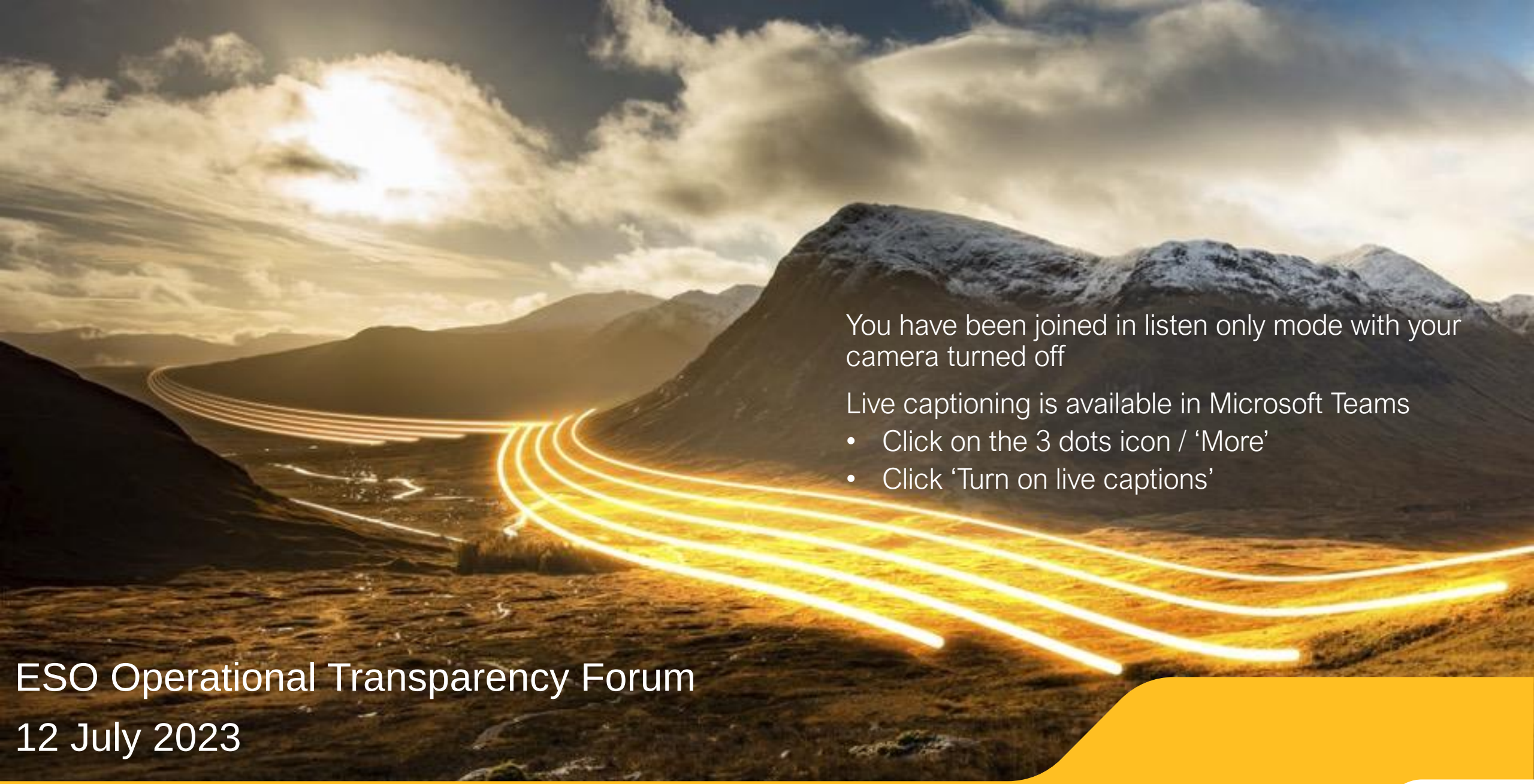


You have been joined in listen only mode with your camera turned off

Live captioning is available in Microsoft Teams

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

ESO Operational Transparency Forum

12 July 2023

ESO

Introduction | Sli.do code #OTF

Please visit www.sli.do and enter the code #OTF to ask questions & provide us with post event feedback.

We will answer as many questions as possible at the end of the session. We may have to take away some questions and provide feedback from our expert colleagues in these areas during a future forum. **Ask your questions early in the session to give more opportunity to pull together the right people for responses.**

To tailor our forum and topics further we have asked for names (or organisations, or industry sector) against Sli.do questions. This is also helpful if we need to ask for more information before we can answer.

If you do not feel able to ask a question in this way please use the **Advanced questions** option (see below) or email us at: box.NC.Customer@nationalgrideso.com

These slides, event recordings and further information about the webinars can be found at the following location:

Advanced question can be asked here: https://forms.office.com/r/k0AEfKnai3

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

Future deep dive / focus topics

Future

Scottish Oscillations – 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

Winter Balancing Costs Review

On 7th June the Winter Balancing Costs Review was published to identify the drivers of balancing costs and their trends across the winter period (November to March)

It is split into a summary report linked with the ESO balancing costs strategy and a detailed and independant report by LCP

https://www.nationalgrideso.com/document/281776/download (Summary Report)

https://www.nationalgrideso.com/document/281781/download (Full LCP Report)

We invite you to join a workshop on the ESO balancing costs strategy, detailed review and response to your feedback on this winter balancing costs report and opportunity to have your qualitative views captured and added to an appendix.

The workshop will be held on **25th July 13.30 – 16:00.**

Please register using the QR code.

GC0154 Workgroup Consultation

- A code change modification to include interconnector ramping in the Grid Code has been raised
- Purpose is to comply with retained EU Law and to resolve the operational challenges as a result of fast simultaneous interconnector ramping
- Current arrangements allow interconnectors to ramp up to 100MW/min
- Reduced ramping rates aims to increase security of supply and to reduce GB balancing costs both now and as more interconnectors connect in the future
- A CBA conducted suggested a saving of £865m in balancing costs over the study period of 2023-2030 by reducing interconnector ramp rates.
- The Workgroup Consultation will be open from 11th July 2023

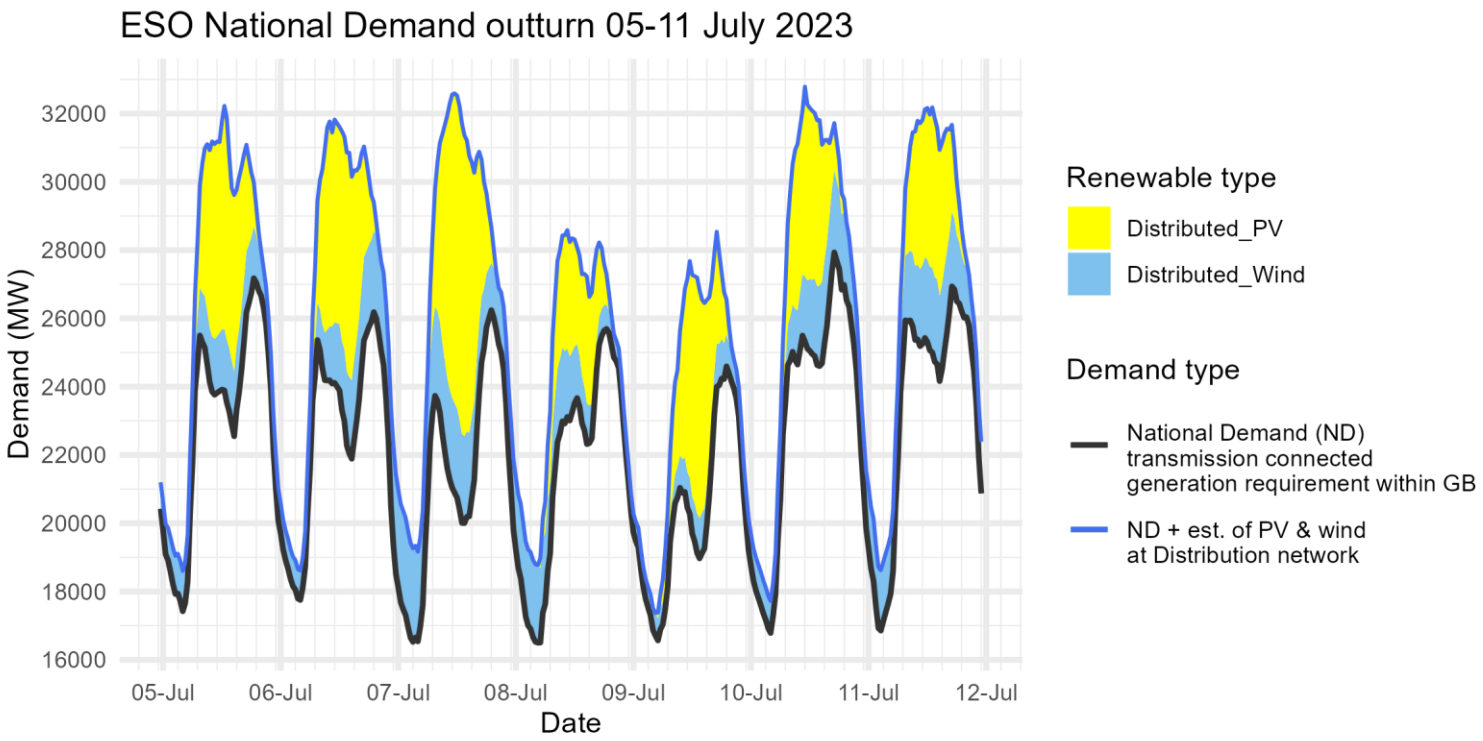
ESO Proposed
Reduce the current arrangements to a max fixed rate of 50MW/min

Workgroup Alternate
Keep the current arrangements of a max fixed ramp rate 100MW/min

The code modification page can be viewed here

Note: currently interconnector ramping arrangements are specified in interconnector operating protocols

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.

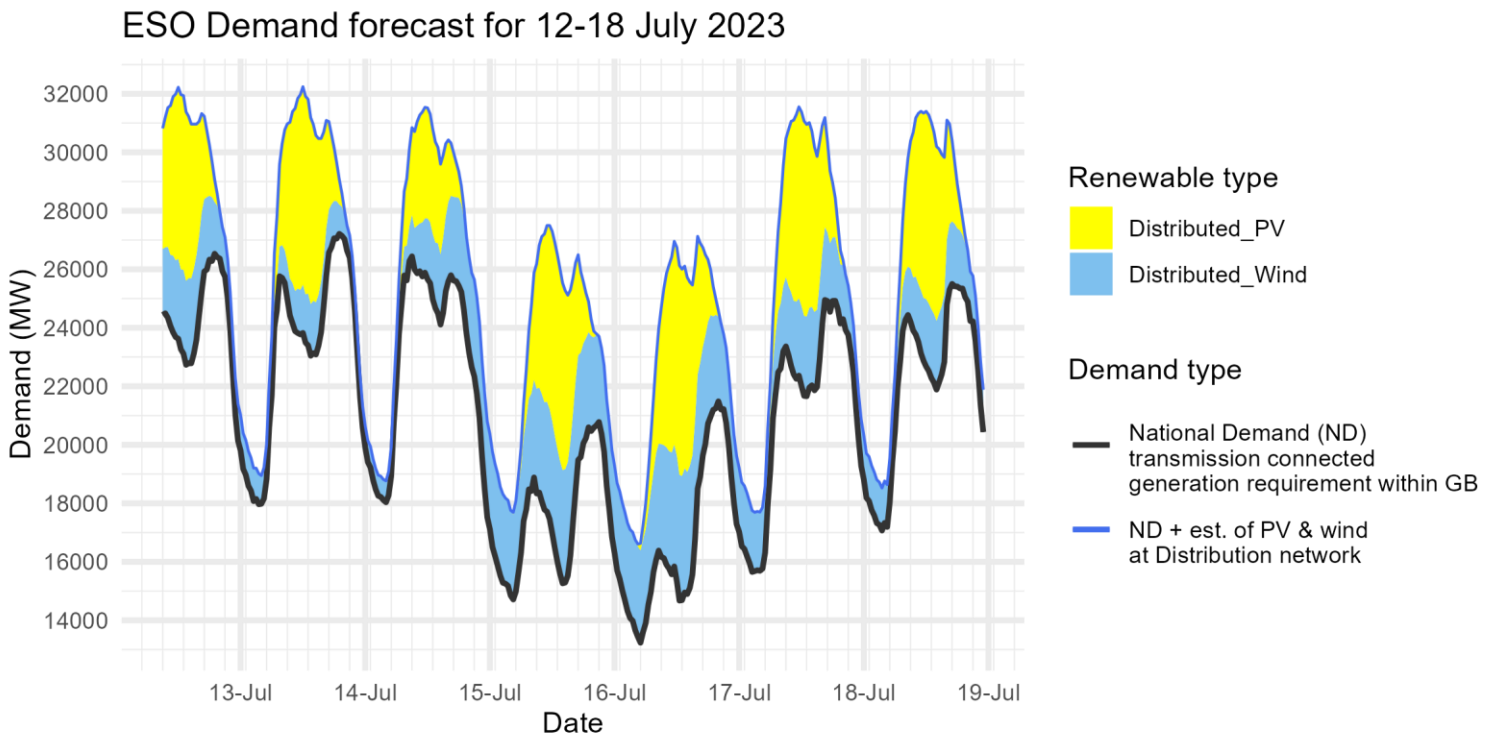
ND values **do not include** export on interconnectors or pumping or station load

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 05 Jul)			OUTTURN		
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
05 Jul	Afternoon Min	22.5	1.9	6.4	22.5	1.9	5.2
06 Jul	Overnight Min	17.3	0.9	0.0	17.8	0.9	0.0
06 Jul	Afternoon Min	22.0	1.8	6.3	21.9	2.3	6.0
07 Jul	Overnight Min	16.2	2.3	0.0	16.5	2.7	0.0
07 Jul	Afternoon Min	19.8	2.4	7.4	20.0	2.5	8.8
08 Jul	Overnight Min	15.8	2.0	0.1	16.5	2.2	0.0
08 Jul	Afternoon Min	17.6	2.7	5.8	22.3	1.2	3.7
09 Jul	Overnight Min	16.1	1.0	0.1	16.6	0.7	0.2
09 Jul	Afternoon Min	18.5	1.3	6.7	19.0	1.2	6.7
10 Jul	Overnight Min	17.0	1.0	0.0	16.8	0.9	0.0
10 Jul	Afternoon Min	22.5	1.8	6.5	24.6	2.4	4.8
11 Jul	Overnight Min	17.2	1.4	0.0	16.9	1.8	0.0
11 Jul	Afternoon Min	22.0	2.1	6.1	24.2	2.5	4.3

Demand | Week Ahead



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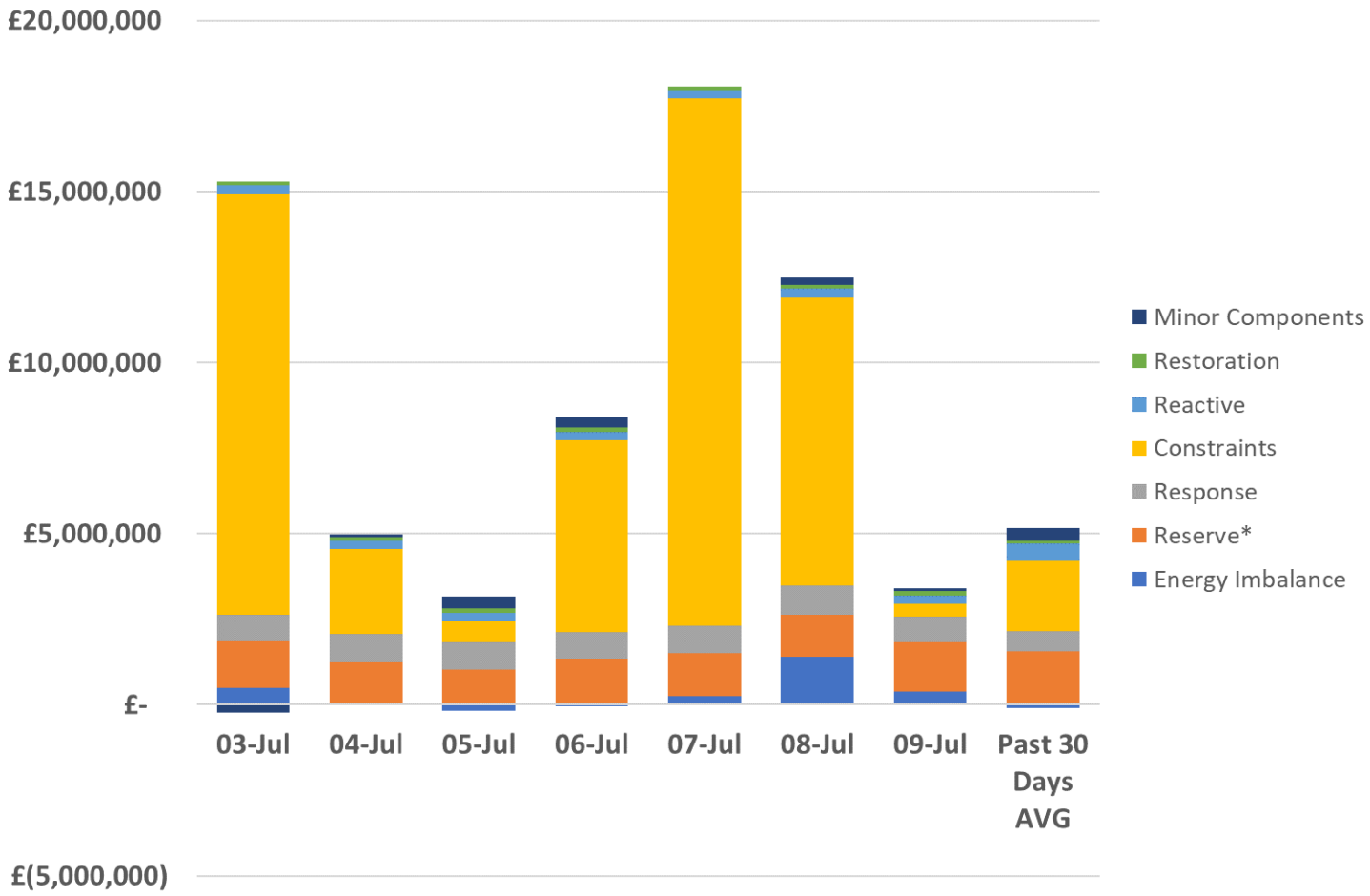
Historic out-turn data can be found on the ESO Data Portal in the following data sets: Historic Demand Data & Demand Data Update

		FORECAST (Wed 12 Jul)		
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
12 Jul 2023	Afternoon Min	22.7	2.9	5.8
13 Jul 2023	Overnight Min	18.0	1.0	0.0
13 Jul 2023	Afternoon Min	23.0	1.8	6.4
14 Jul 2023	Overnight Min	18.0	0.7	0.0
14 Jul 2023	Afternoon Min	24.1	2.4	3.1
15 Jul 2023	Overnight Min	14.7	2.9	0.1
15 Jul 2023	Afternoon Min	15.3	3.9	6.4
16 Jul 2023	Overnight Min	13.2	3.2	0.2
16 Jul 2023	Afternoon Min	14.7	4.3	7.2
17 Jul 2023	Overnight Min	15.7	2.1	0.0
17 Jul 2023	Afternoon Min	21.7	2.7	6.6
18 Jul 2023	Overnight Min	17.1	1.5	0.0
18 Jul 2023	Afternoon Min	21.9	2.4	6.0

ESO Actions | Category costs breakdown for the last week

Date	Total (£m)
03/07/2023	15.1
04/07/2023	5.0
05/07/2023	3.0
06/07/2023	8.3
07/07/2023	18.1
08/07/2023	12.5
09/07/2023	3.4
Weekly Total	65.4
Previous Week	62.6

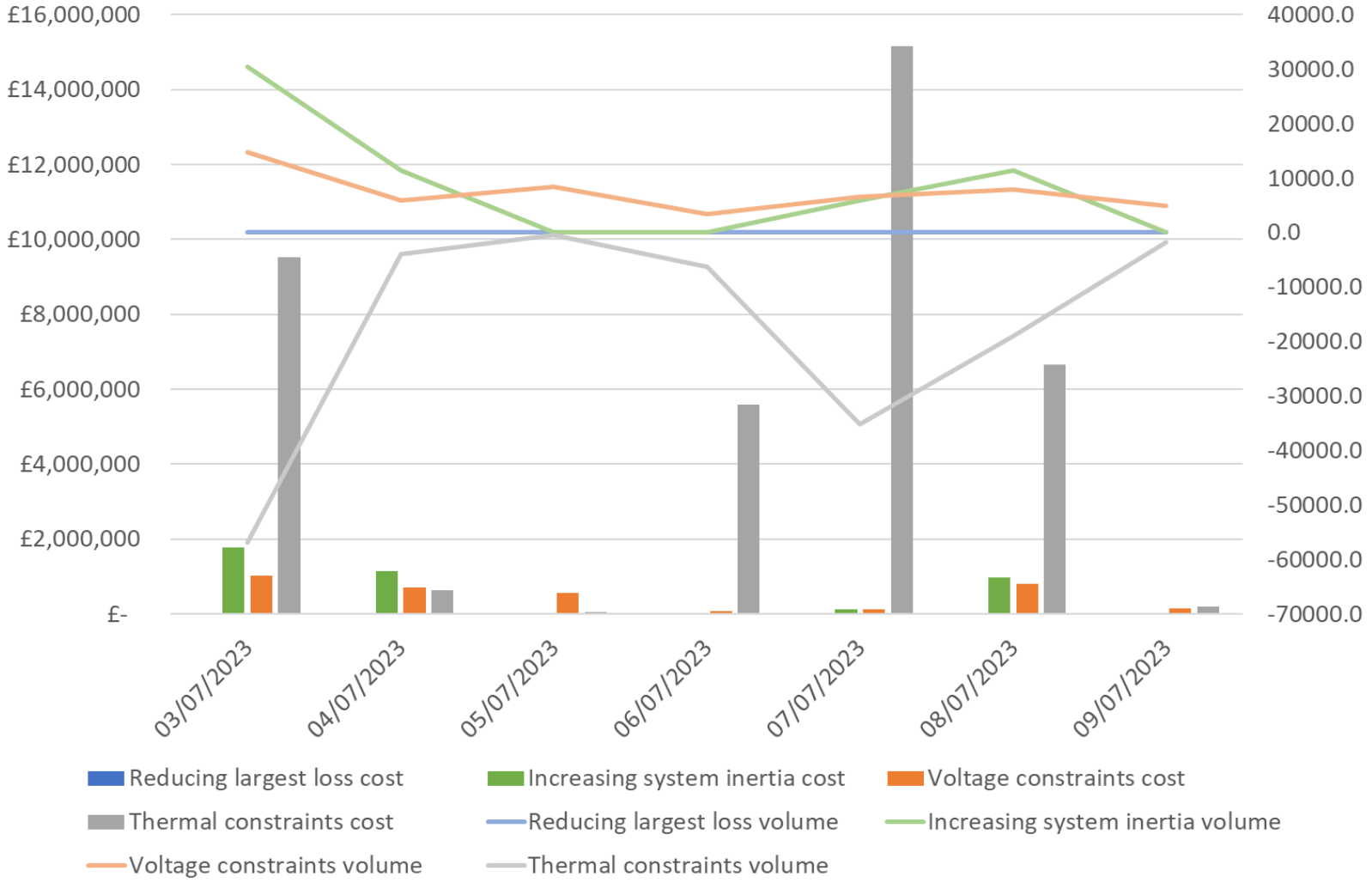


Constraints costs were the key cost component for the week.

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



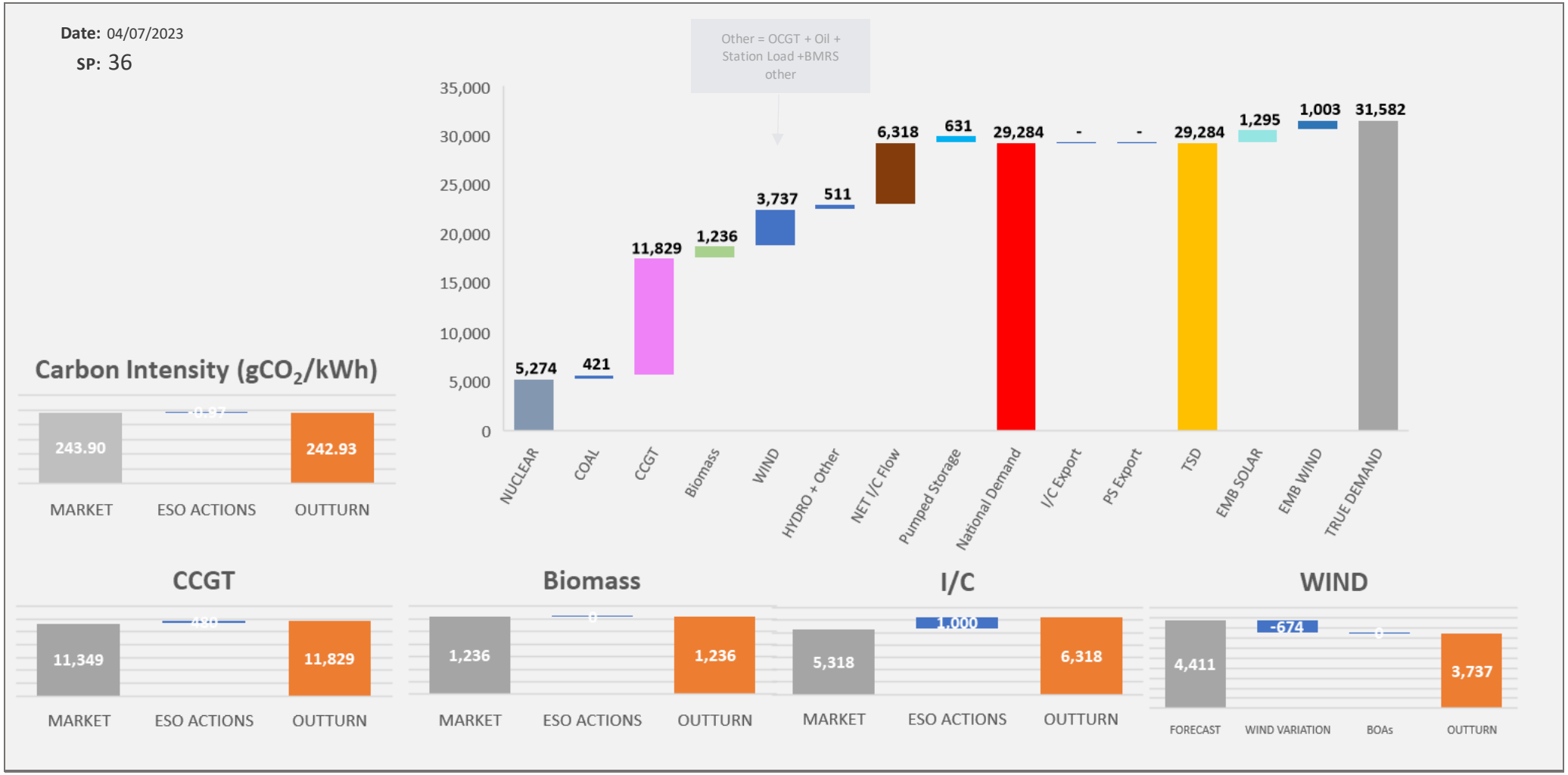
Thermal – network congestion
Actions were required to manage thermal constraints every day with the most significant costs on Friday.

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

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

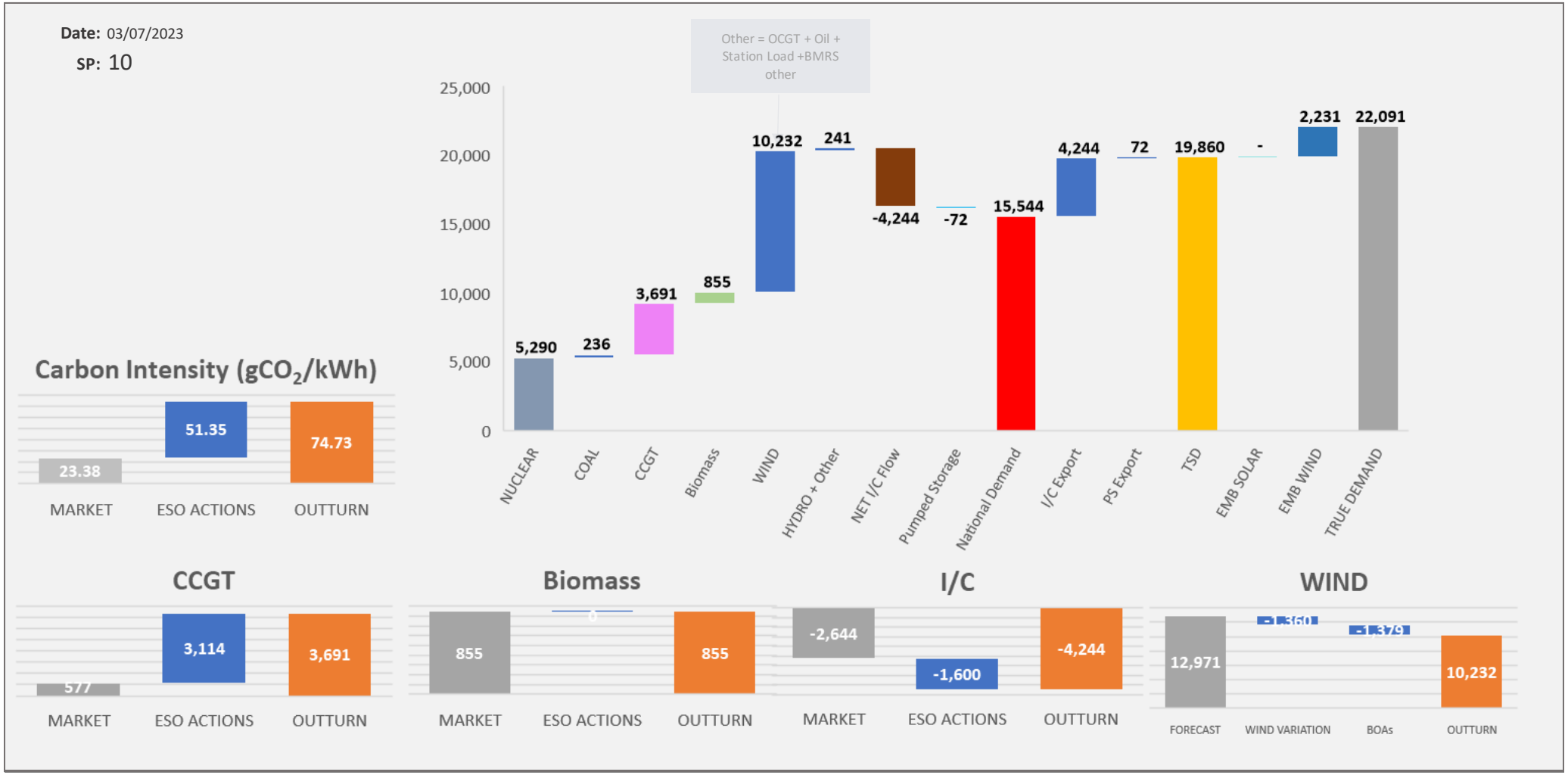
Increasing inertia
Intervention was required to manage system inertia on Mon, Tue, Fri, and Sat.

ESO Actions | Tuesday 4 July – Peak Demand – SP spend ~£56k



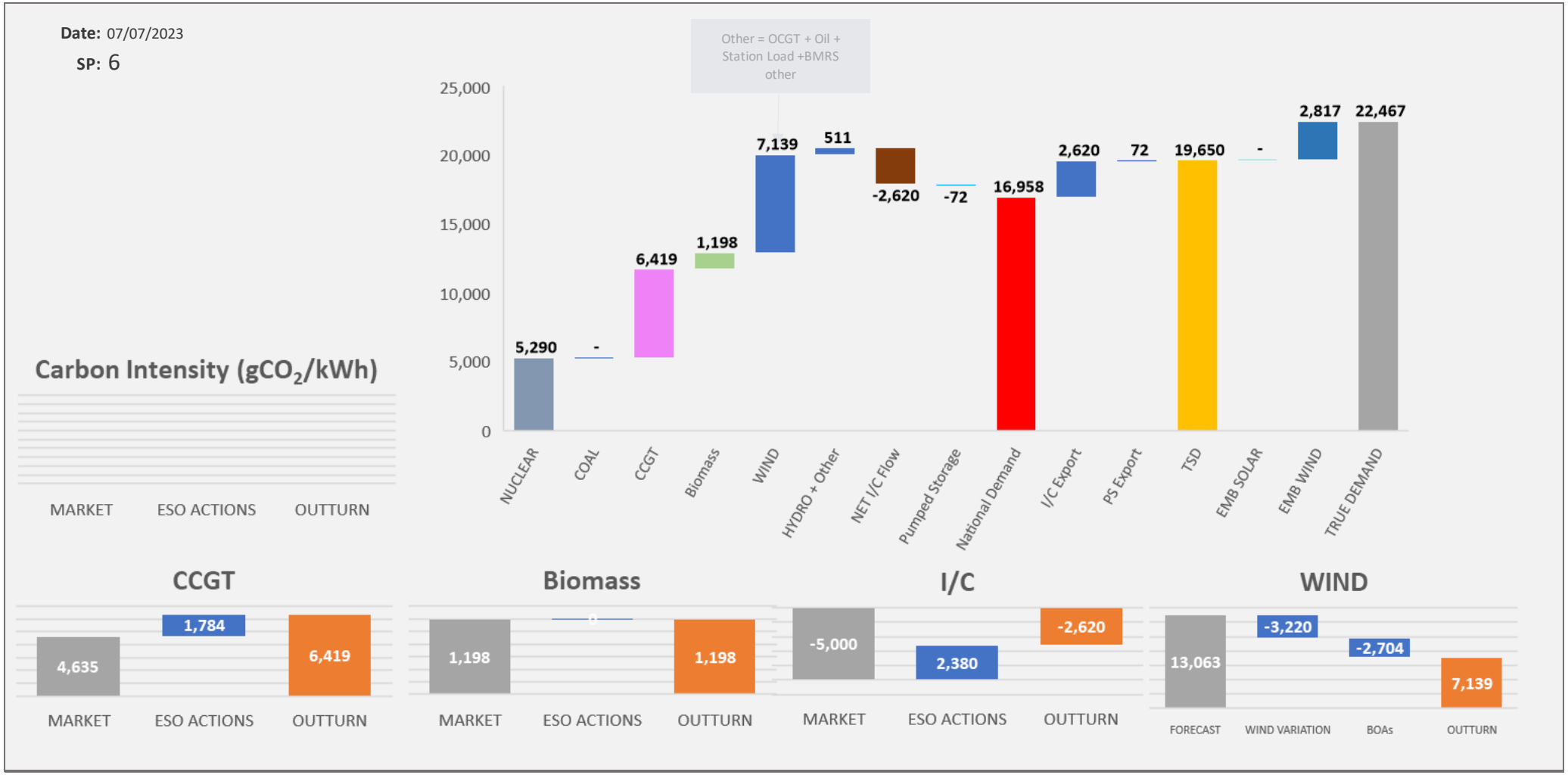
Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

ESO Actions | Monday 3 July – Minimum Demand – SP Spend ~£320k



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

ESO Actions | Friday 7 July – Highest SP Spend ~£690k



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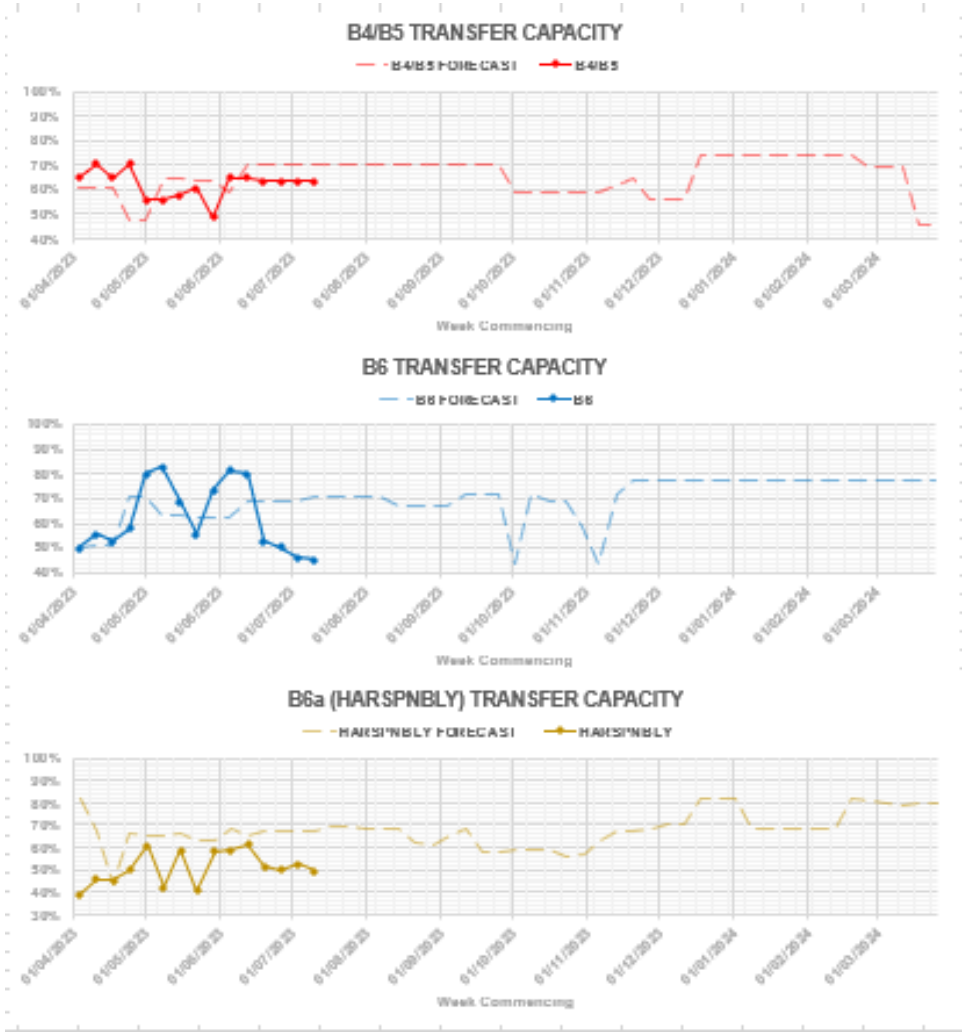
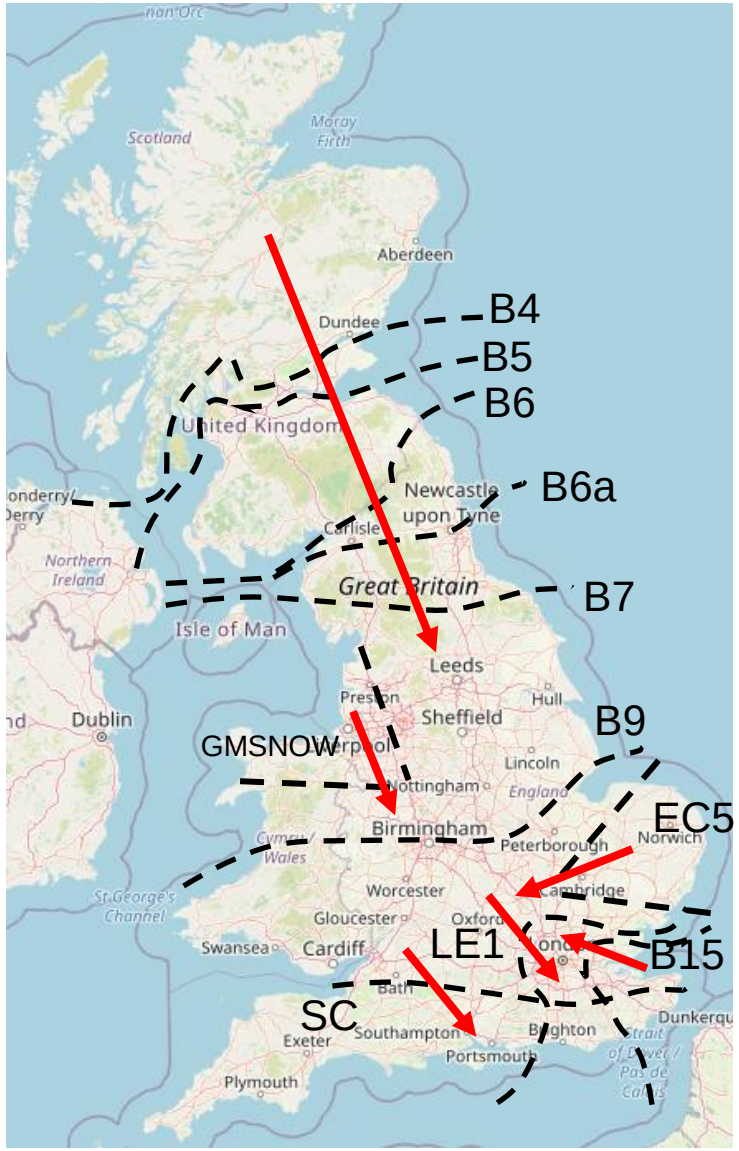
Transparency | Network Congestion

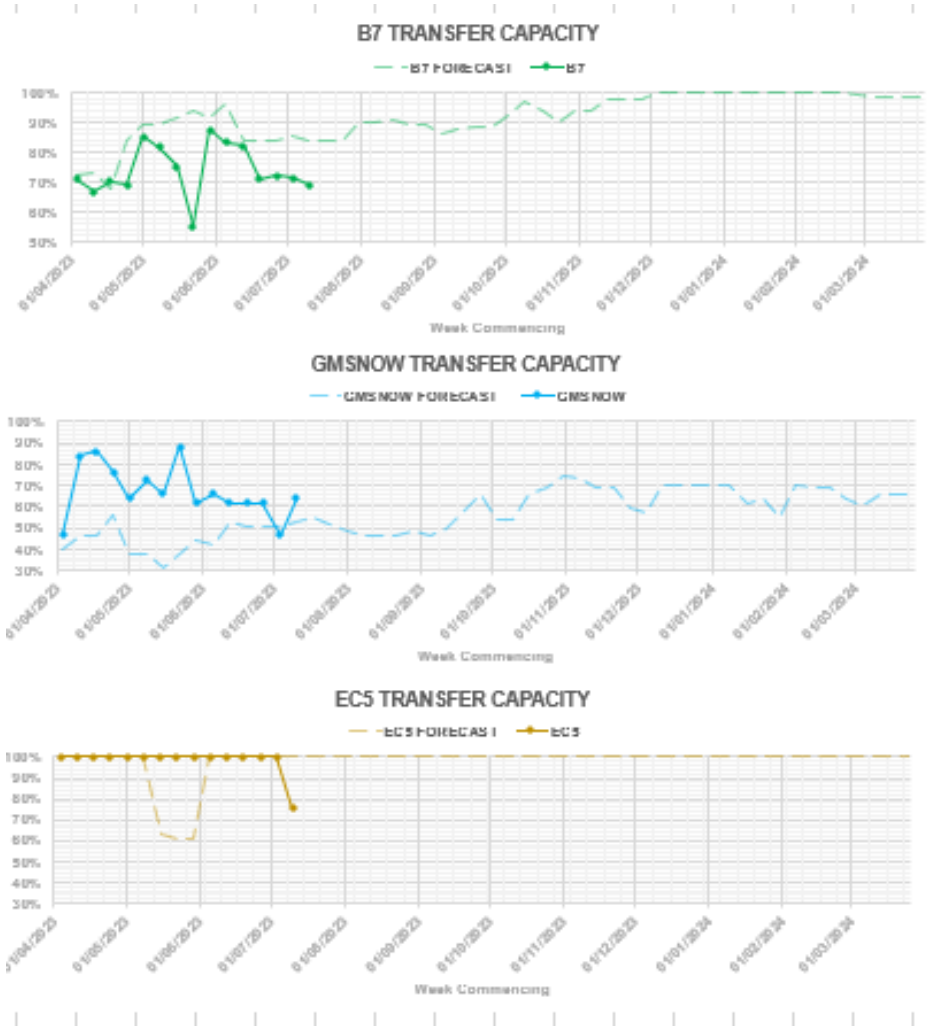


Boundary	Max. Capacity (MW)
B4/B5	3400
B6	6800
B6a	8000
B7	8325
GMSNOW	4700
B9	10600
EC5	5000
LE1	8500
B15	7500
SC	7300



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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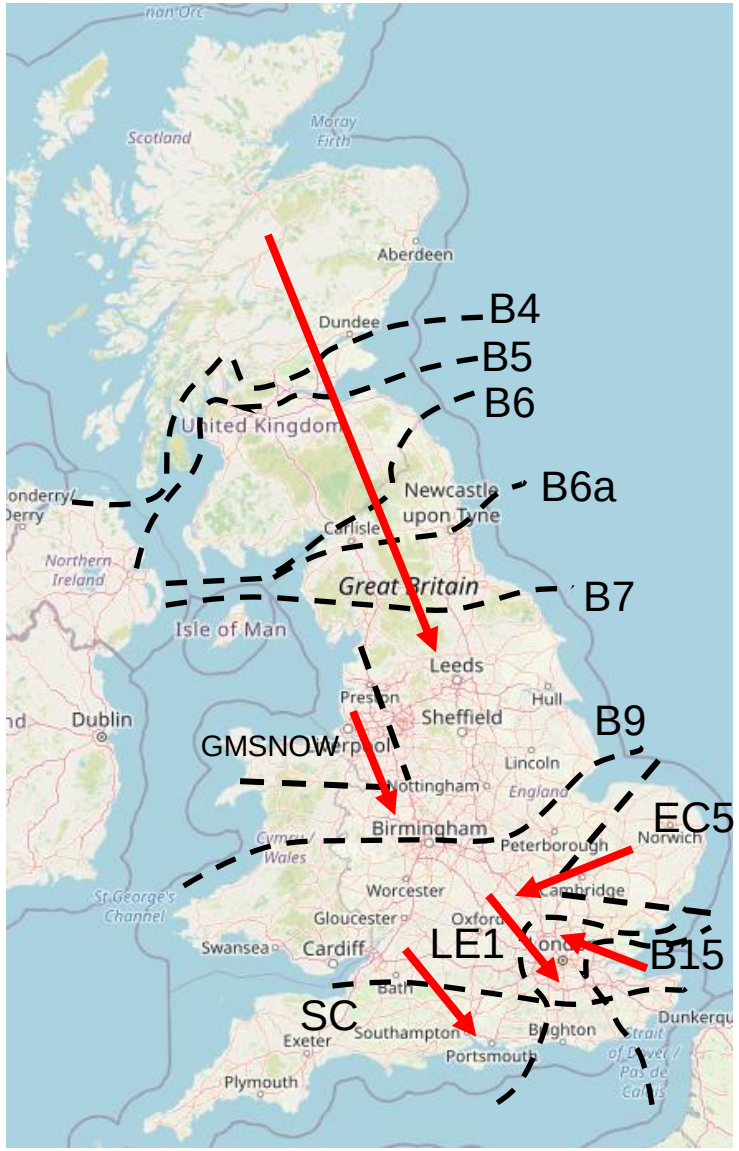

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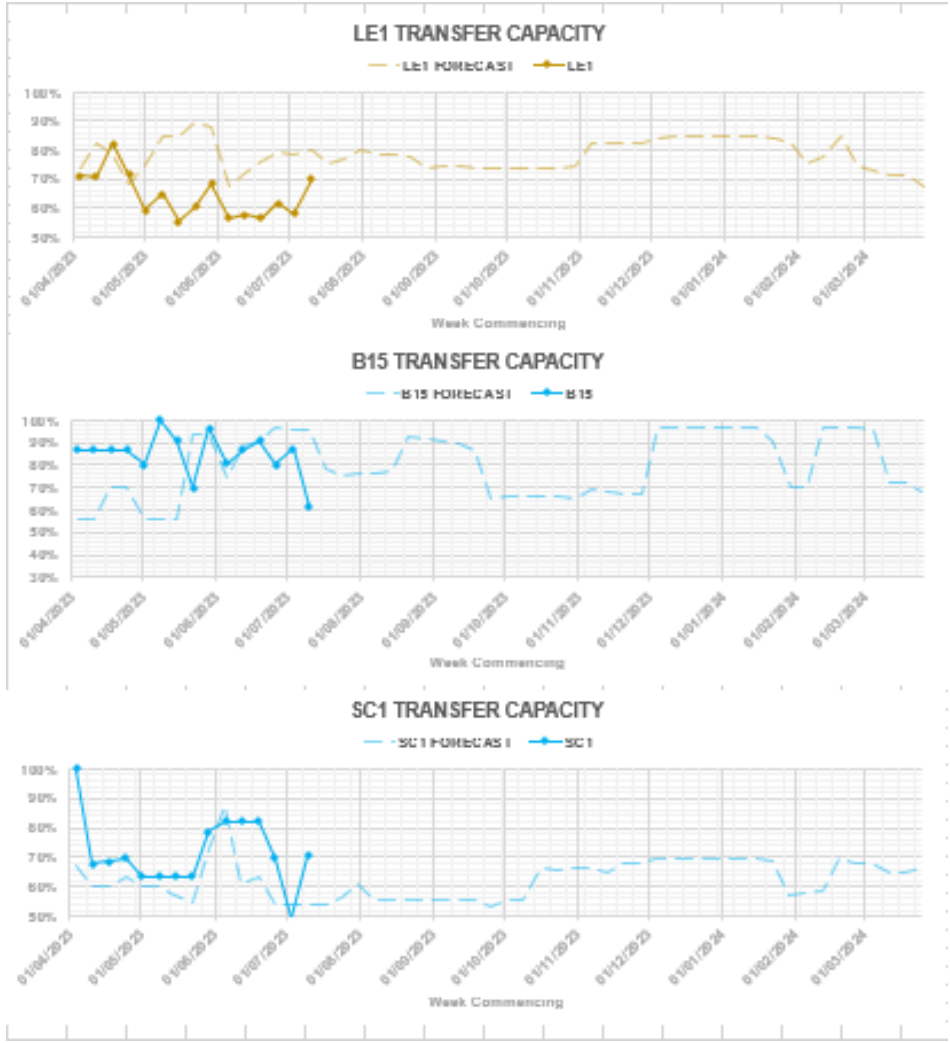
Transparency | Network Congestion



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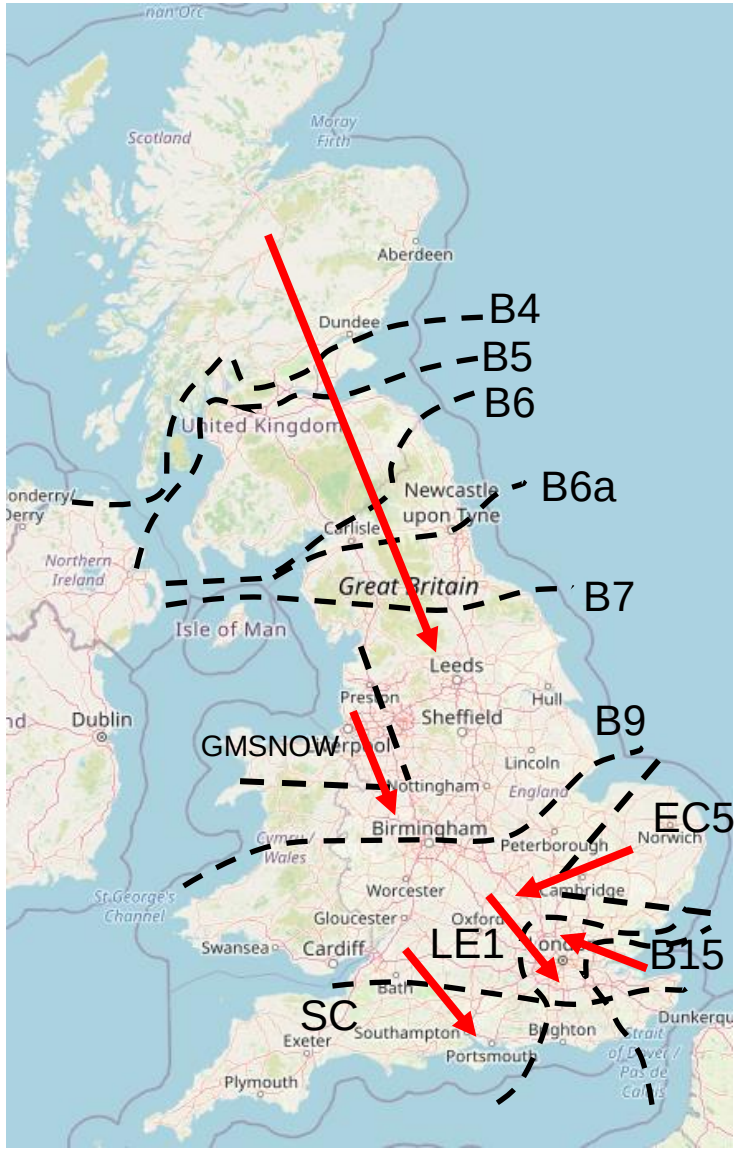

Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal:
https://data.nationalgrideso.com/data-groups/constraint-management

Questions from last week

Q: DCL requirements have clearly increased since July 1st, but this information wasn't broadcast in the August FFR MIR and wasn't in the 4-day DC forecast until today, sending false signals to the market and causing very high DC prices. Why the increase and why wasn't this publicised ahead of delivery?

A: Due to the recent oscillations detected in Scotland we have increased the DCL requirements for any required periods. This is driven by the risks associated with the frequency oscillations during the low demand and inertia periods. We have updated our rolling 4 day forecast to reflect this but will continue to review and revise the requirements and forecasts.

We have taken measures to ensure system security, including holding increased levels of response and synchronised generation to manage the inertia and fault levels and the network configuration has been optimised.

Q: Is there any possibility of getting DFS utilisation data broken down by provider? There are discrepancies between what we see from Elexon BSAD data (14 days post) and NGESO's data we would like to better understand.

A: ESO do not currently publish individual providers performance data across our range of balancing services. We will be publishing a year 1 DFS review report this summer which will look at delivery of the service at a whole. We hope this will be useful for the market in any analysis or reflection.

Questions from last week

Q: Is it possible to see a summary of all the units that were instructed up and down on 1st and 2nd July (or any other day) - other than searching individual BMU IDs in Elexon? Thanks.

A: Are you aware of Elexon BSC Insights Solution? This application has been built by Elexon to provide an alternative way to access the dataset behind BMRS (Balancing Mechanism Reporting Service).

It includes a range of predefined reports which can be filtered, for example: under the Balancing tab you will find Balancing Mechanism data by market view | Insights Solution (elexon.co.uk) which produces an exportable list of all the BOA (Bid Offer Acceptances) for a specific settlement period.

And provides API (Application Programming Interface) which allow access to the dataset behind BMRS.

API documentation | Insights Solution (elexon.co.uk)

Questions from last week

Q: Thanks Nick for your answer to my previous question on the sale of 22/23 coal stock. Compared to coal prices in Q3/4 2022, the prices have now come down by c 65%. Does this mean, ESO would passthrough additional cost as a result of the sale of coal at a low price into BSUoS @ RF? Thanks

A: The final coal sales are currently being completed and while the market value of coal has decreased significantly, we still expect revenue from the sales, net of logistic costs, to be positive and therefore a small decrease to the price of BSUoS. We will share final numbers later in the year once we are certain.

Q: Is it possible to access your week-ahead demand forecast numbers and the errors associated with it?

A: Currently we publish the 7 days ahead forecast and historical dataset at cardinal point level. There is a 2-14 days ahead dataset published at half hourly level, however this is currently only the latest version, updated daily.

You can find the actual outturns in the 'Day Ahead Half Hourly Demand Forecast Performance' dataset, which also shows calculated errors in day ahead forecasts.

If there is enough interest we could investigate publishing historical datasets of the week ahead forecast at half hourly level, though this is slightly more tricky owing to the size of the dataset.

You can find these datasets on the ESO data portal here: https://data.nationalgrideso.com/

Questions from last week

Q: What is the rationale behind the NG PK demand changes for winter 23 from 30-Oct (between 700MW and 1500MW drop in peak demand)? Are there scheduled reviews and updates to ESO demand forecasts, and visibility of those dates across the year?

A: For this question, we're assuming you are referencing the long term (52 week ahead) demand forecast.

The models that generate this demand forecast are retrained twice annually, applying separately to the GMT and BST sections of the year. Based on this retraining, the forecast values reduced.

Q: You mentioned that there was a large (6GW?) wind forecast error in the waterfall slides. Can you elaborate? What forecast is this? Was this generator switching off (i.e. acting rationally) due to low prices or was this an overstatement of PNs?

A: Forecast errors can arise from many sources. The largest contributor is often the weather – when difficult conditions arise, the wind speed forecasts we receive from externally can have significant error, which causes large generation forecast errors.

Negative wind energy prices can have an effect on wind generator behaviour, and we are investigating how best to include this in our day ahead forecasts.

Outstanding Questions

Q: Is there any reason why forecasted DC requirements cannot be published nearer to the auction time? Monday (3/7) saw an overprocurement of DCL between 15-28% compared to forecasted procurement volumes. What fundamentals are changing from forecast time to the auction time to justify this?

Q: My question at OTF re the system outage, there were a few things I had in mind:

• Can NGESO explain what happened and what has been done to increase resilience going forward?

• Can IT people in the industry learn any lessons from what happened to NGESO's system? Sharing any lessons would be sensible?

• While the systems were down NGESO had to balance the system. Did it use any small plants, or did it have to concentrate on large plants as the reliance on faxes (which I know are going by 2025) means using smaller plants is impractical? If faxes were not practical for smaller plants then should we stop them needing to buy them now, not wait for 2025?

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