | Evening Peak | 35.2 | 5.2 | 35.1 | 0.0 | 35.1 | 5.0 |
| 22 Dec | Overnight Min | 17.8 | 4.7 | 18.4 | n/a | n/a | 4.1 |
| 22 Dec | Evening Peak | 34.5 | 4.2 | 33.4 | 0.0 | 33.4 | 4.0 |
| 23 Dec | Overnight Min | 17.2 | 3.9 | 17.0 | n/a | n/a | 4.4 |
| 23 Dec | Evening Peak | 31.5 | 3.7 | 31.7 | 0.0 | 31.7 | 4.4 |
| 24 Dec | Overnight Min | 16.0 | 3.7 | 15.5 | n/a | n/a | 4.8 |
| 24 Dec | Evening Peak | 30.5 | 4.0 | 29.9 | 0.0 | 29.9 | 5.3 |
| 25 Dec | Overnight Min | 15.8 | 3.8 | 16.4 | n/a | n/a | 2.2 |
| 25 Dec | Evening Peak | 26.7 | 3.7 | 26.5 | 0.0 | 26.5 | 3.3 |
| 26 Dec | Overnight Min | 16.7 | 3.1 | 15.9 | n/a | n/a | 3.3 |
| 26 Dec | Evening Peak | 29.5 | 3.1 | 31.3 | 0.0 | 31.3 | 0.5 |

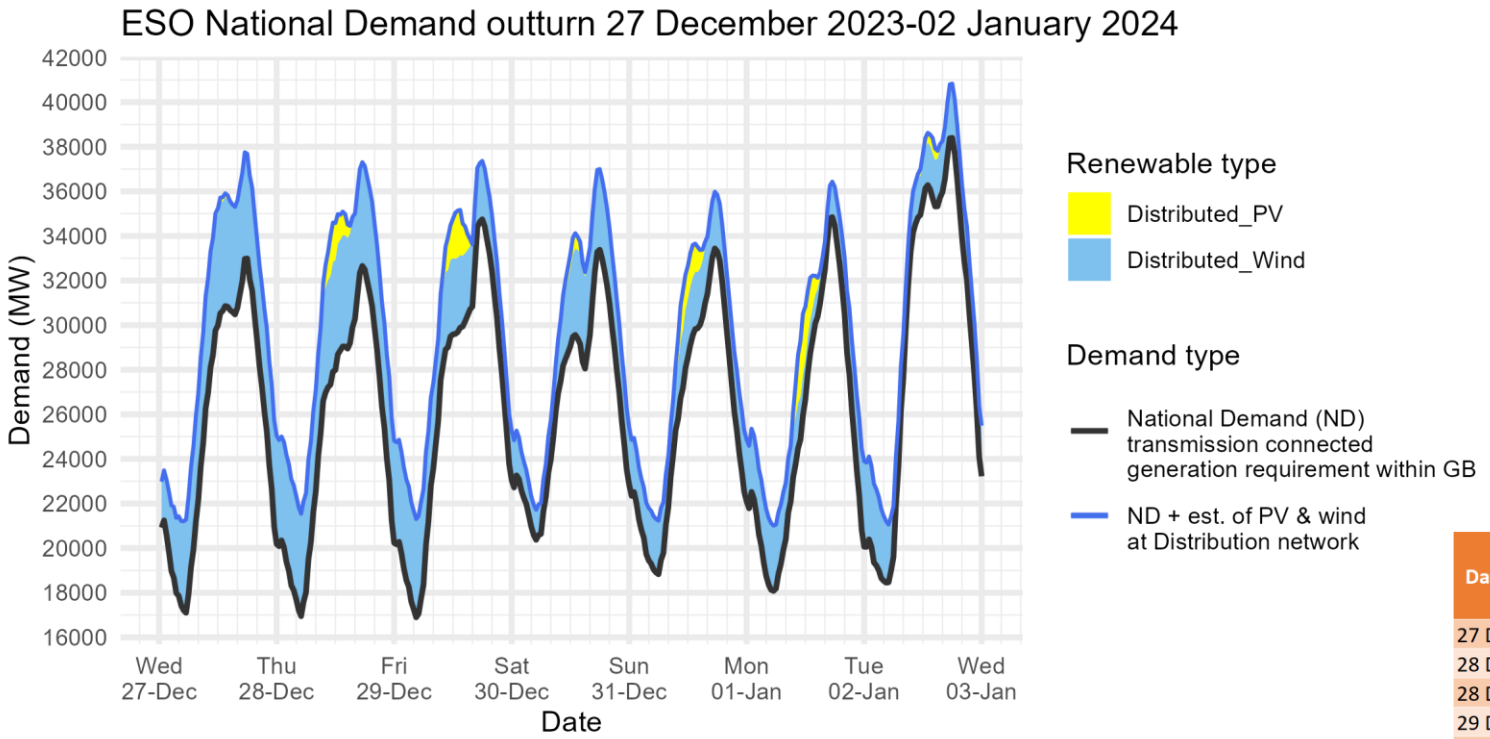
The black line (National Demand ND) is the measure of portion of total GB customer demand that is supplied by the transmission network.

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-2 demand out-turn




| | | FORECAST (Wed 27 Dec) | | 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 |
| 27 Dec | Evening Peak | 32.9 | 4.5 | 33.0 | 0.0 | 33.0 | 4.7 |
| 28 Dec | Overnight Min | 17 | 4.5 | 16.9 | 0.0 | 16.9 | 4.6 |
| 28 Dec | Evening Peak | 32.9 | 4.4 | 32.7 | 0.0 | 32.7 | 4.7 |
| 29 Dec | Overnight Min | 17.4 | 4.3 | 16.9 | 0.0 | 16.9 | 4.4 |
| 29 Dec | Evening Peak | 34.3 | 3.3 | 34.7 | 0.0 | 34.7 | 2.6 |
| 30 Dec | Overnight Min | 19.7 | 1.8 | 20.4 | 0.0 | 20.4 | 1.3 |
| 30 Dec | Evening Peak | 31.8 | 4.3 | 33.4 | 0.0 | 33.4 | 3.6 |
| 31 Dec | Overnight Min | 17 | 3.9 | 18.8 | 0.0 | 18.8 | 2.4 |
| 31 Dec | Evening Peak | 33.7 | 3.5 | 33.4 | 0.0 | 33.4 | 2.5 |
| 01 Jan | Overnight Min | 18.6 | 3.1 | 18.1 | 0.0 | 18.1 | 2.9 |
| 01 Jan | Evening Peak | 36.1 | 2.1 | 34.8 | 0.0 | 34.8 | 1.6 |
| 02 Jan | Overnight Min | 20.6 | 2.0 | 18.5 | 0.0 | 18.5 | 2.8 |
| 02 Jan | Evening Peak | 39.3 | 2.0 | 38.4 | 0.0 | 38.4 | 2.4 |

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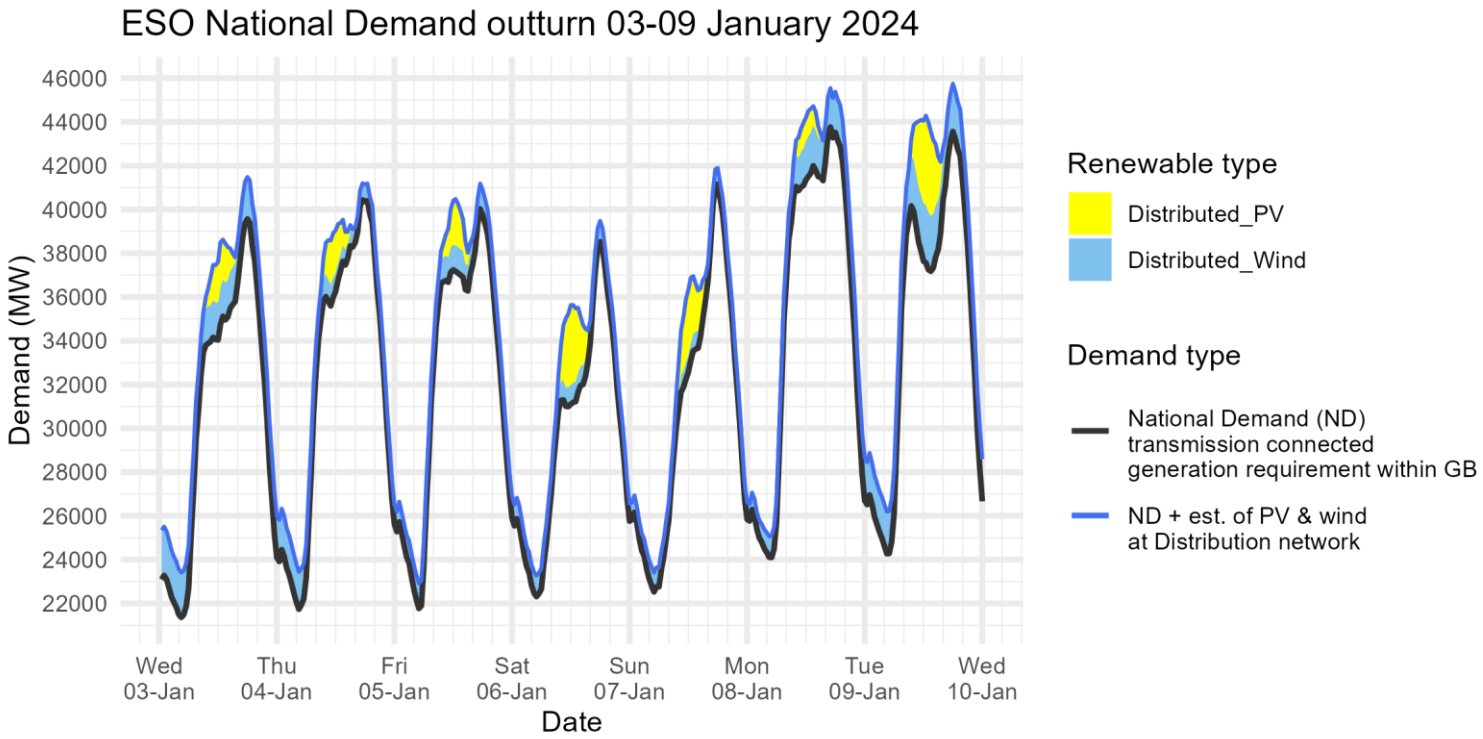
# Demand | Last week demand out-turn

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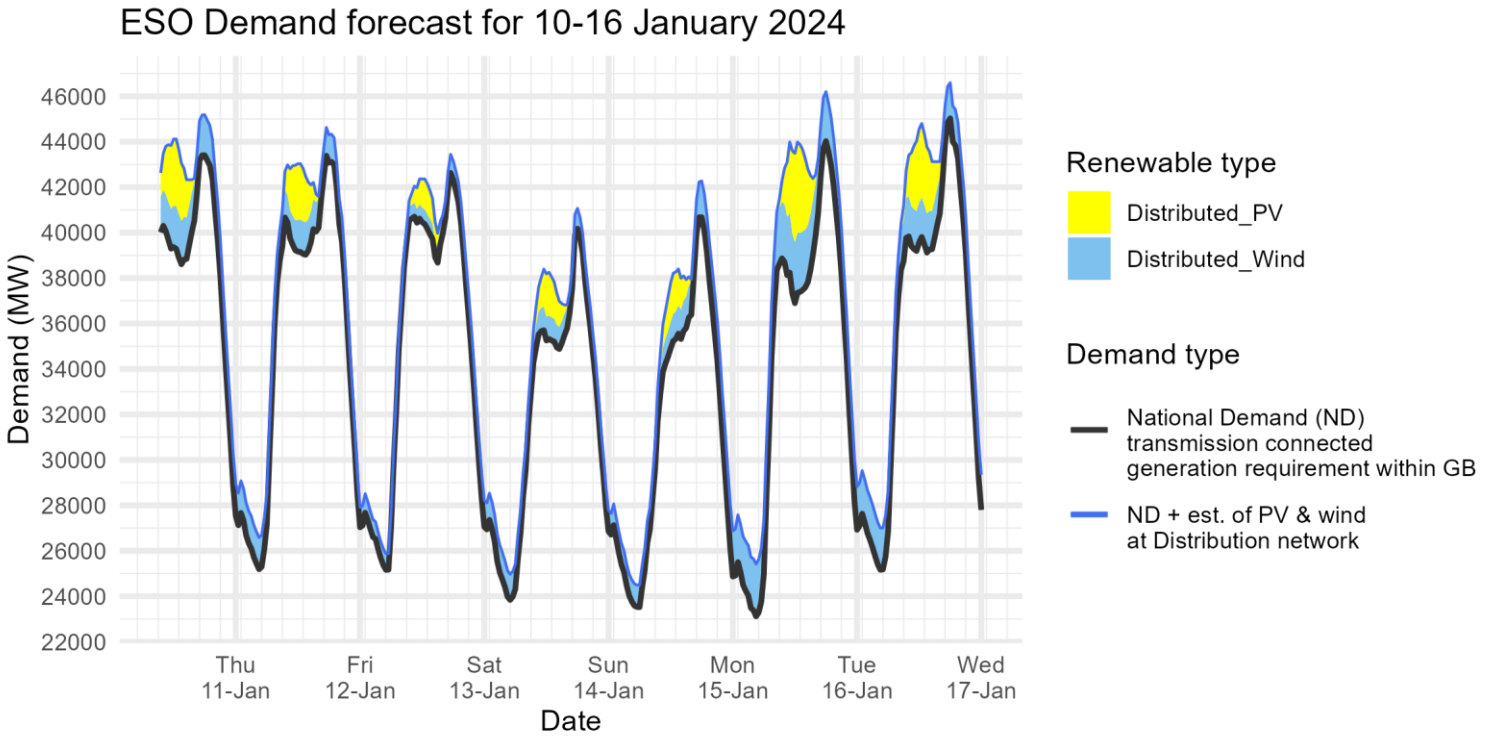
Historic out-turn data can be found on the ESO Data Portal in the following data sets: Historic Demand Data & Demand Data Update

| | | FORECAST (Wed 03 Jan) | | 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) |
| 03 Jan | Evening Peak | 39.2 | 1.9 | 39.6 | 0.0 | 39.6 | 1.9 |
| 04 Jan | Overnight Min | 22.2 | 1.9 | 21.7 | n/a | n/a | 1.7 |
| 04 Jan | Evening Peak | 41.2 | 0.8 | 40.4 | 0.0 | 40.4 | 0.8 |
| 05 Jan | Overnight Min | 24.2 | 0.7 | 21.8 | n/a | n/a | 1.2 |
| 05 Jan | Evening Peak | 40.6 | 1.1 | 40.0 | 0.0 | 40.0 | 1.2 |
| 06 Jan | Overnight Min | 22.8 | 1.2 | 22.3 | n/a | n/a | 1.0 |
| 06 Jan | Evening Peak | 37.8 | 1.0 | 38.5 | 0.0 | 38.5 | 0.9 |
| 07 Jan | Overnight Min | 22.8 | 0.9 | 22.5 | n/a | n/a | 0.9 |
| 07 Jan | Evening Peak | 39.9 | 0.9 | 41.2 | 0.0 | 41.2 | 0.7 |
| 08 Jan | Overnight Min | 24.2 | 1.0 | 24.1 | n/a | n/a | 1.0 |
| 08 Jan | Evening Peak | 44.1 | 1.1 | 43.8 | 0.7 | 44.5 | 1.8 |
| 09 Jan | Overnight Min | 25.4 | 1.0 | 24.3 | n/a | n/a | 1.9 |
| 09 Jan | Evening Peak | 44.4 | 1.1 | 43.6 | 0.7 | 44.3 | 2.2 |

# Demand | Week Ahead




| | | FORECAST (Wed 10 Jan) | |
|---|---|---|---|
| Date | Forecasting Point | National Demand (GW) | Dist. wind (GW) |
| 10 Jan 2024 | Evening Peak | 43.4 | 1.8 |
| 11 Jan 2024 | Overnight Min | 25.2 | 1.4 |
| 11 Jan 2024 | Evening Peak | 43.4 | 1.2 |
| 12 Jan 2024 | Overnight Min | 25.2 | 0.7 |
| 12 Jan 2024 | Evening Peak | 42.6 | 0.8 |
| 13 Jan 2024 | Overnight Min | 23.8 | 1.1 |
| 13 Jan 2024 | Evening Peak | 40.2 | 0.9 |
| 14 Jan 2024 | Overnight Min | 23.5 | 1.0 |
| 14 Jan 2024 | Evening Peak | 40.7 | 1.6 |
| 15 Jan 2024 | Overnight Min | 23.1 | 2.3 |
| 15 Jan 2024 | Evening Peak | 44.0 | 2.2 |
| 16 Jan 2024 | Overnight Min | 25.2 | 1.8 |
| 16 Jan 2024 | Evening Peak | 45.0 | 1.6 |

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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 10th January 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.

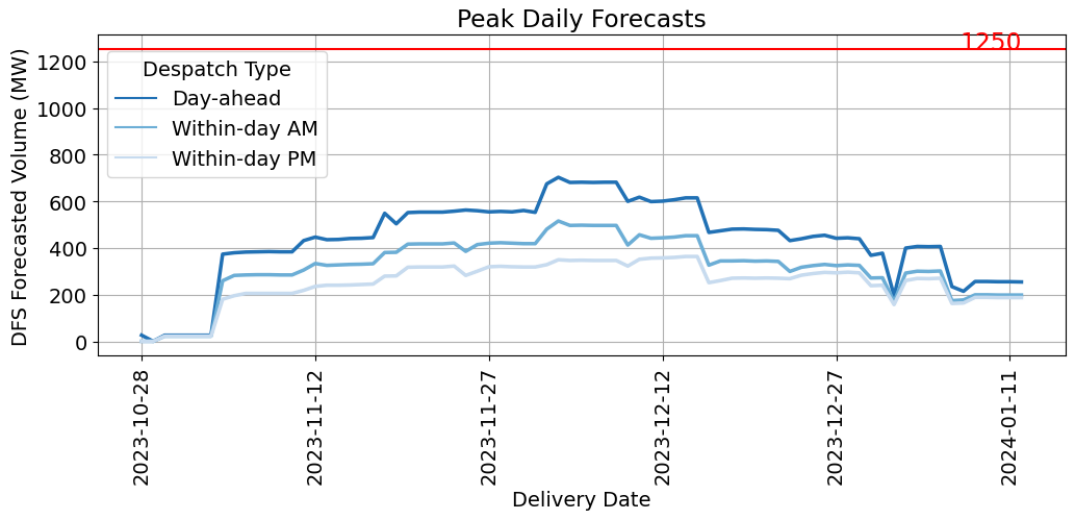
For lower (and potentially negative) surplus values, then this indicates operational margins could be tight and that there is a higher likelihood of the ESO needing to use its tools, such as issuing margins notices. We expect there to be sufficient supply available to respond to these signals to meet 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 | 11/01/2024 | 43335 | 7380 | 3370 | 43970 | 5890 |
| Fri | 12/01/2024 | 43329 | 3670 | 3370 | 43280 | 2900 |
| Sat | 13/01/2024 | 41064 | 4320 | 3370 | 40840 | 3840 |
| Sun | 14/01/2024 | 42419 | 8750 | 3370 | 41270 | 9040 |
| Mon | 15/01/2024 | 42524 | 13010 | 3370 | 44000 | 10400 |
| Tue | 16/01/2024 | 42986 | 9070 | 3370 | 44470 | 6720 |
| Wed | 17/01/2024 | 43995 | 7860 | 3370 | 44840 | 6130 |

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

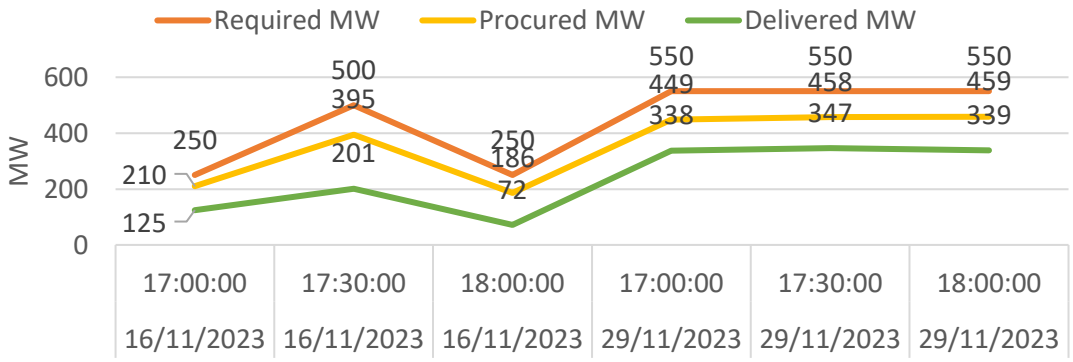
# Demand Flexibility Service

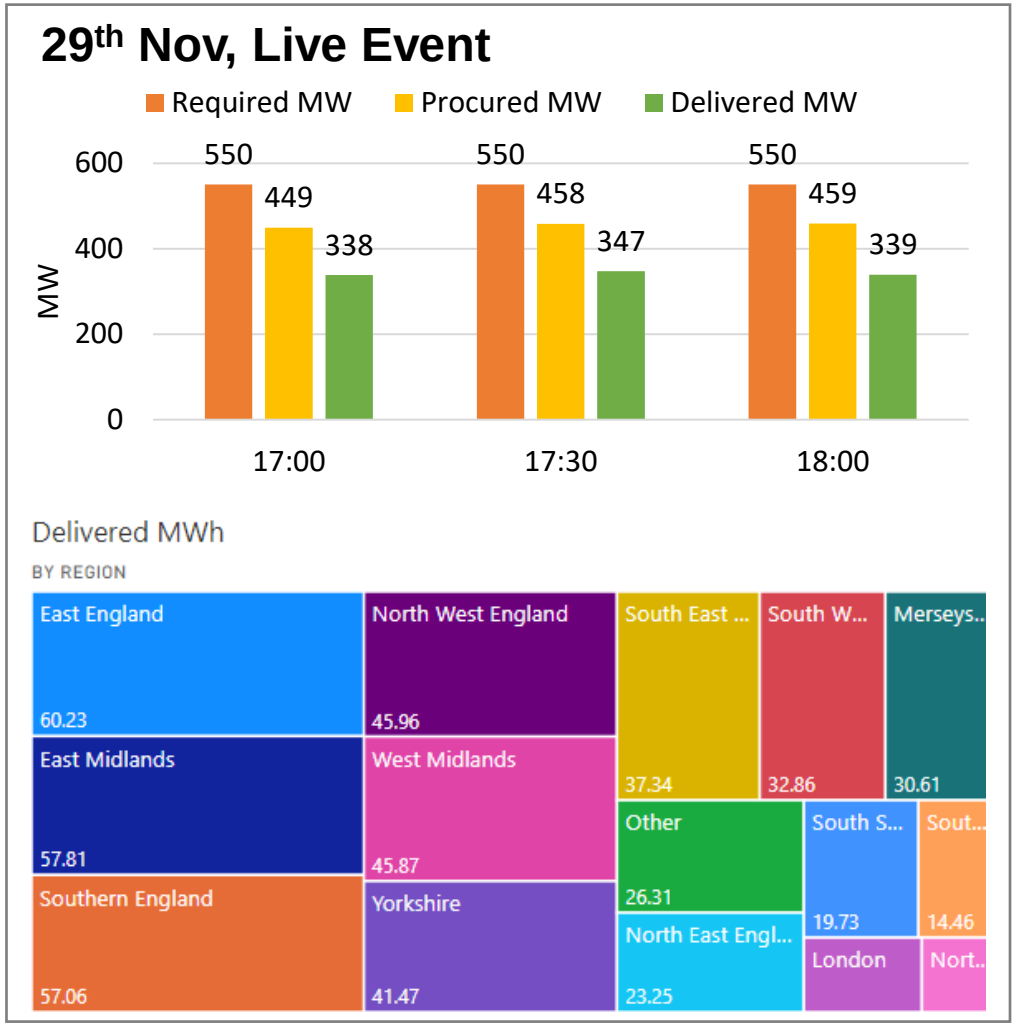



**Latest events:**

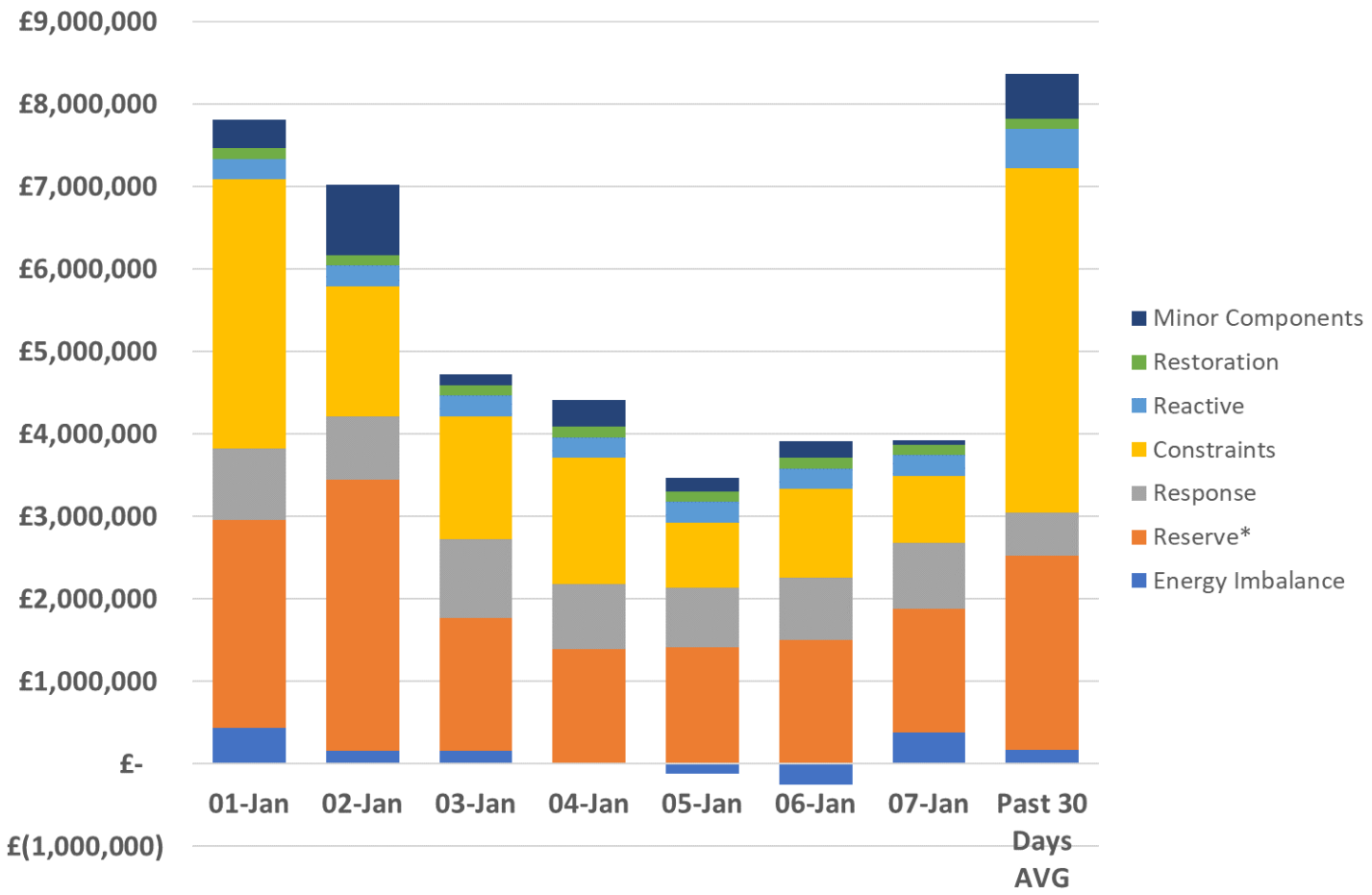
No events last week

## Previous events:



# ESO Actions | Category costs breakdown for the last week



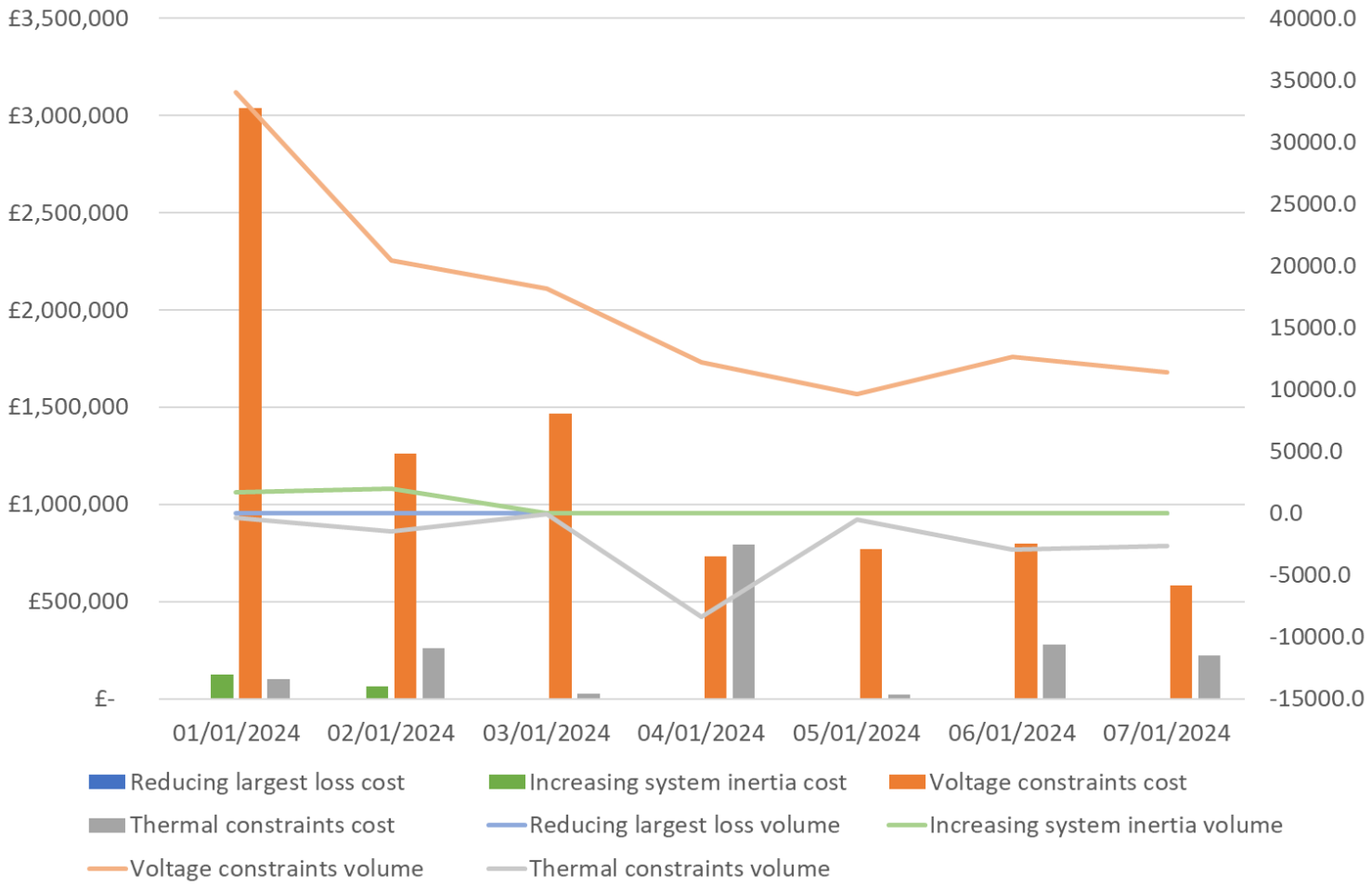

| Date | Total (£m) |
|---|---|
| 01/01/2024 | 7.8 |
| 02/01/2024 | 7.0 |
| 03/01/2024 | 4.7 |
| 04/01/2024 | 4.4 |
| 05/01/2024 | 3.3 |
| 06/01/2024 | 3.7 |
| 07/01/2024 | 3.9 |
| Weekly Total | 34.9 |
| Previous Week | 64.7 |

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



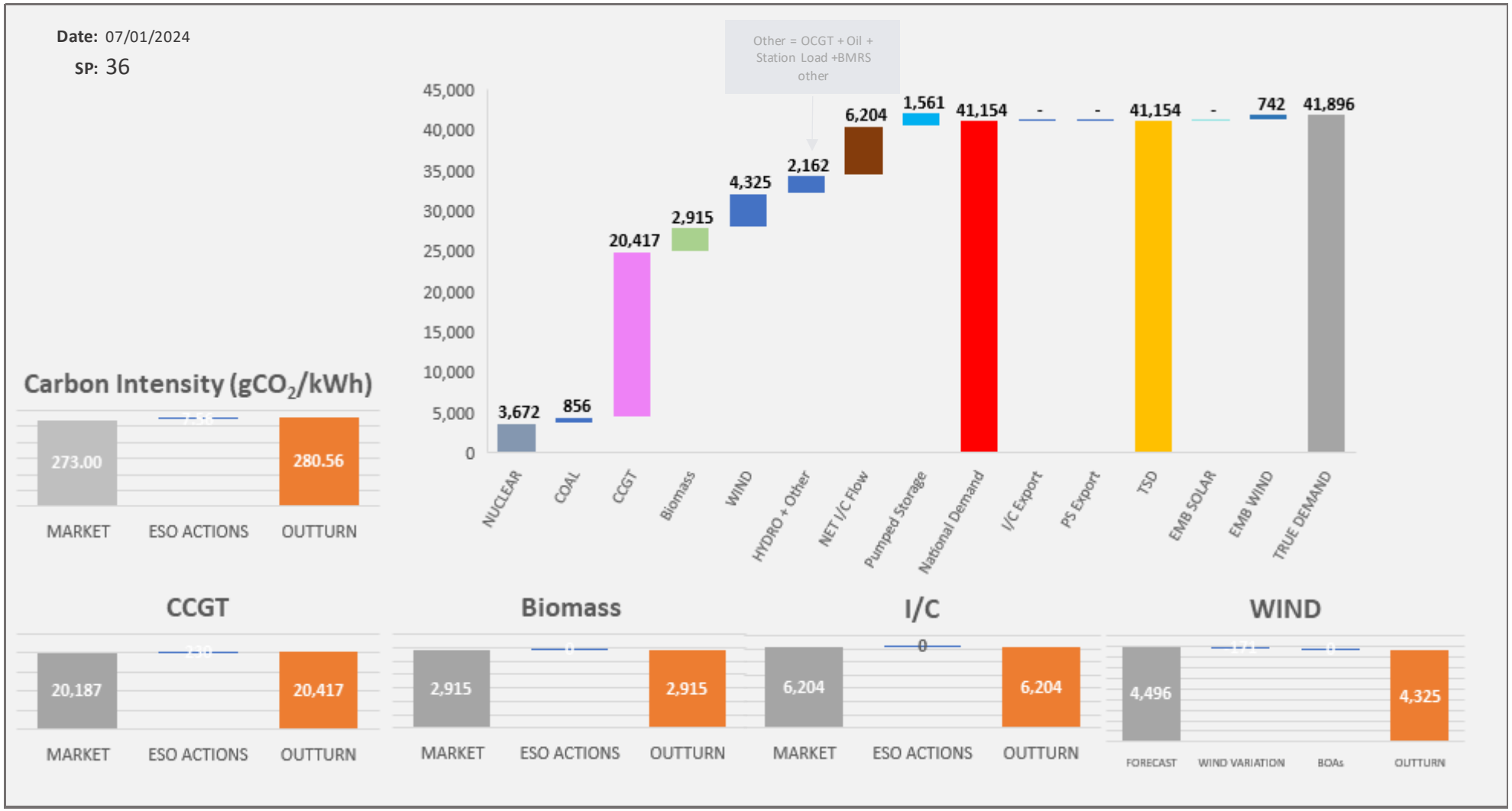

**Thermal – network congestion**
Actions were required to manage thermal constraints throughout the week, with the most significant costs on Thursday.

**Voltage**
Intervention was required to manage voltage levels throughout the week, with the most significant costs on Monday.

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

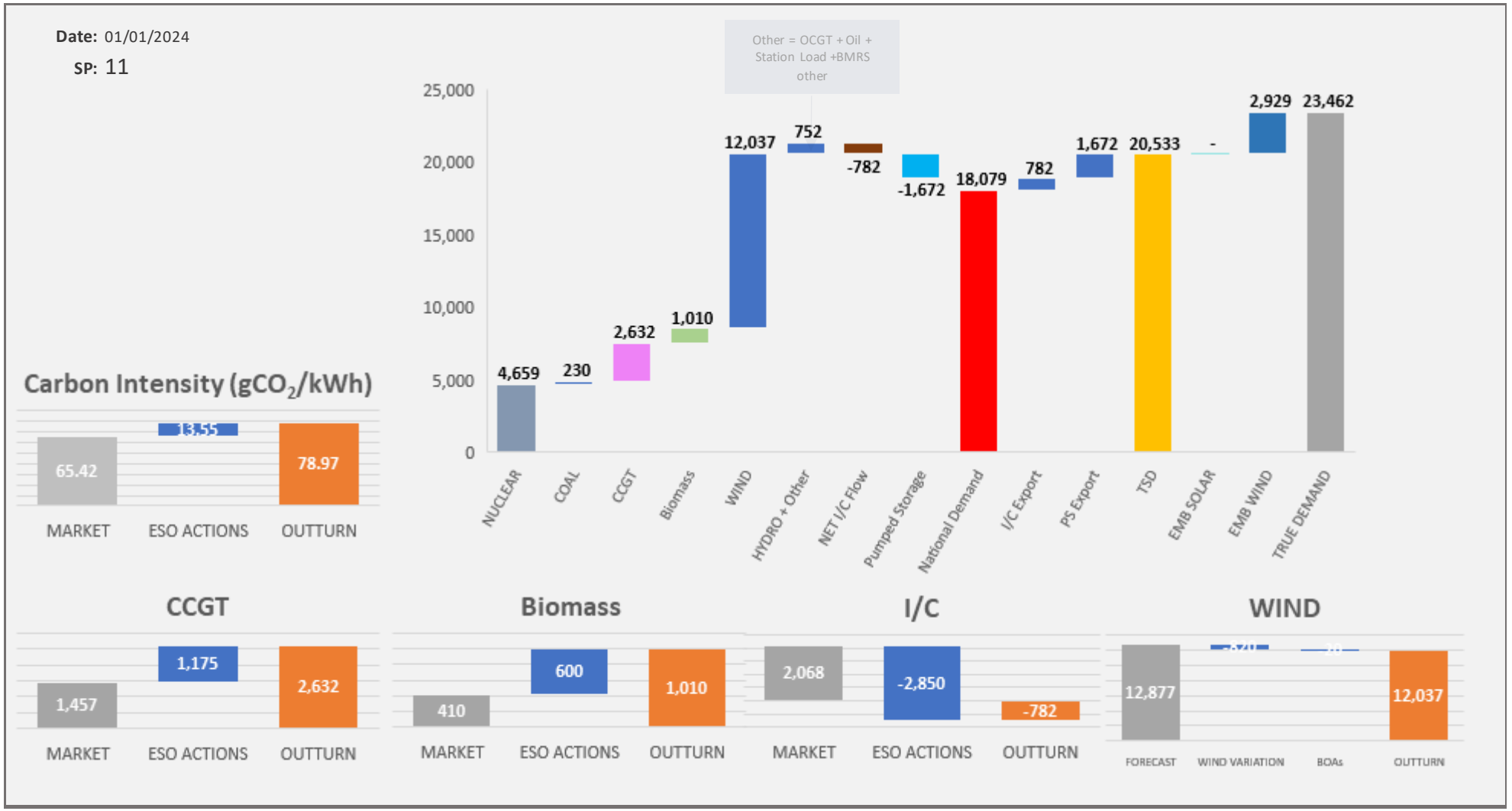
**Increasing inertia**
Intervention was required to manage System Inertia on Monday & Tuesday.

# ESO Actions | Sunday 07 January – Peak Demand – SP spend ~£49k



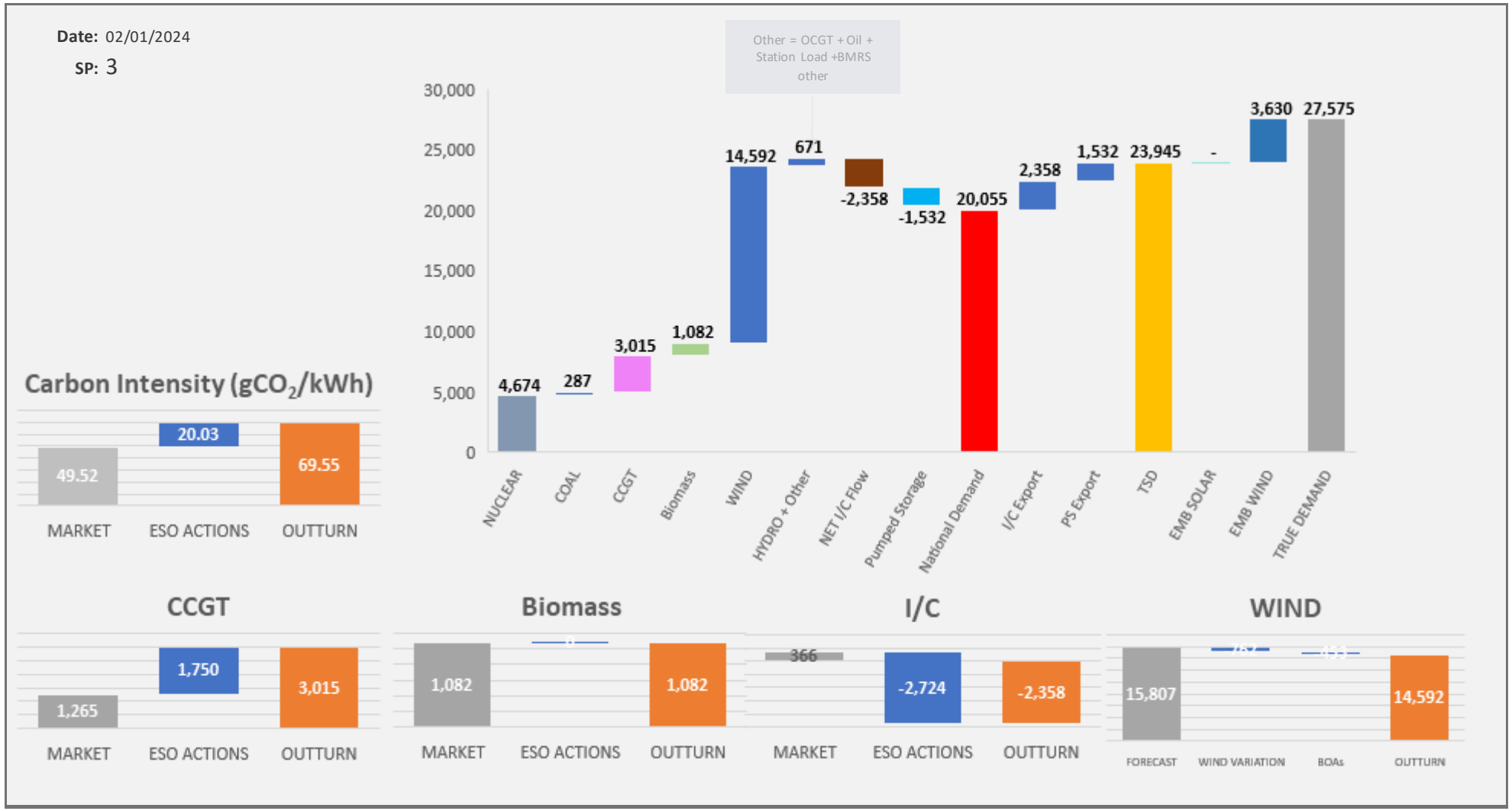

Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

# ESO Actions | Monday 01 January – Minimum Demand – SP Spend ~£195k



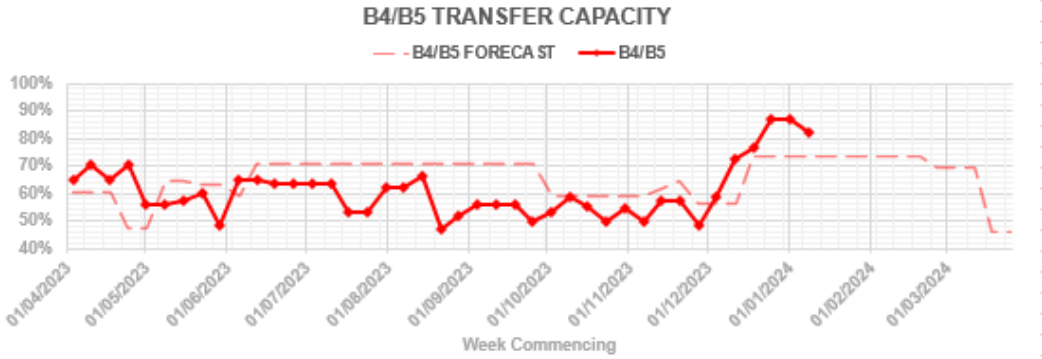

Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

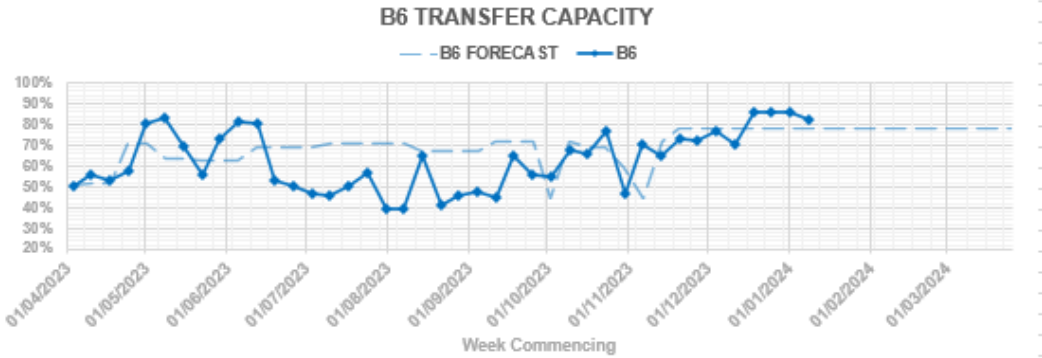
# ESO Actions | Tuesday 02 January – Highest SP Spend ~£360k

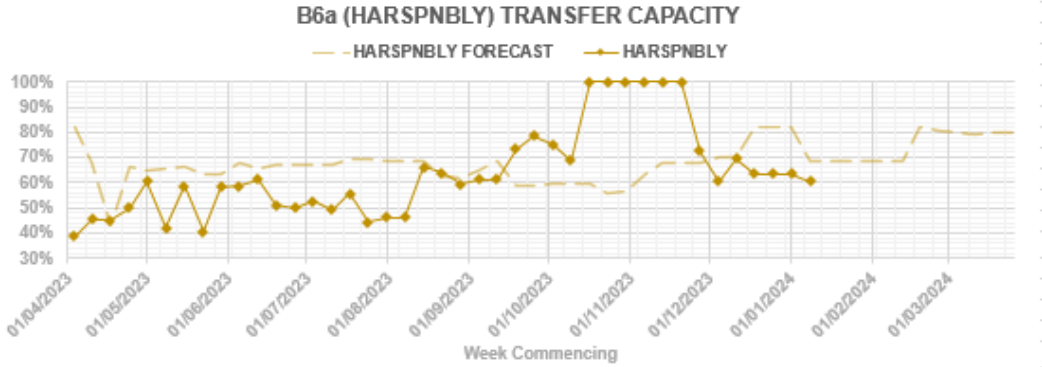



Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

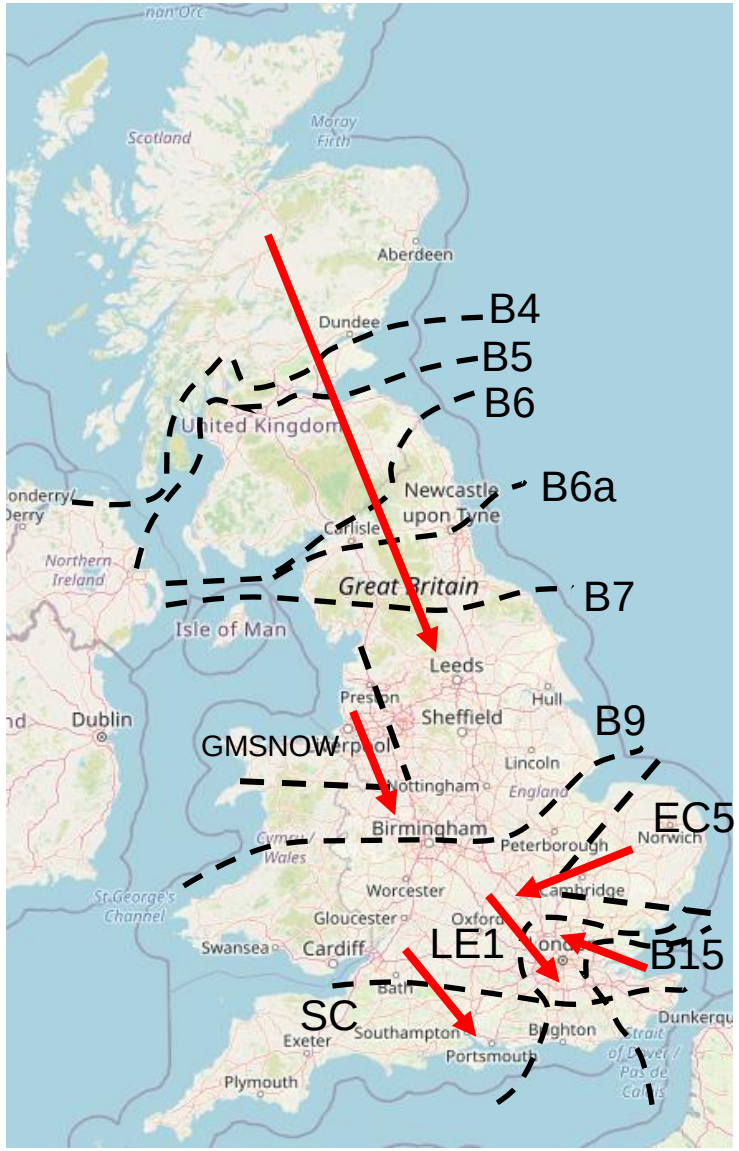
# Transparency | Network Congestion



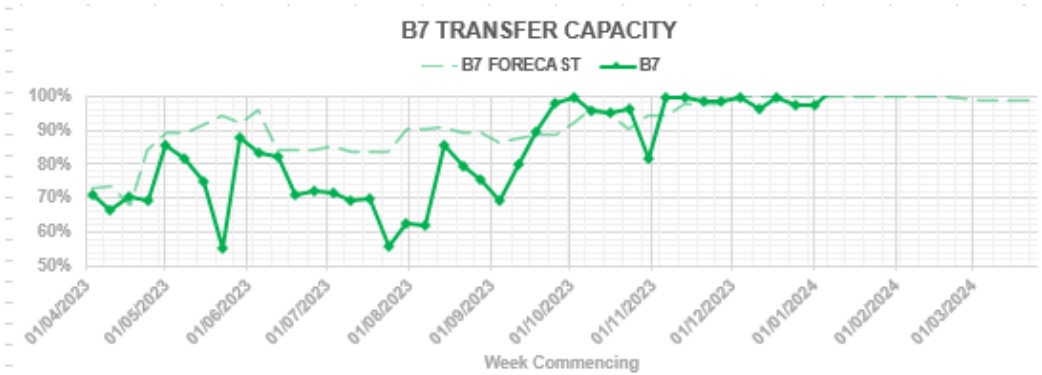



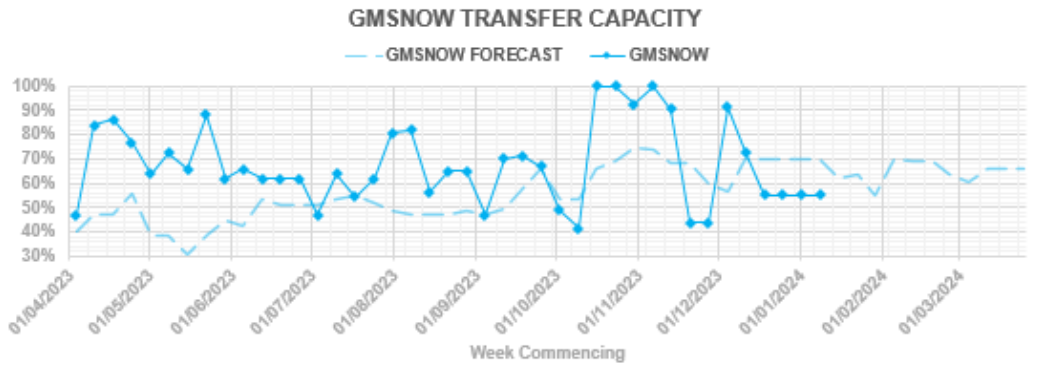

| Boundary | Max. Capacity (MW) |
|---|---|
| B4/B5 | 3400 |
| B6 | 6800 |
| B6a | 8000 |
| B7 | 8325 |
| GMSNOW | 4700 |
| B9 | 10600 |
| EC5 | 5000 |
| LE1 | 8500 |
| B15 | 7500 |
| SC | 7300 |

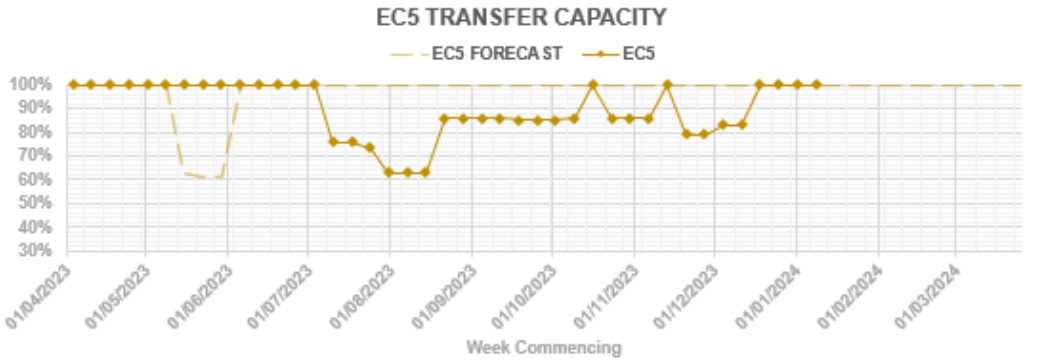



Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
https://data.nationalgrideso.com/data-groups/constraint-management

# Transparency | Network Congestion




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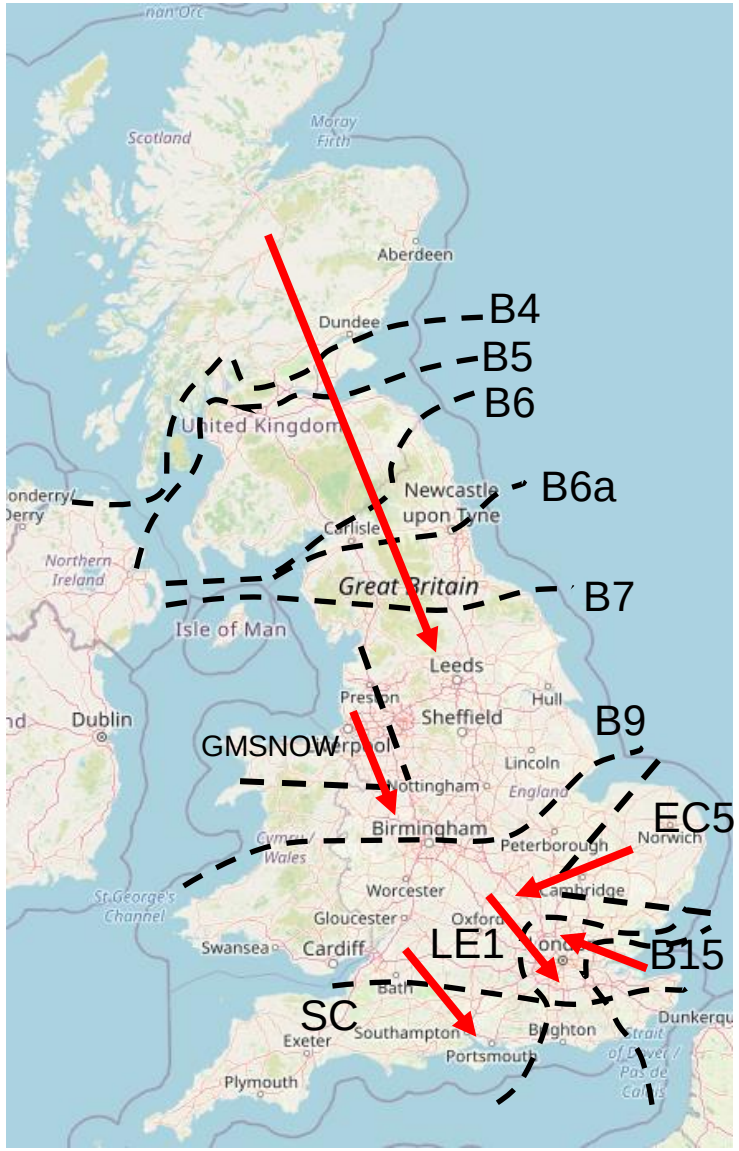
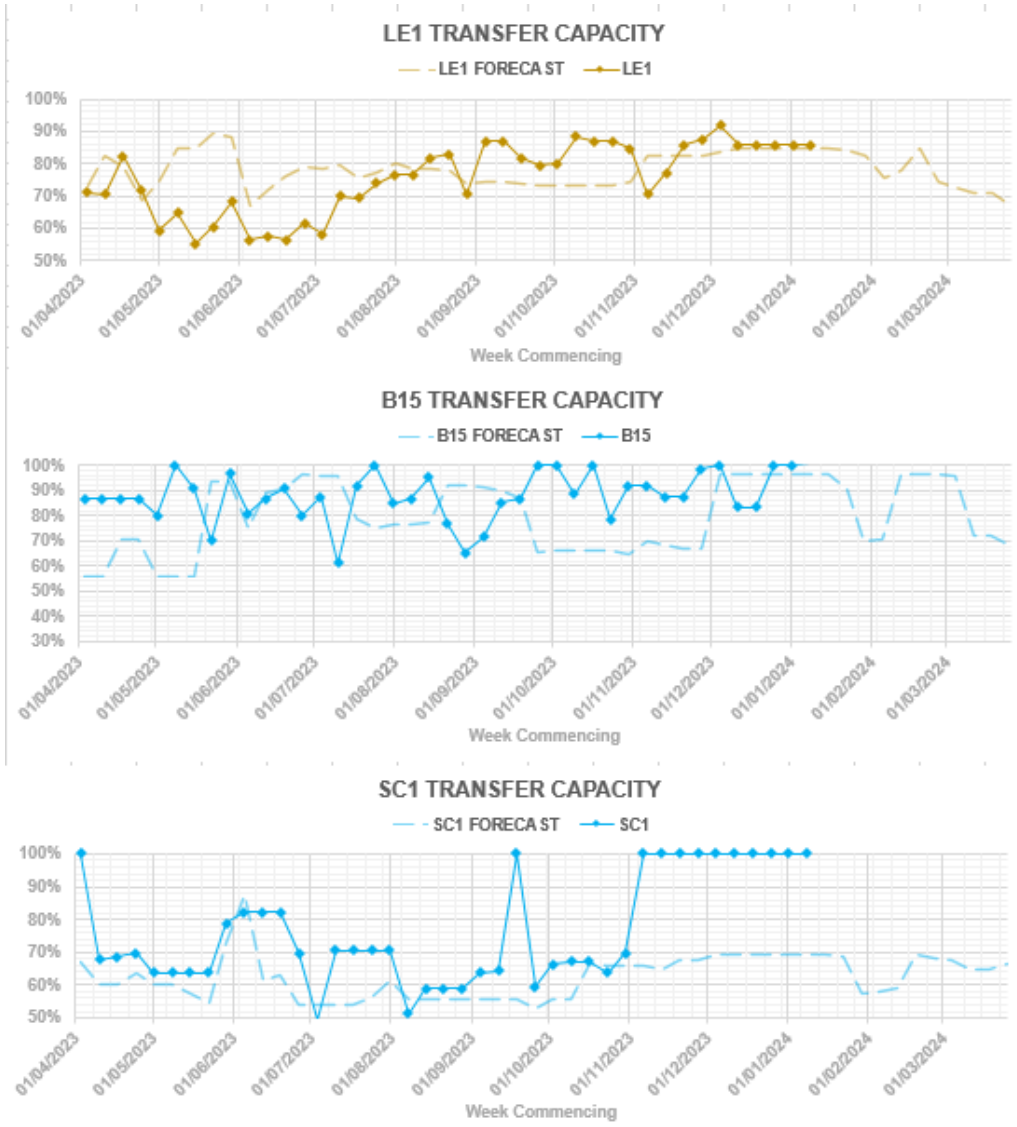
| SC | 7300 |




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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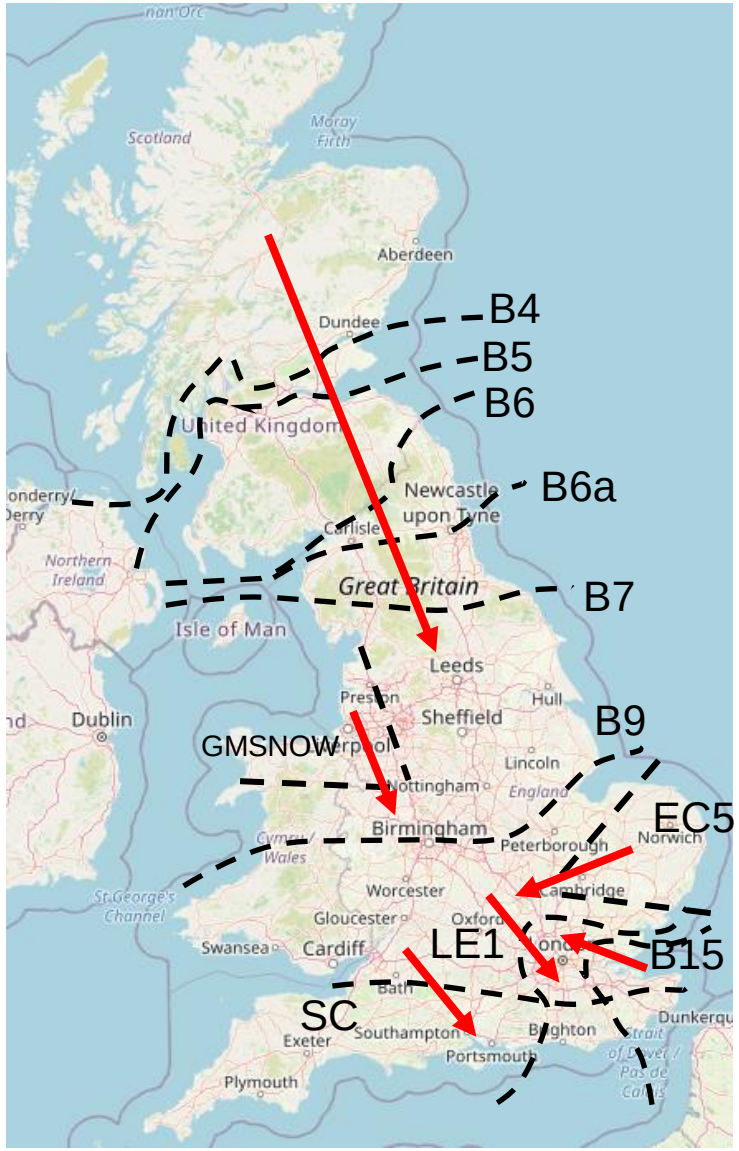


Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
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# Previously Asked Questions

Q: It's good to see the roll-out of the enhanced BMU platform capturing DG and DSR. Are any Voltage reduction trials planned next year with DNOs? this enhanced visibility for trial may provide good insight on load modelling- this in turn supporting a range of voltage control and stability analysis.

A: We have no voltage reduction trials planned with the DNOs in the immediate future. If trials are scheduled we will share this information and relevant insights learned with industry through the usual channels.

Q: Would it be possible please to add an additional column to the interconnector constraint table on the "Transparency | Network Congestion" slide to express the available constrained capacity as percentage of the full, un-constrained capacity?

A: Thank you for this feedback, we've passed it onto the team who produce the Network Congestion slides for the OTF and will also include this feedback in our wrap up of the recent OTF survey.

# Advance Question

Q: re Manifest Error - if the raising party doesn't do so within 4 hours of the event then the Manifest Error claim won't qualify. Did NG ESO raise the mentioned BOA within BSC timescales?

Q: For an erroneous BOA to go through the Manifest Error process, the claim of ME needs to be raised within 4 hours of the instruction being issued. Such a claim is normally announced to the wider market via a message published on the System Warnings page of BMRS. There is no such ME message visible on 14th Dec on BMRS  Is this because NGESO didn't raise a ME for the BOA, or was the message not sent to BMRS by NGESO?

A: We raised a Manifest Error for the BOA on 14th December and have completed the post event process. No message was sent to BMRS – we are investigating why this didn't happen.

# Outstanding questions

Q: Does INDO (used to determine Triads) exclude Battery Storage? The Elexon Glossary doesn't specify it, but it seems reasonable given Pumped Storage is excluded.

INDO (Initial National Demand Out-Turn) is a term defined in the BSC. The glossary definition referred to in the question is provided at this link. Glossary Term: Initial National Demand Out-Turn - Elexon BSC

Q: Last week the control room turned off some wind units (non SO-flagged) at -40 £/MW in the middle of the day when there were over 5GW of bids in the stack at ~0£/MW. Quite clearly this activity wasn't for energy balancing. What can be done to make these decisions more predictable for the market?

*We are still working on these questions and we will aim to provide an answer to the OTF as soon as possible.*

# 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

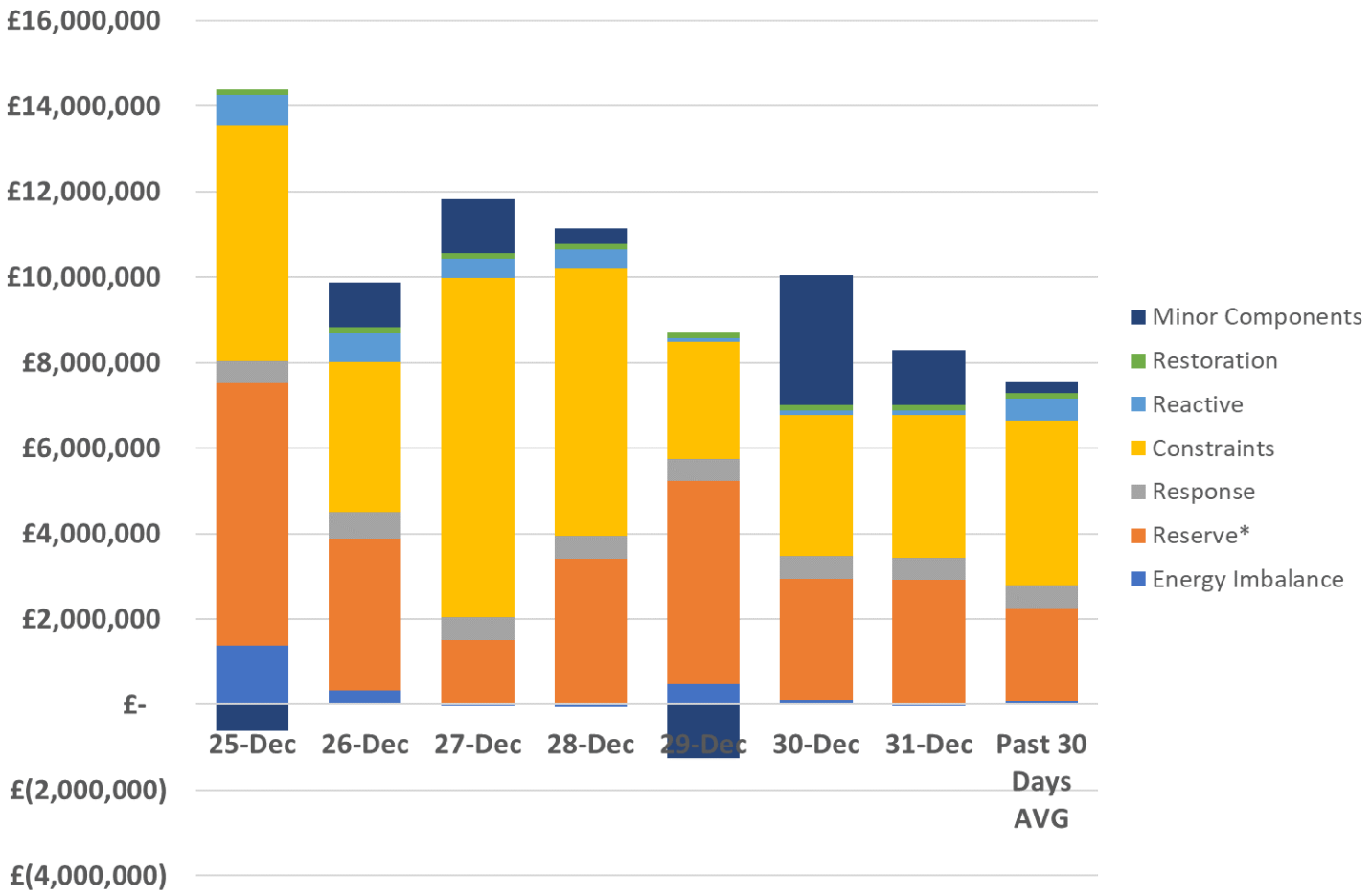
Please remember to use the feedback poll in sli.do after the event.

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

# ESO Actions | Category costs breakdown for the last week



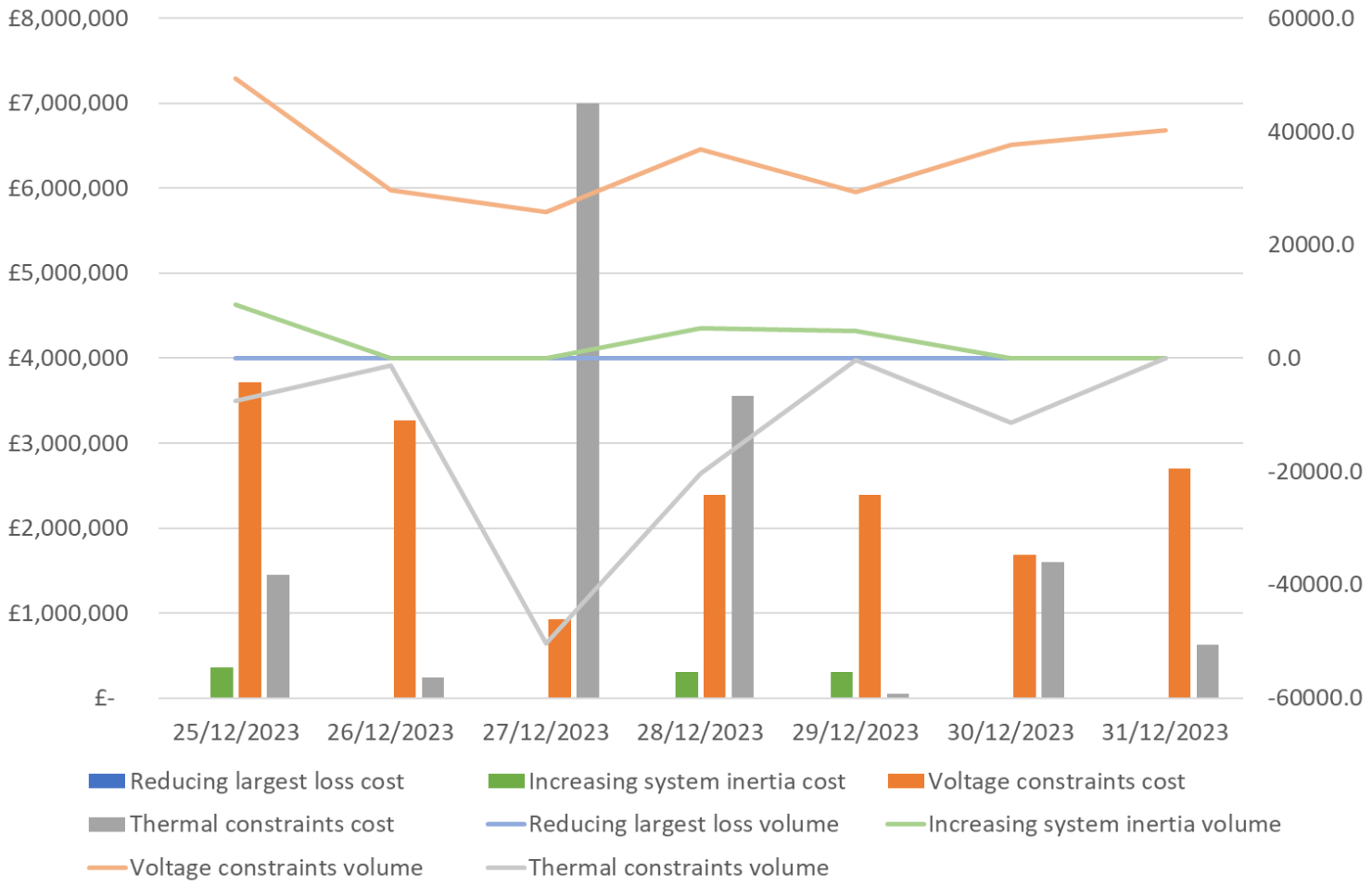

| Date | Total (£m) |
|---|---|
| 25/12/2023 | 13.8 |
| 26/12/2023 | 9.9 |
| 27/12/2023 | 11.8 |
| 28/12/2023 | 11.1 |
| 29/12/2023 | 7.5 |
| 30/12/2023 | 10.0 |
| 31/12/2023 | 8.2 |
| Weekly Total | 72.3 |
| Previous Week | 80.7 |

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



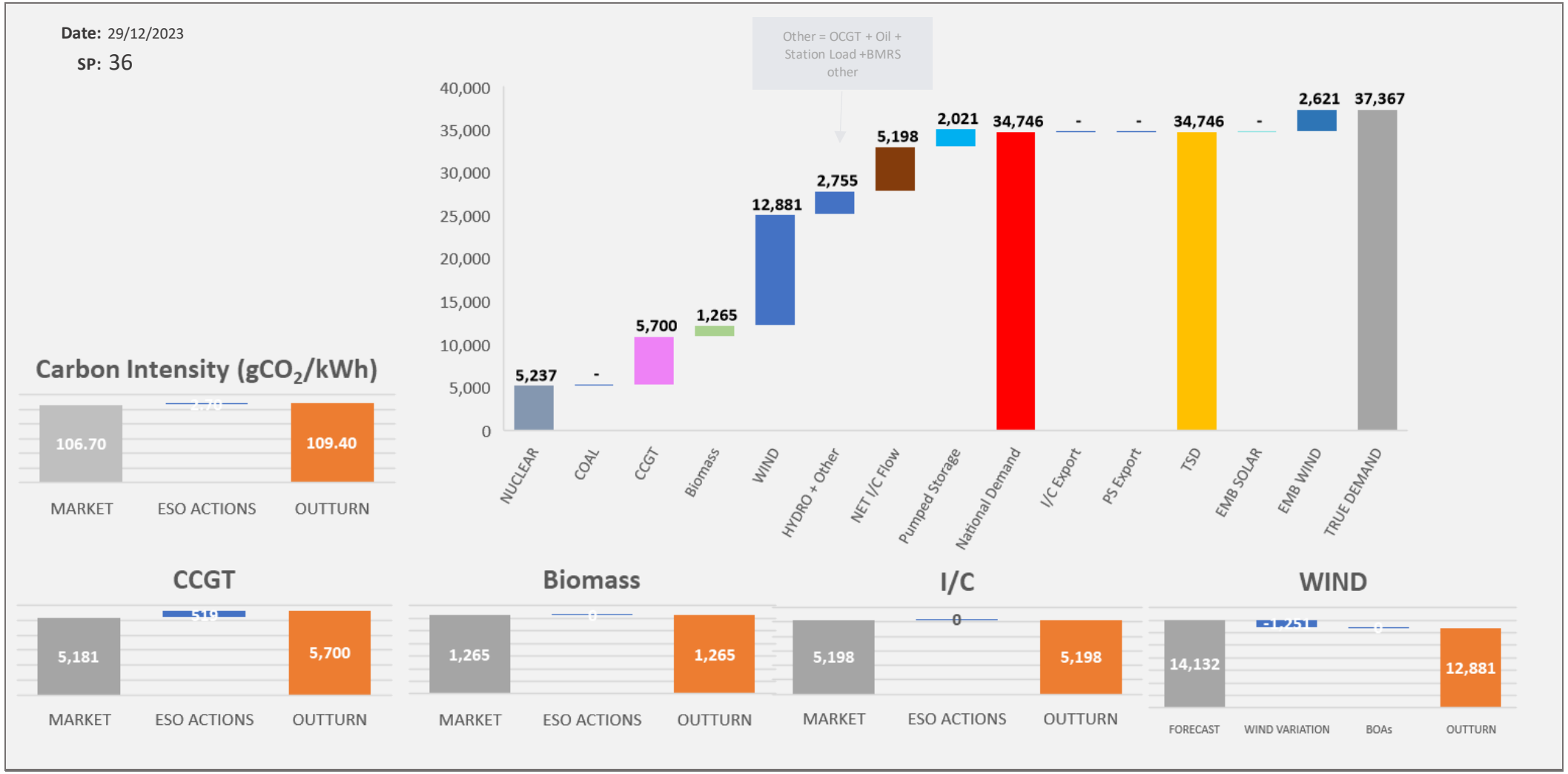

**Thermal – network congestion**
Actions were required to manage thermal constraints throughout the week with the most significant cost on Wednesday.

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

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

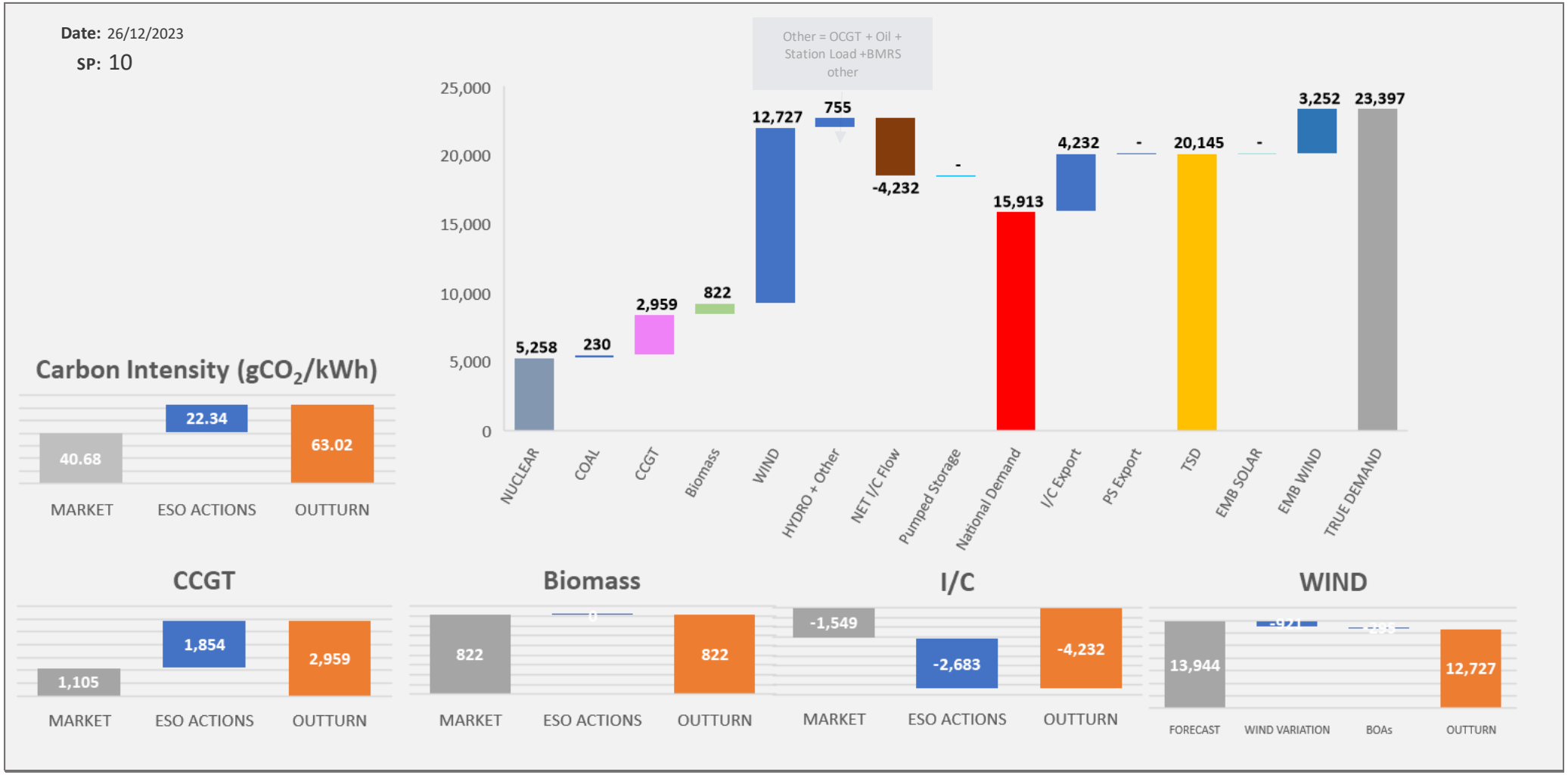
**Increasing inertia**
Intervention was required to manage System Inertia on Monday, Thursday and Friday.

# ESO Actions | Friday 29 December – Peak Demand – SP spend ~£44k



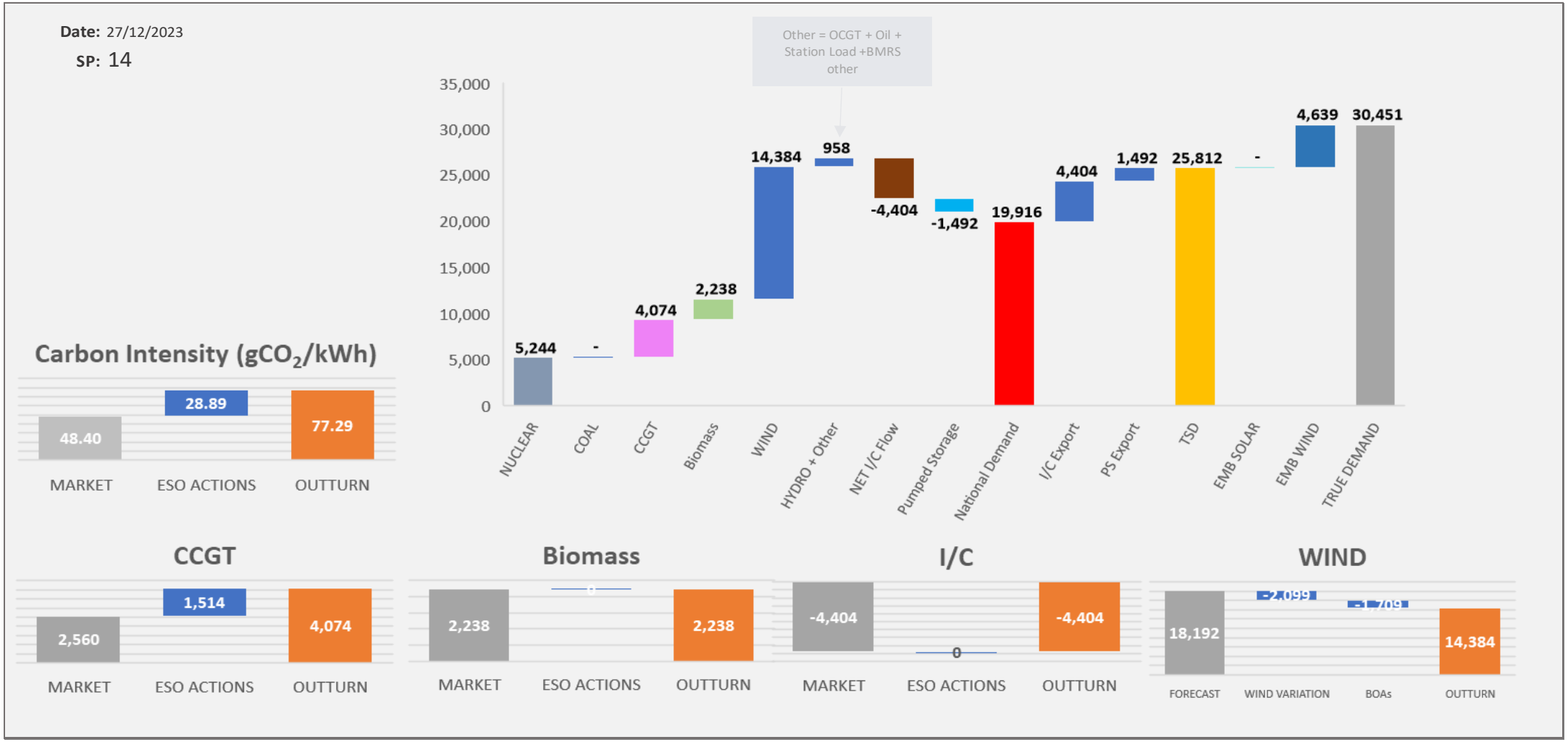

Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

# ESO Actions | Tuesday 26 December – Minimum Demand – SP Spend ~£273k




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

# ESO Actions | Wednesday 27 December – Highest SP Spend ~£373k

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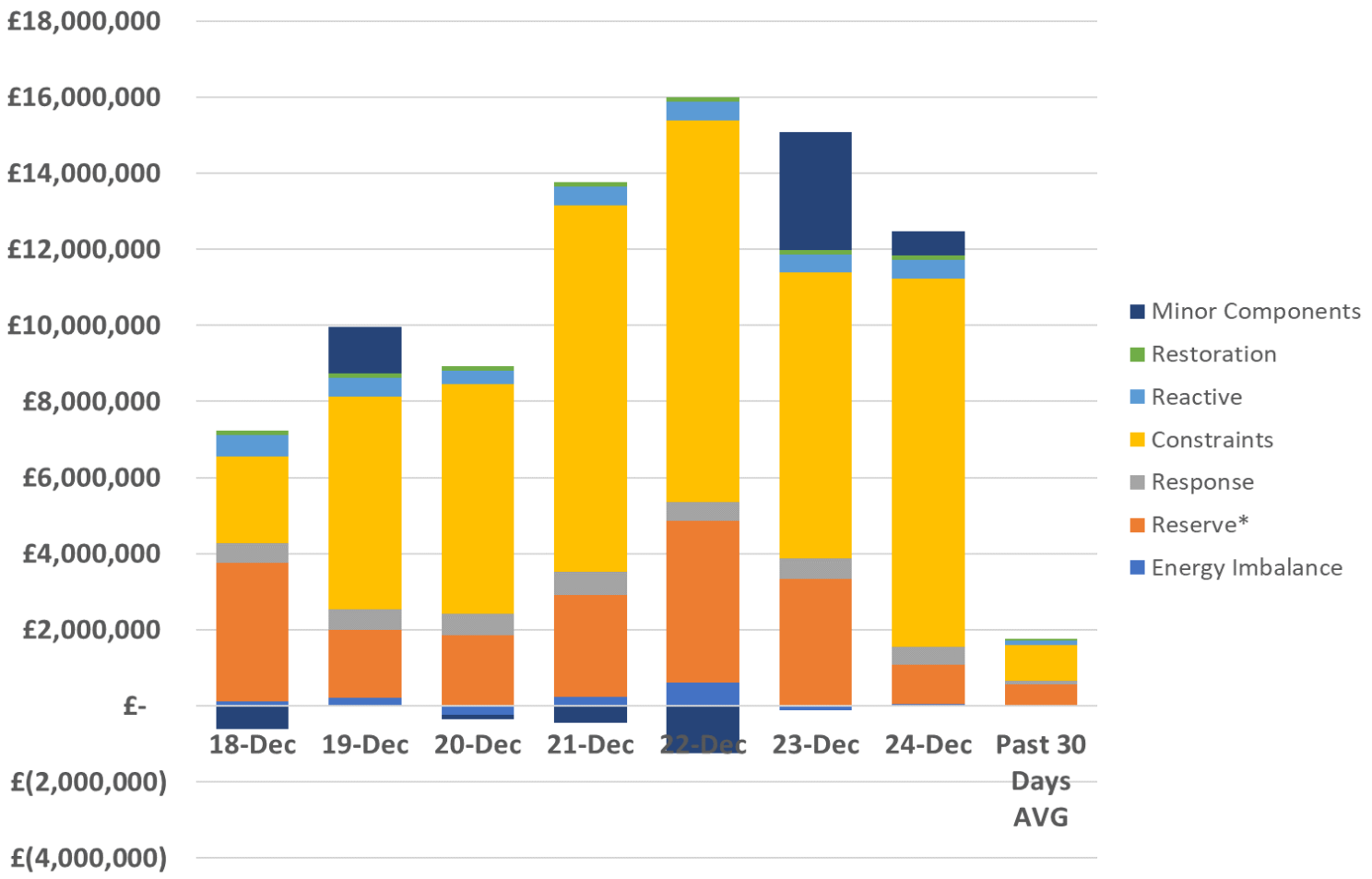
# ESO Actions | Category costs breakdown for the last week



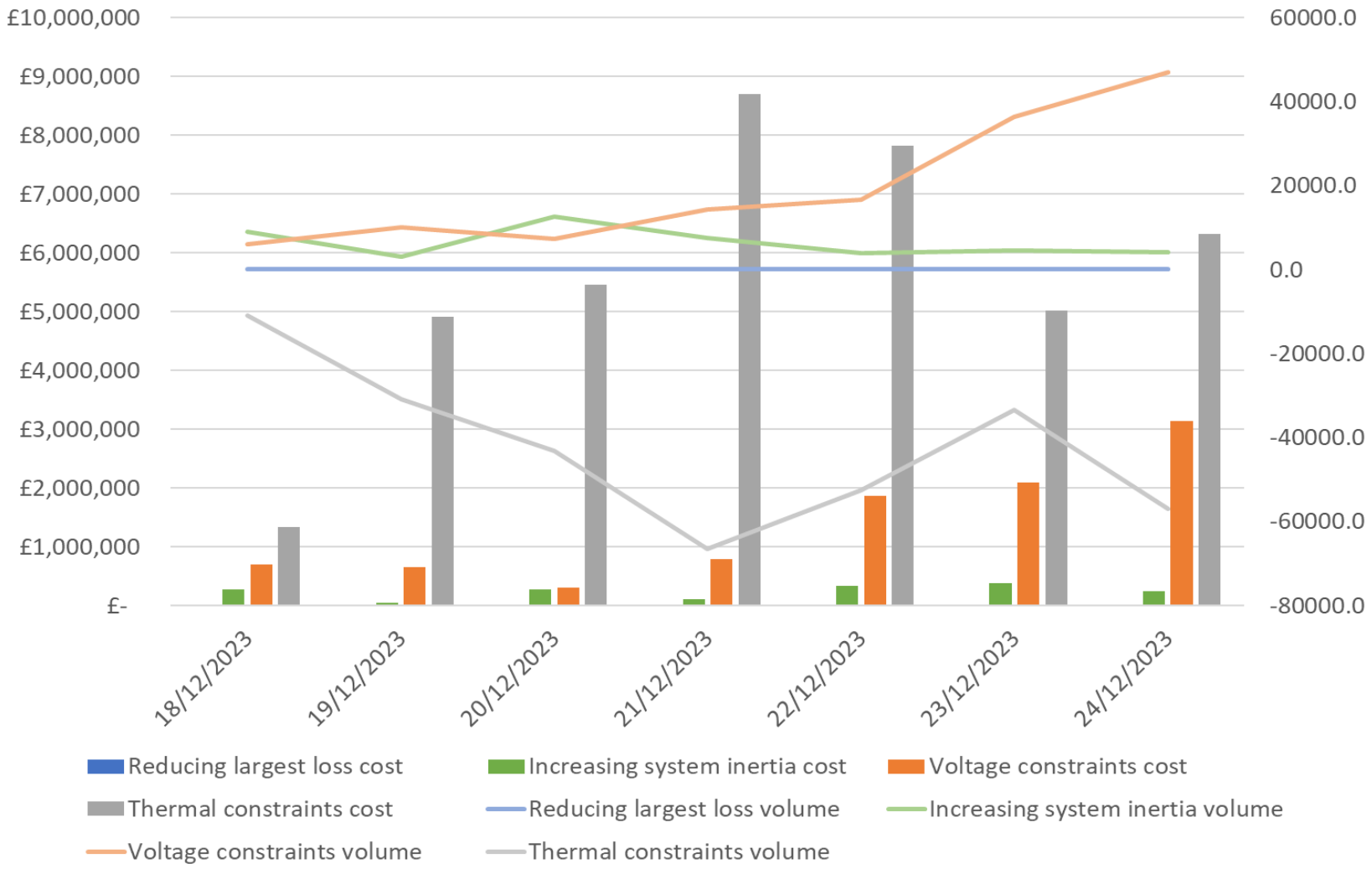

| Date | Total (£m) |
|---|---|
| 18/12/2023 | 6.6 |
| 19/12/2023 | 10.0 |
| 20/12/2023 | 8.6 |
| 21/12/2023 | 13.3 |
| 22/12/2023 | 14.8 |
| 23/12/2023 | 15.0 |
| 24/12/2023 | 12.5 |
| Weekly Total | 80.7 |

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



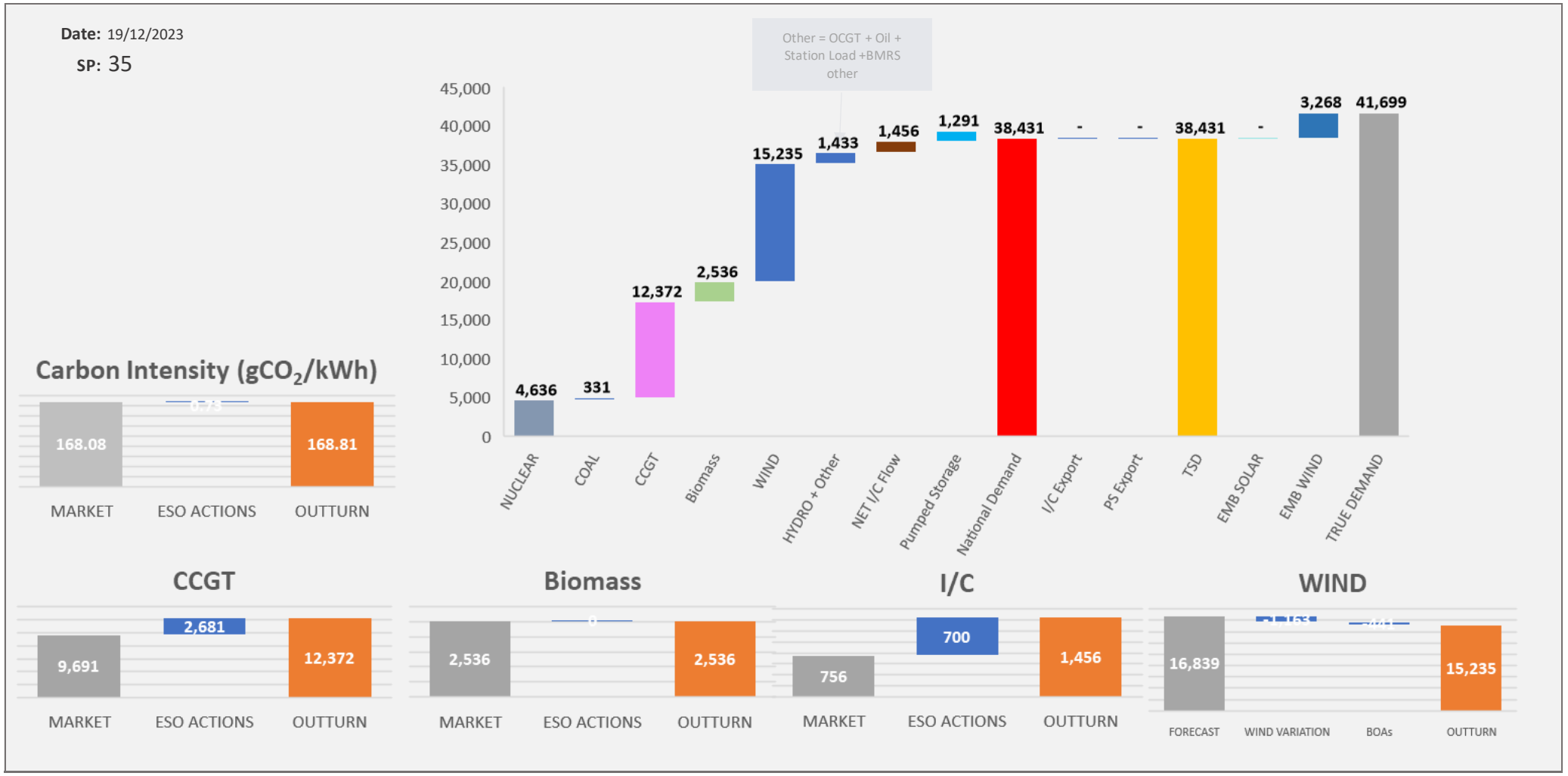

**Thermal – network congestion**
Actions were required to manage thermal constraints throughout the week with the most significant cost on Thursday and Friday.

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

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

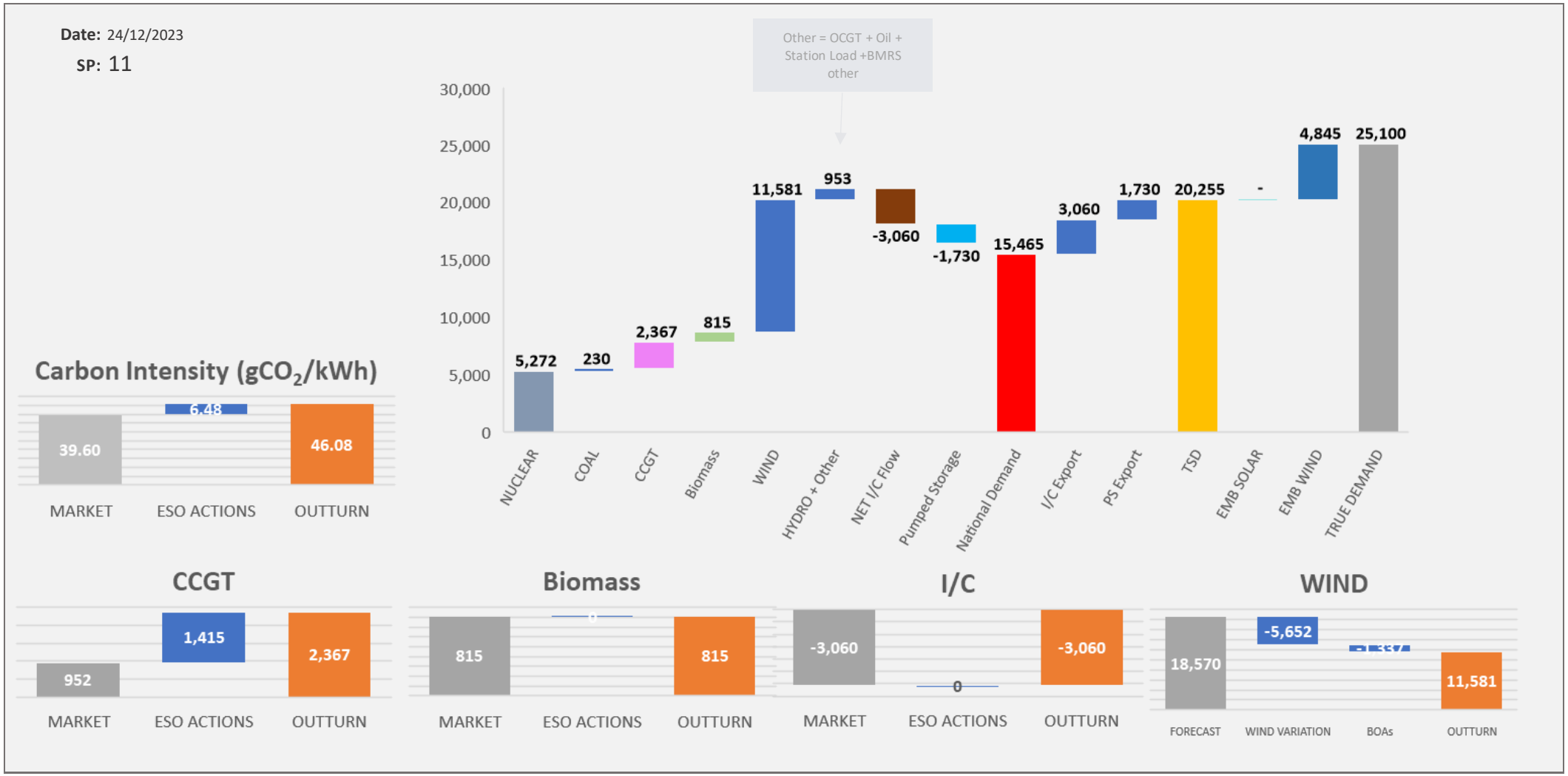
**Increasing inertia**
Intervention was required to manage System Inertia throughout the week.

# ESO Actions | Tuesday 19 December – Peak Demand – SP spend ~£133k



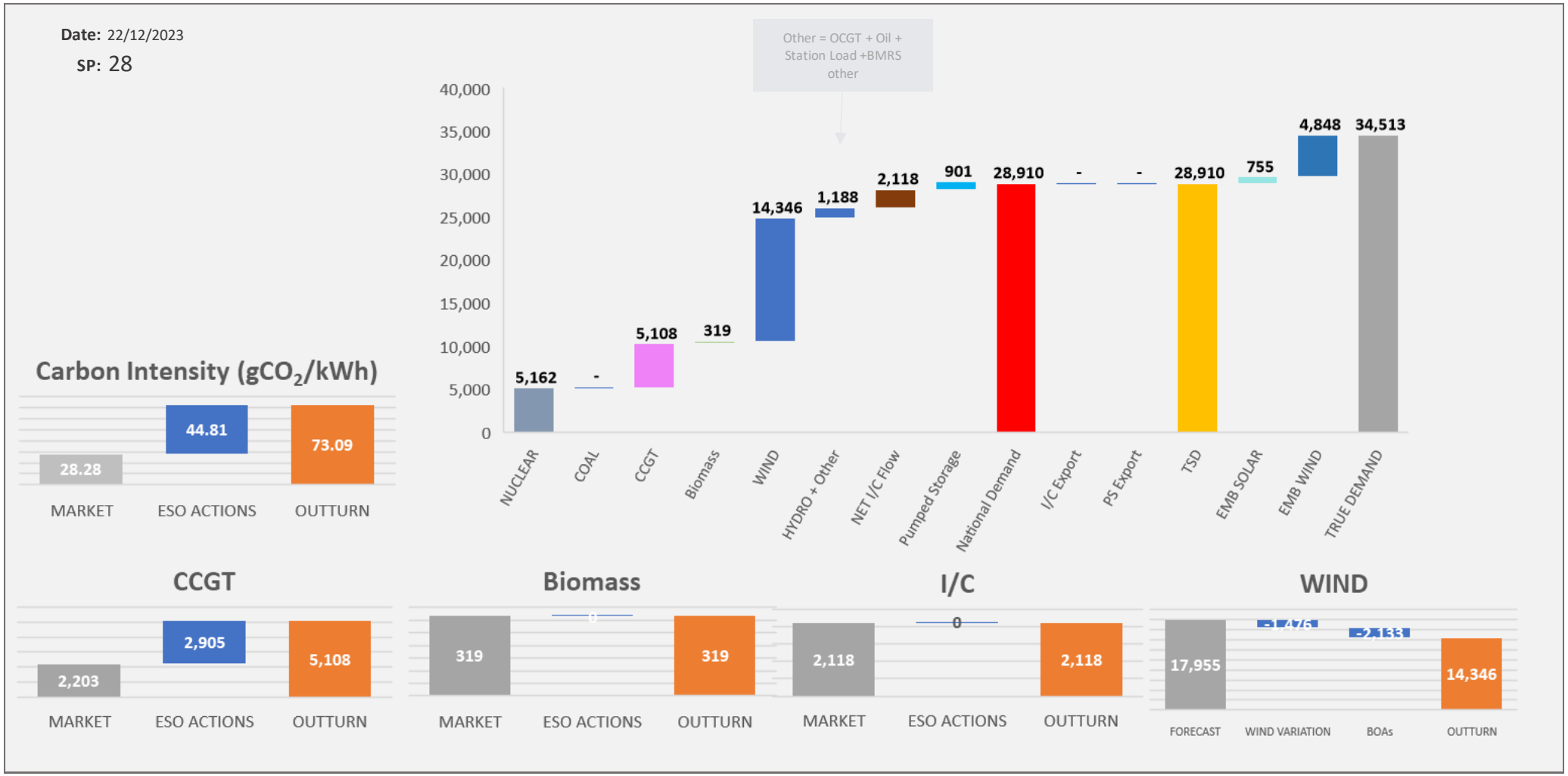

Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

# ESO Actions | Sunday 24 December – Minimum Demand – SP Spend ~£259k




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

# ESO Actions | Friday 22 December – Highest SP Spend ~£438k

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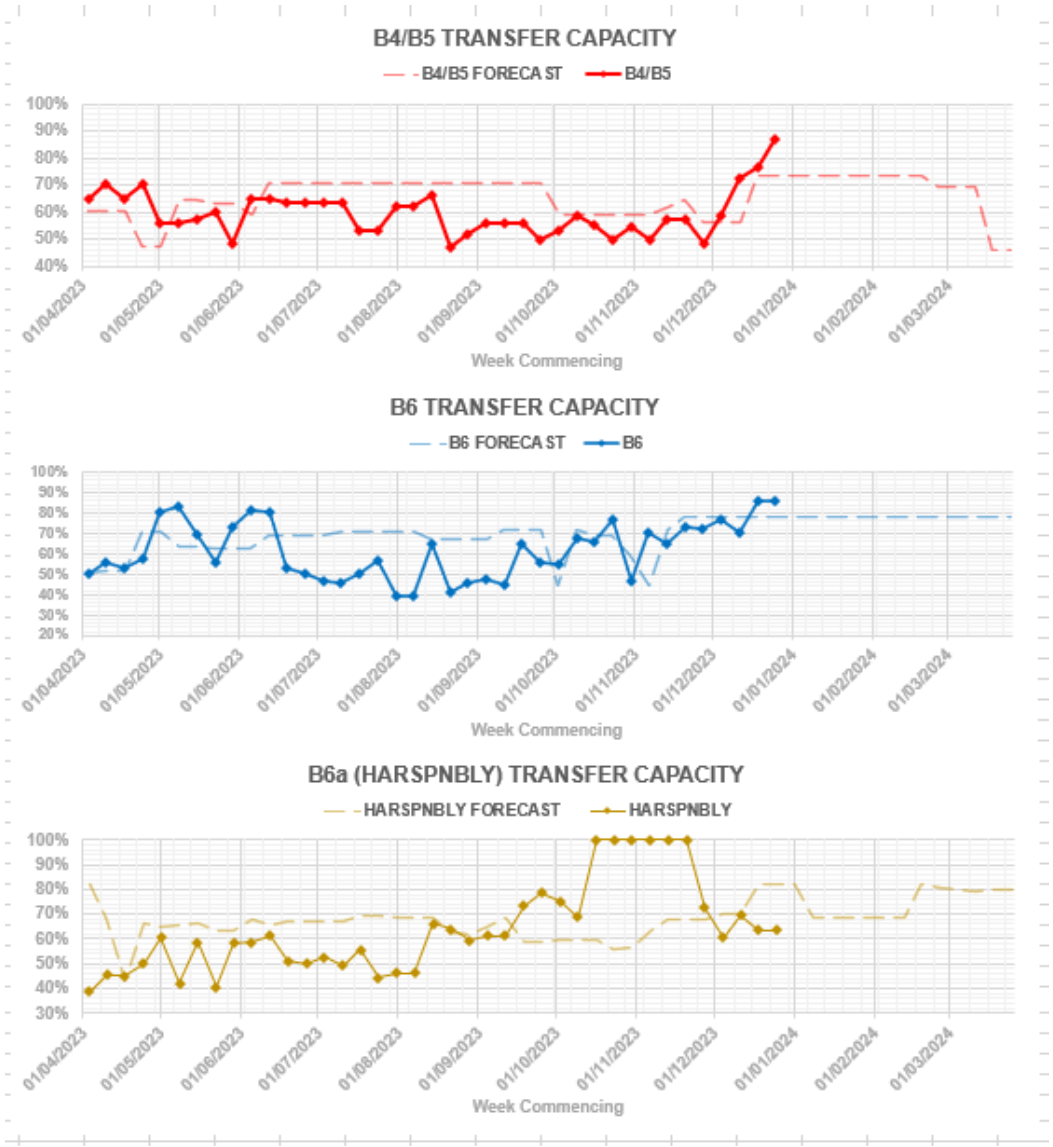
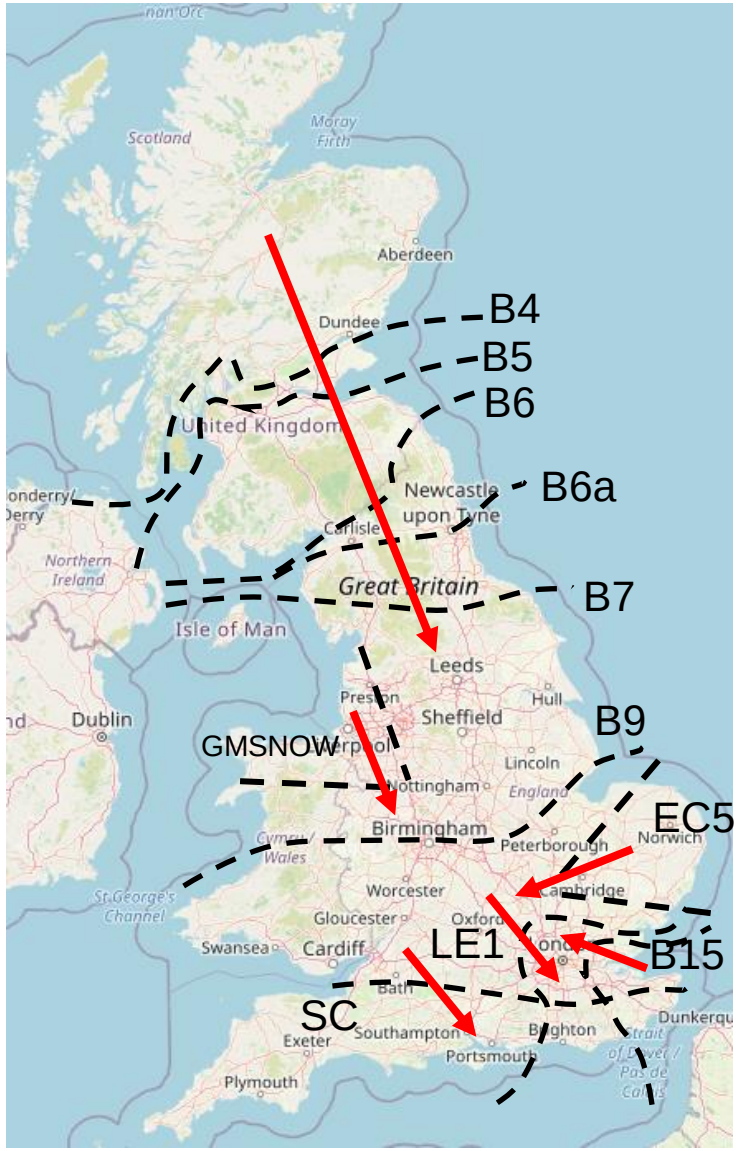
# Transparency | Network Congestion (27/12/23)




| 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 |

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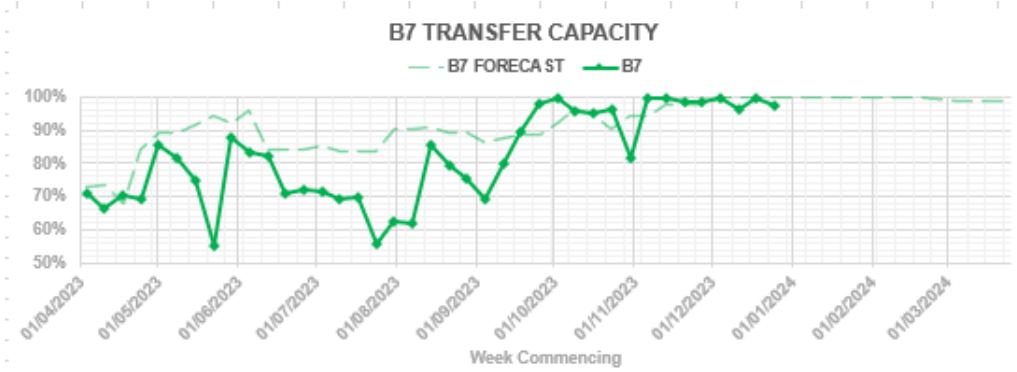


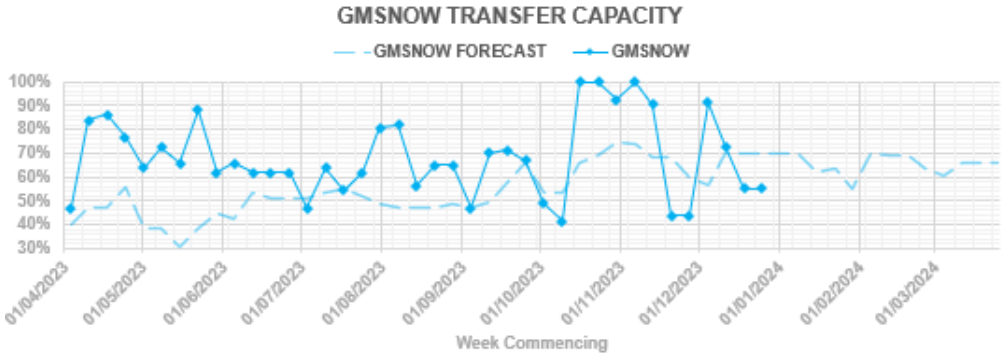


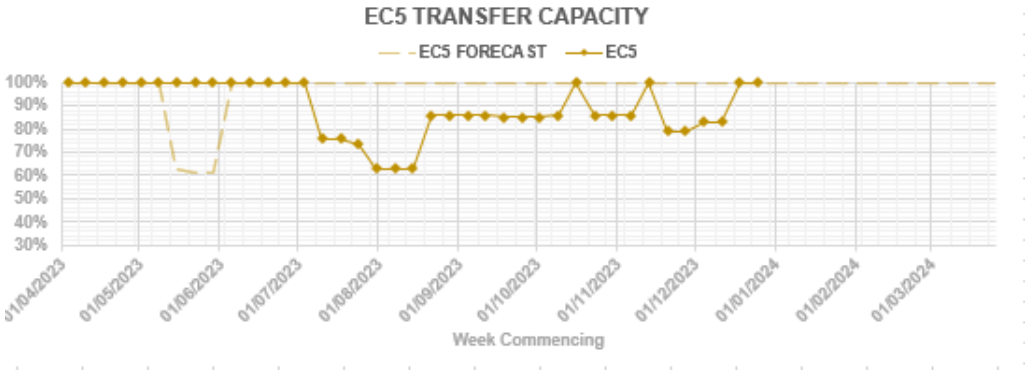


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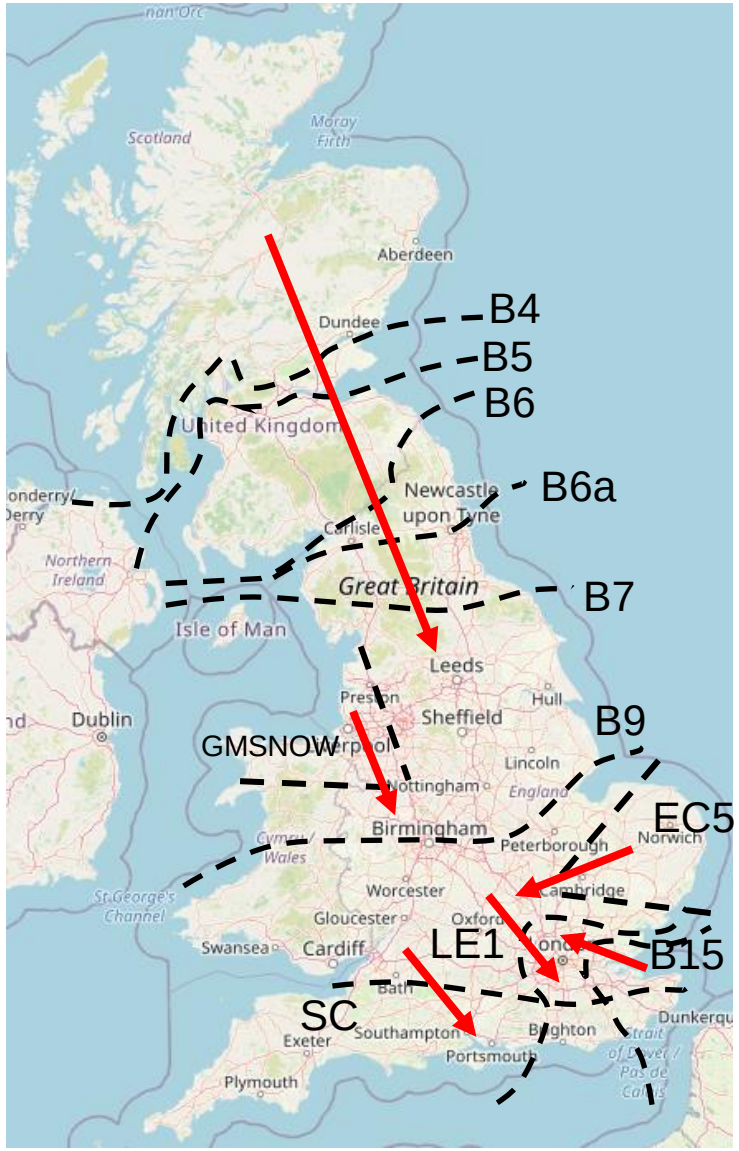


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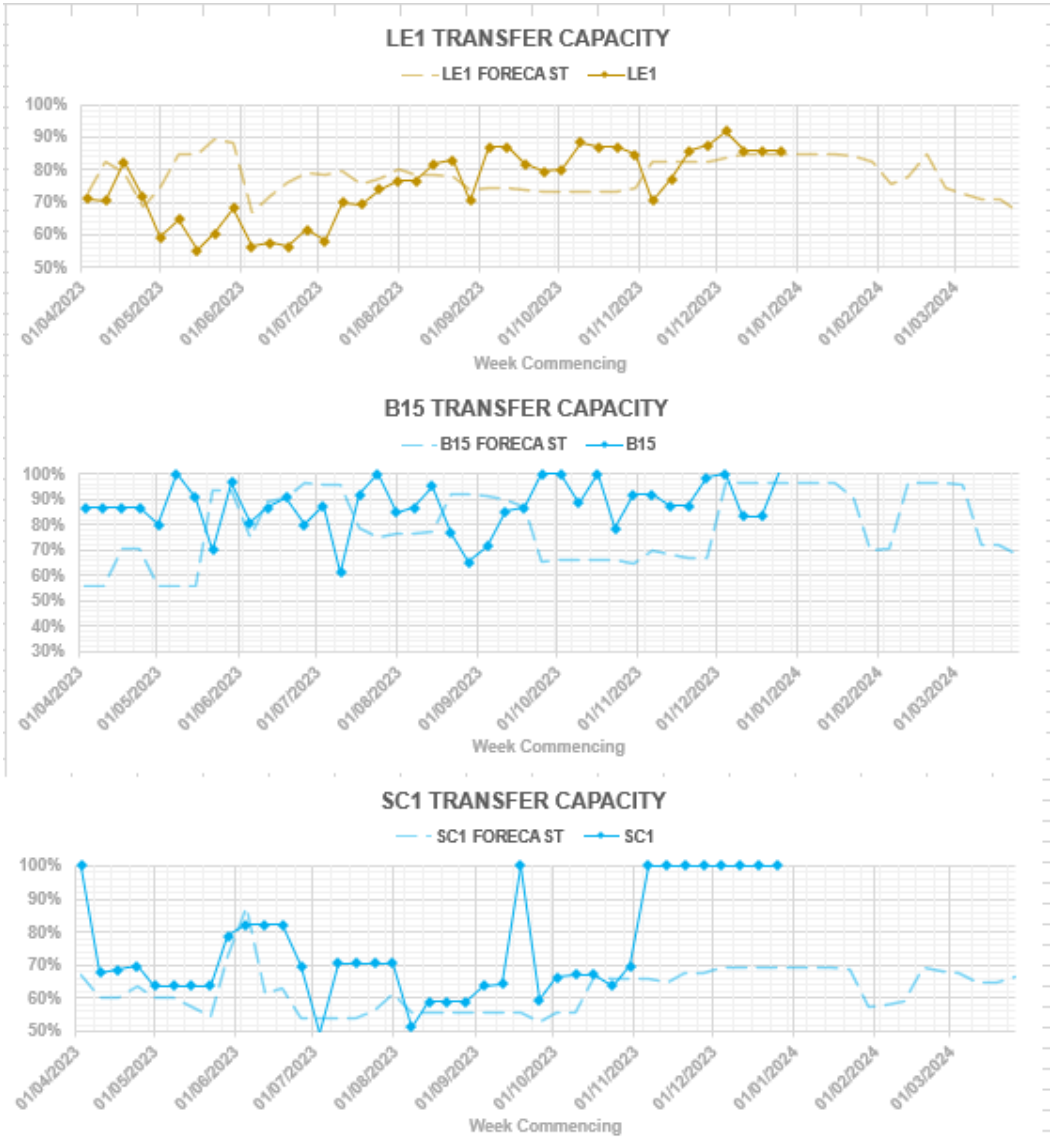


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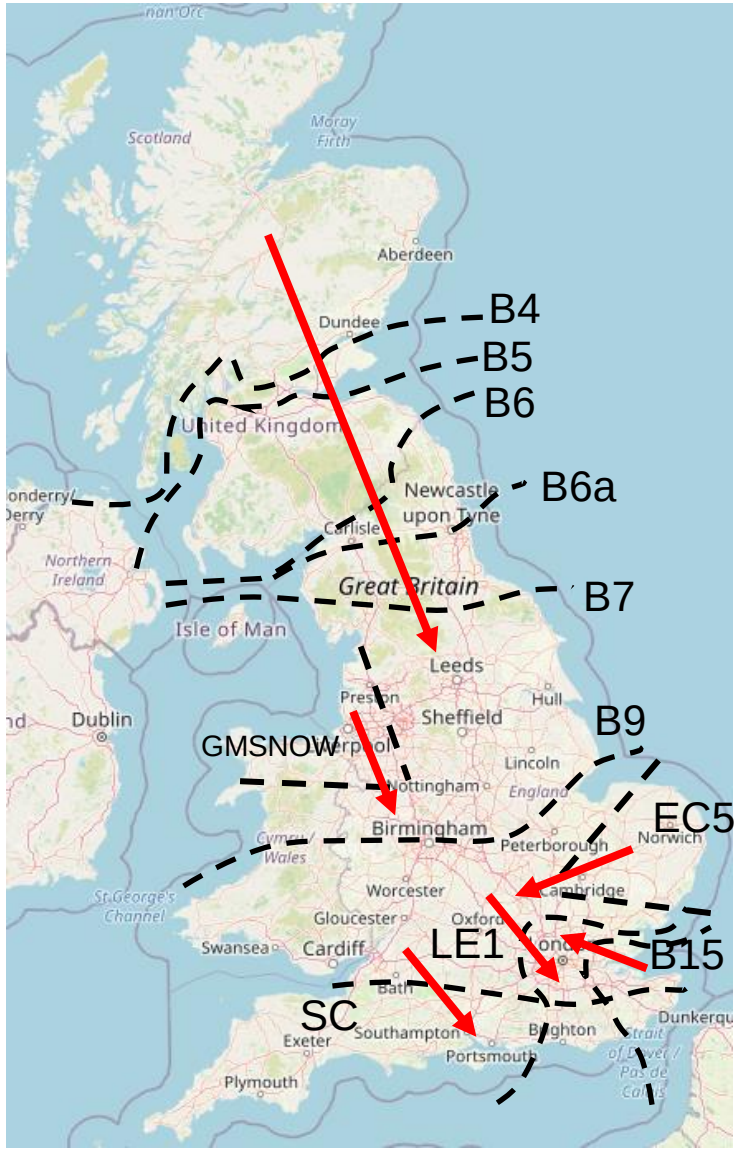


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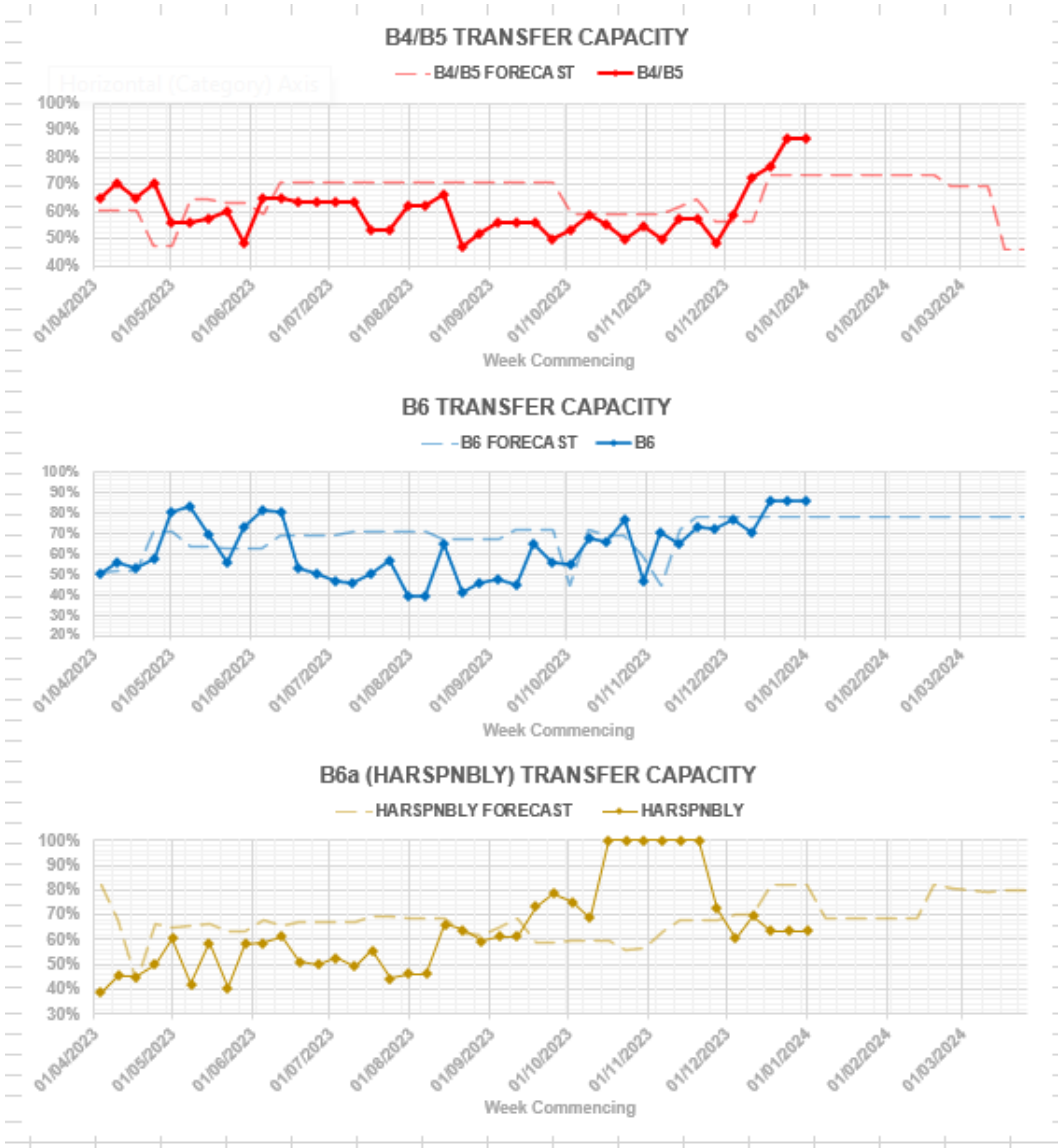
# Transparency | Network Congestion (03/01/23)

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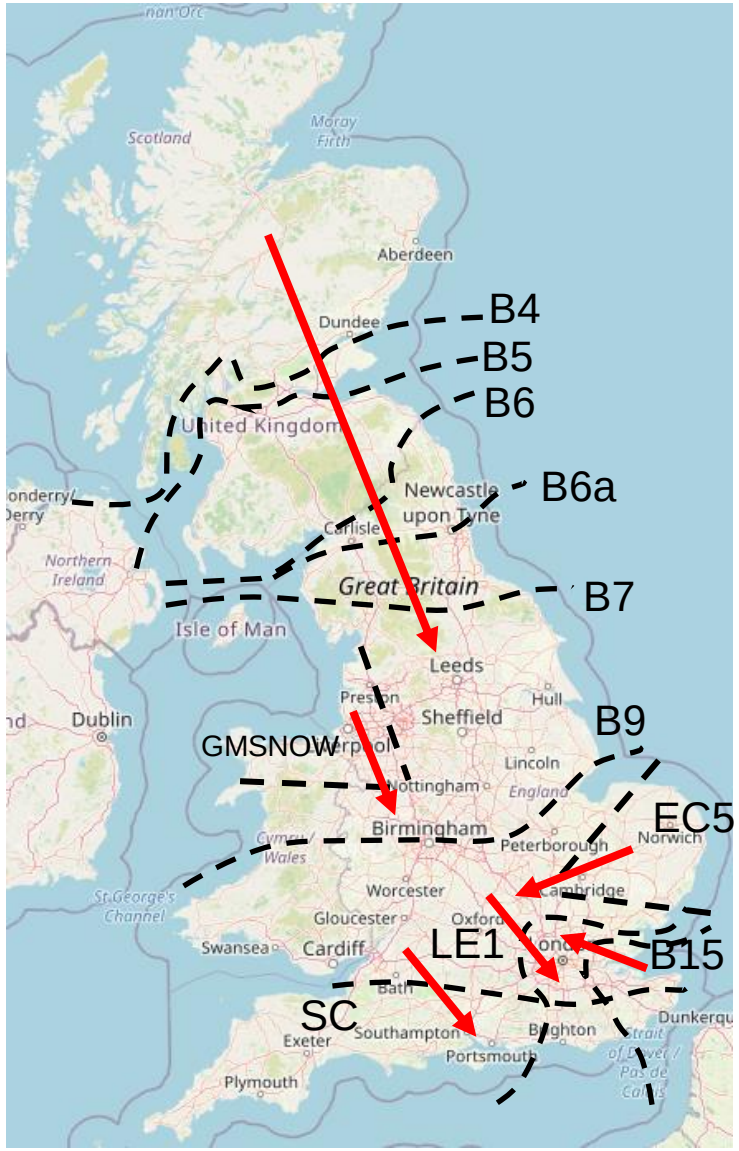


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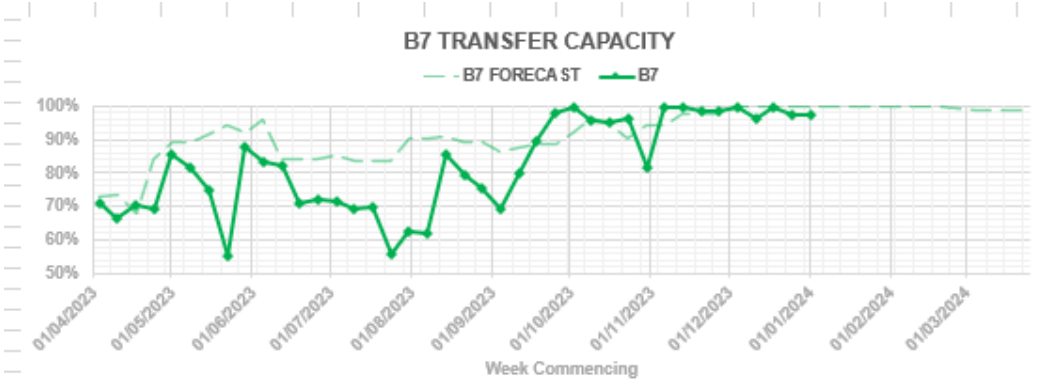


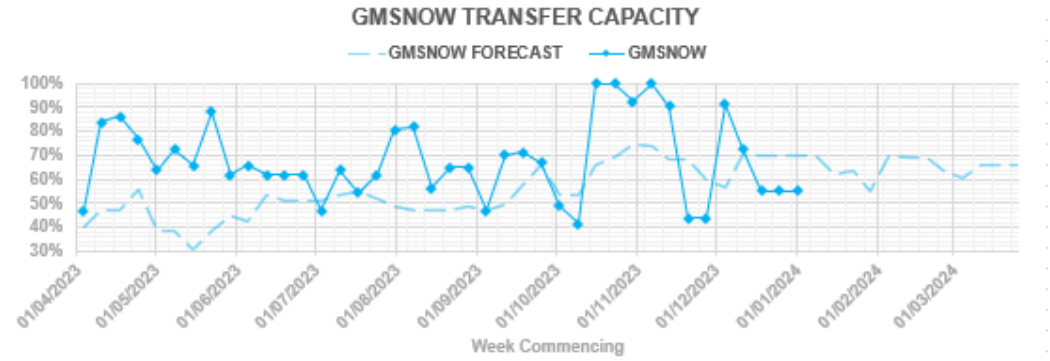


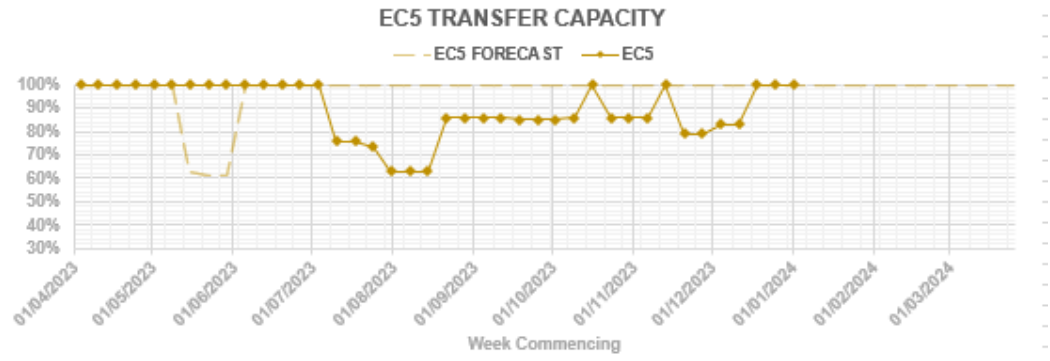


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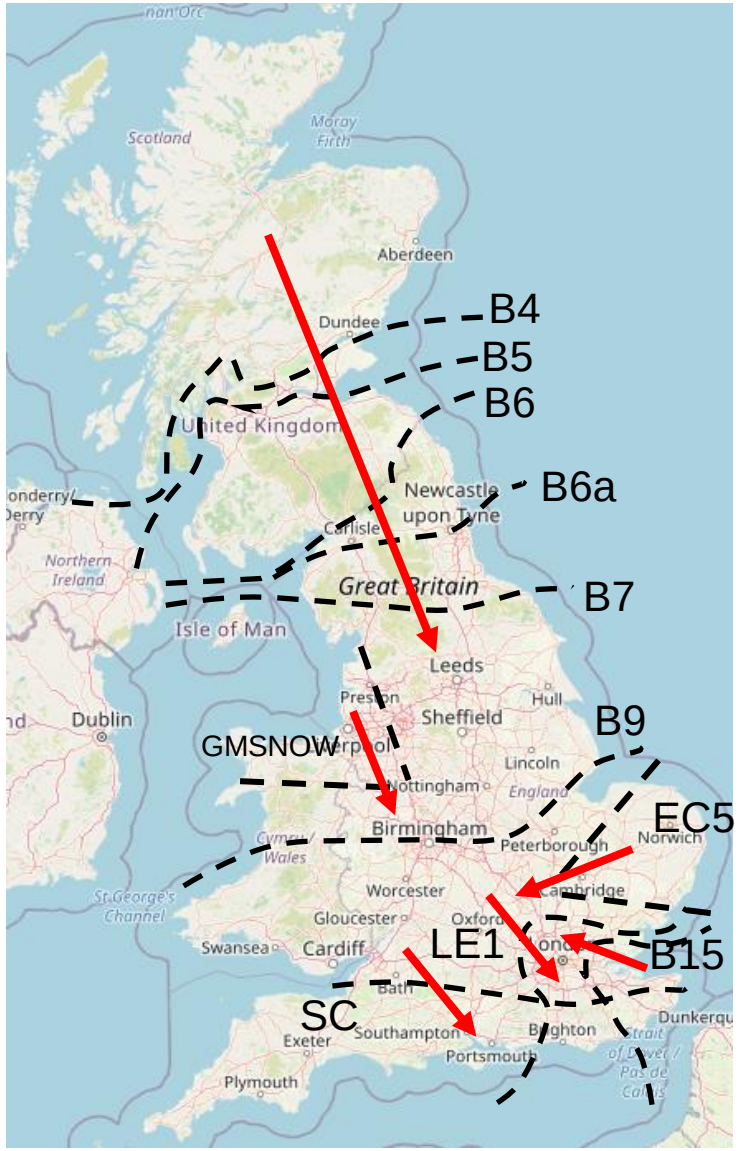


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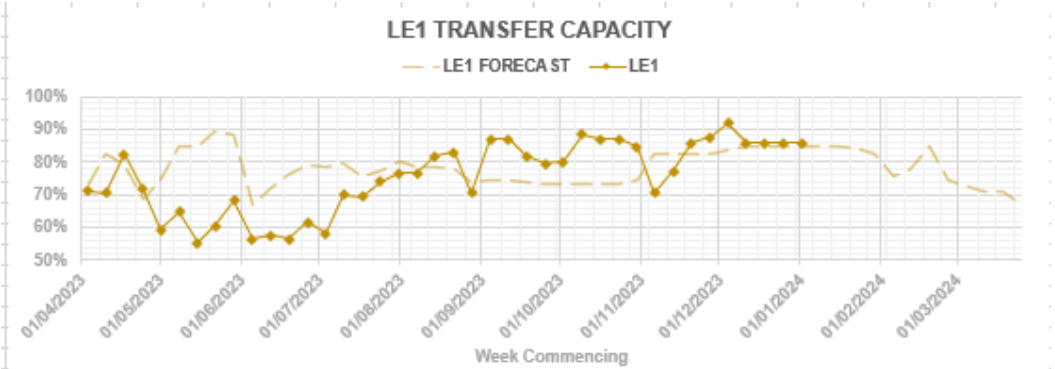


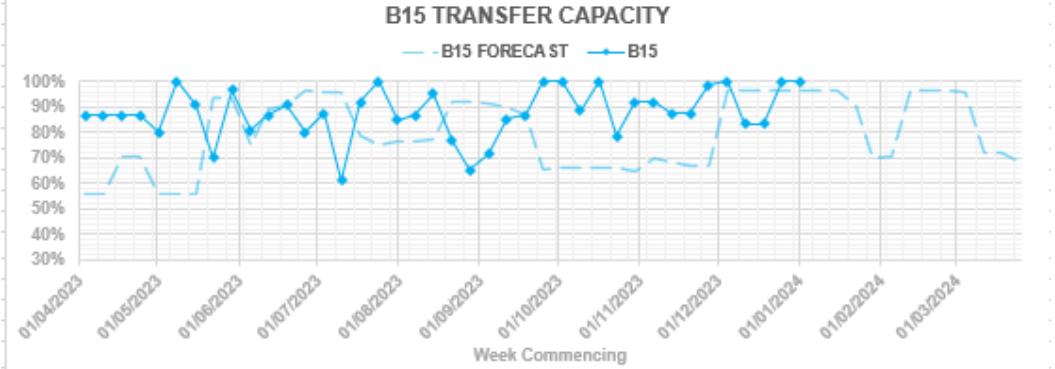


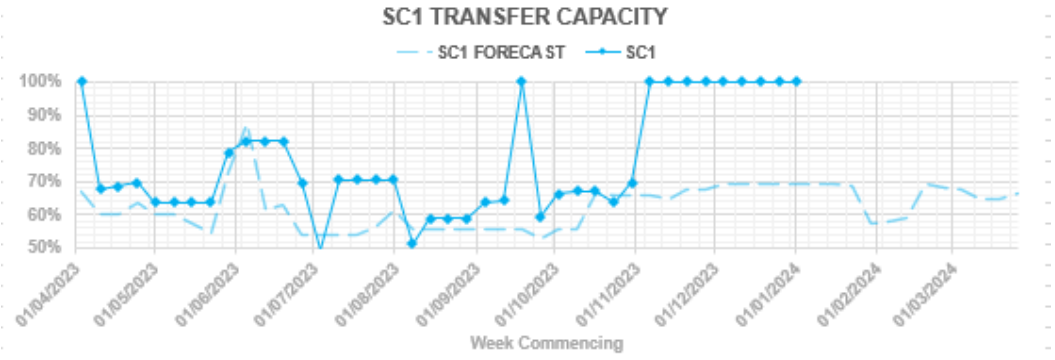


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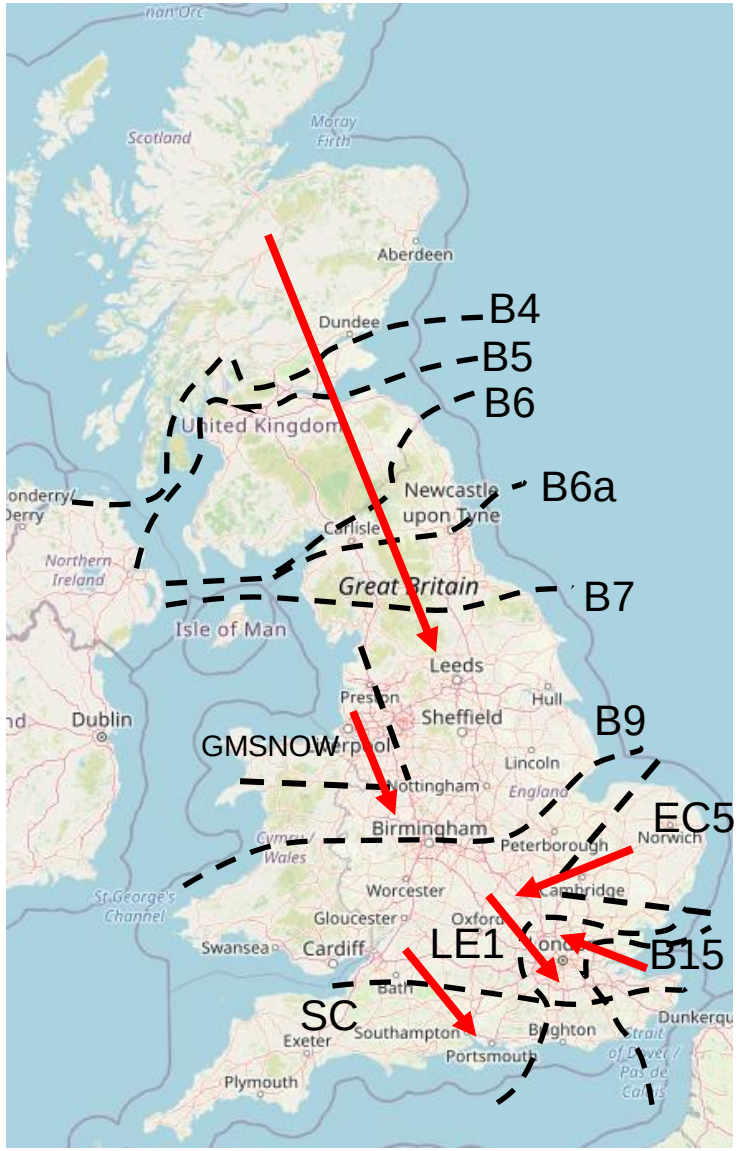


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# Purpose and scope of the ESO Operational Transparency Forum

## 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