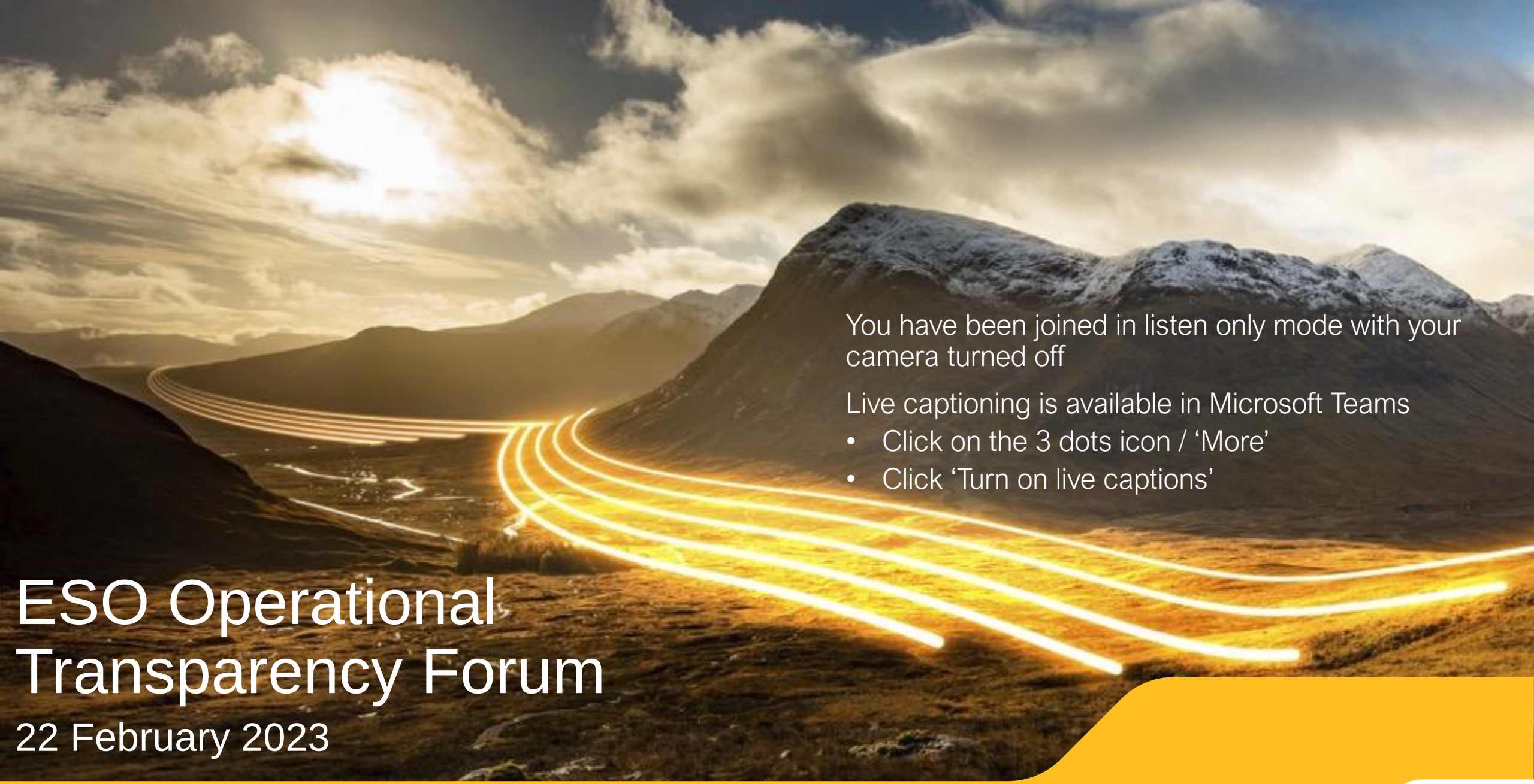


You have been joined in listen only mode with your camera turned off

Live captioning is available in Microsoft Teams

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

ESO Operational Transparency Forum

22 February 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. If you do not feel able to ask a question in this way please use the email: 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 / response topics

Coming soon

Interconnectors and Emergency Actions focus area – 1st March

Balancing Markets Winter Costs review (November, December, January, February) – 22nd March

Future

Reserve Reform update

Response markets deep dive

System Inertia

Feedback welcomed on our proposed deep dive topics

Winter Enhanced Actions

Service instructions

The following BM Start-Up instructions were issued over this period:

BMU ID	Instruction Issued	Instruction Cancelled	Notes

Demand Flexibility Service Advanced Anticipated Requirements Notice were issued on 12 February for 13 February (Monday):

BMU ID	Instruction Issued	Instruction Cancelled	Notes
DFS	15/02/23 10:20	N/A	BMRS – test 17:00-18:00 on 16 Feb
DFS	20/02/23 09:59	N/A	BMRS – test 17:30-18:30 on 21 Feb

For clarity, going forward we intend to issue a BMRS message for any actions relating to the winter contingency units.

Network Access Planning OC2 Forum 07/03/2023

Overview

The Network Access Planning (NAP) team within the ESO are hosting a forum for all parties who have a stake in the outage planning process. It is open to transmission owners, distribution network owners, generators, directly connected transmission customers and anyone else who has a relationship with our Outage Planning teams.

Purpose

This will be our first face to face OC2 Forum since before the start of the pandemic and we are very much looking forward to seeing as many of you as possible. We intend to talk through a variety of topics and hear your views on them.

Topics for discussion to include

- NGESO constraint forecasting methodologies.
- eNAMS developments
- Rationalisation of the OC2 code
- Future automation tools and technologies.
- PODE (planning and data exchange)
- Our BP2 activities

Invites and draft agenda were circulated in mid January to all NAP contacts but we have spaces available and would welcome the opportunity to host as many of you as possible. The time spent on each topic will be determined by consensus and there are voting options in the registration form.

Details of the Event

Date/Time

Tuesday 7th March 09:00 – 17:00

Location

Holiday Inn,

Birmingham Airport - NEC,

Coventry Road,
BIRMINGHAM,

B26 3QW

Register

REGISTRATION FORM

For further details please contact

box.OC2forum@Nationalgrideso.com

-

Frequency Risk and Control Report (FRCR) 2023 Consultation

13 – 24 February 2023

- In line with SQSS requirement, we are obliged to produce an annual Frequency Risk and Control Report (FRCR) and consult with industry on the methodology and assessment presented in the report.
- This year the focus is reviewing minimum inertia policy.
- **We will be consulting on the 2023 version of FRCR between the 13th and 24th February 2023.**
- The consultation and associated documents will be published on our website on Monday 13th February. Previous FRCR documentation can be **found here.**

- We held a webinar on **Monday 20th February 14:00-15:00**, mid-way through the consultation period to provide further insight into the proposal and take any initial feedback on the proposals ahead of the consultation period closing.

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

Please send your response proforma to box.sqss@nationalgrideso.com by 5pm on Friday 24th February 2023.

Relevant Balancing Services (RBS) Guidelines Official Consultation

We welcome industry's views on the proposed changes within our consultation.

We are consulting on proposed changes to the RBS guidelines.

NGESO welcomes industry views on the proposed changes to the RBS guidelines, and **responses are required by close of play on 2 March.**

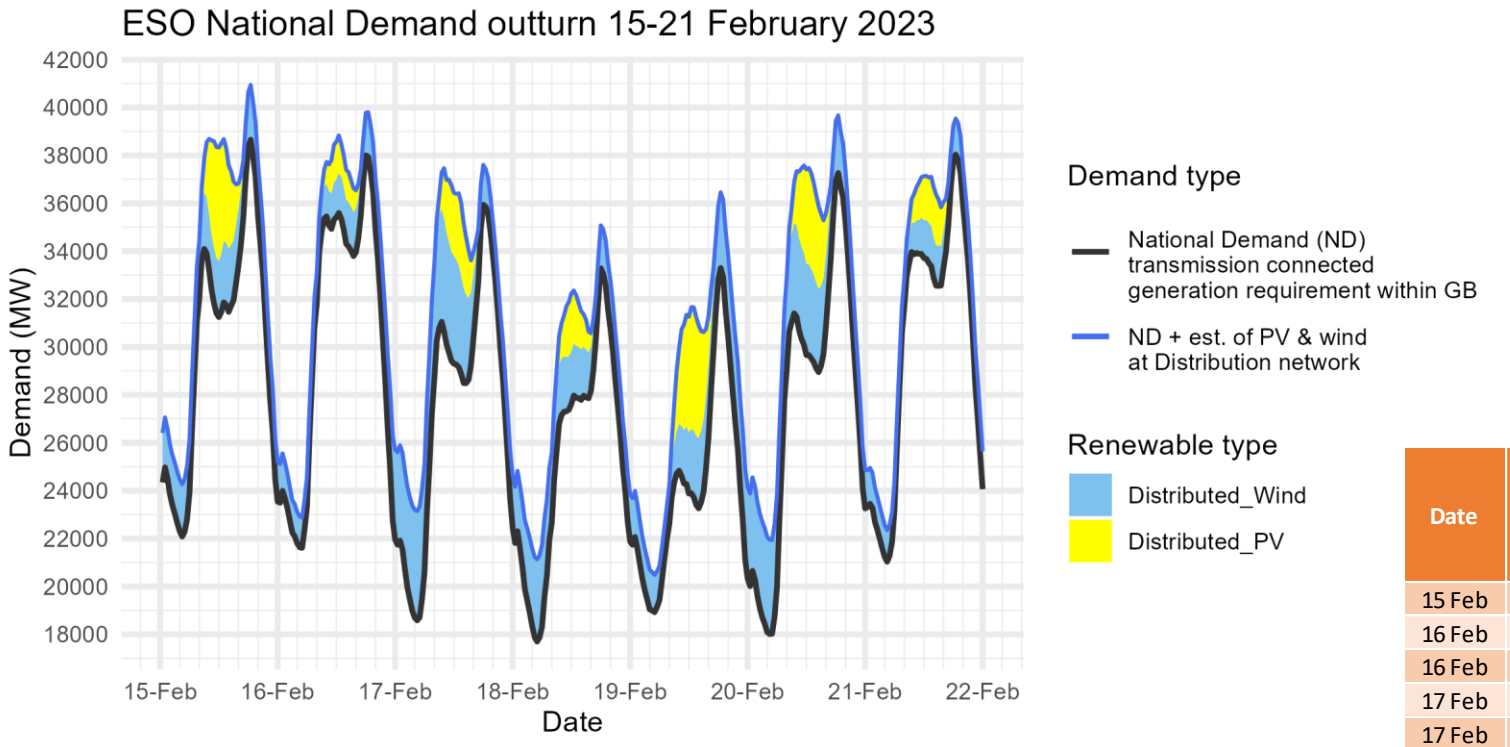
After industry responses are submitted, NGESO will produce a report summarising the final recommended changes to be sent to Ofgem for review. A decision is anticipated by 6 April, with RBS guidelines expected to be updated by or before 13 April.

All ‘Official’ consultation material can be found on the EMR Website, under Capacity Market Guidance; Consultation documents here

Sign up for notifications on RBS publications and updates

Any questions, please contact balancingservices@nationalgrideso.com

Demand | Last week demand out-turn



		FORECAST (Wed 15 Feb)		OUTTURN			
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	National Demand (GW)	Triad Avoidance est. (GW)	N. Demand adjusted for TA (GW)	Dist. wind (GW)
15 Feb	Evening Peak	38.8	2.2	38.7	0.0	38.7	2.3
16 Feb	Overnight Min	23.1	1.4	21.6	n/a	n/a	1.3
16 Feb	Evening Peak	39.0	1.8	38.0	0.0	38.0	1.8
17 Feb	Overnight Min	18.7	3.9	18.6	n/a	n/a	4.6
17 Feb	Evening Peak	35.2	3.0	35.9	0.0	35.9	1.7
18 Feb	Overnight Min	20.0	1.5	17.7	n/a	n/a	3.4
18 Feb	Evening Peak	34.7	0.7	33.3	0.0	33.3	1.8
19 Feb	Overnight Min	20.0	1.2	18.9	n/a	n/a	1.6
19 Feb	Evening Peak	35.5	1.3	33.3	0.0	33.3	3.2
20 Feb	Overnight Min	20.7	1.4	18.0	n/a	n/a	3.9
20 Feb	Evening Peak	38.9	1.7	37.3	0.0	37.3	2.4
21 Feb	Overnight Min	21.6	1.7	21.0	n/a	n/a	1.3
21 Feb	Evening Peak	39.0	1.8	38.0	0.0	38.0	1.5

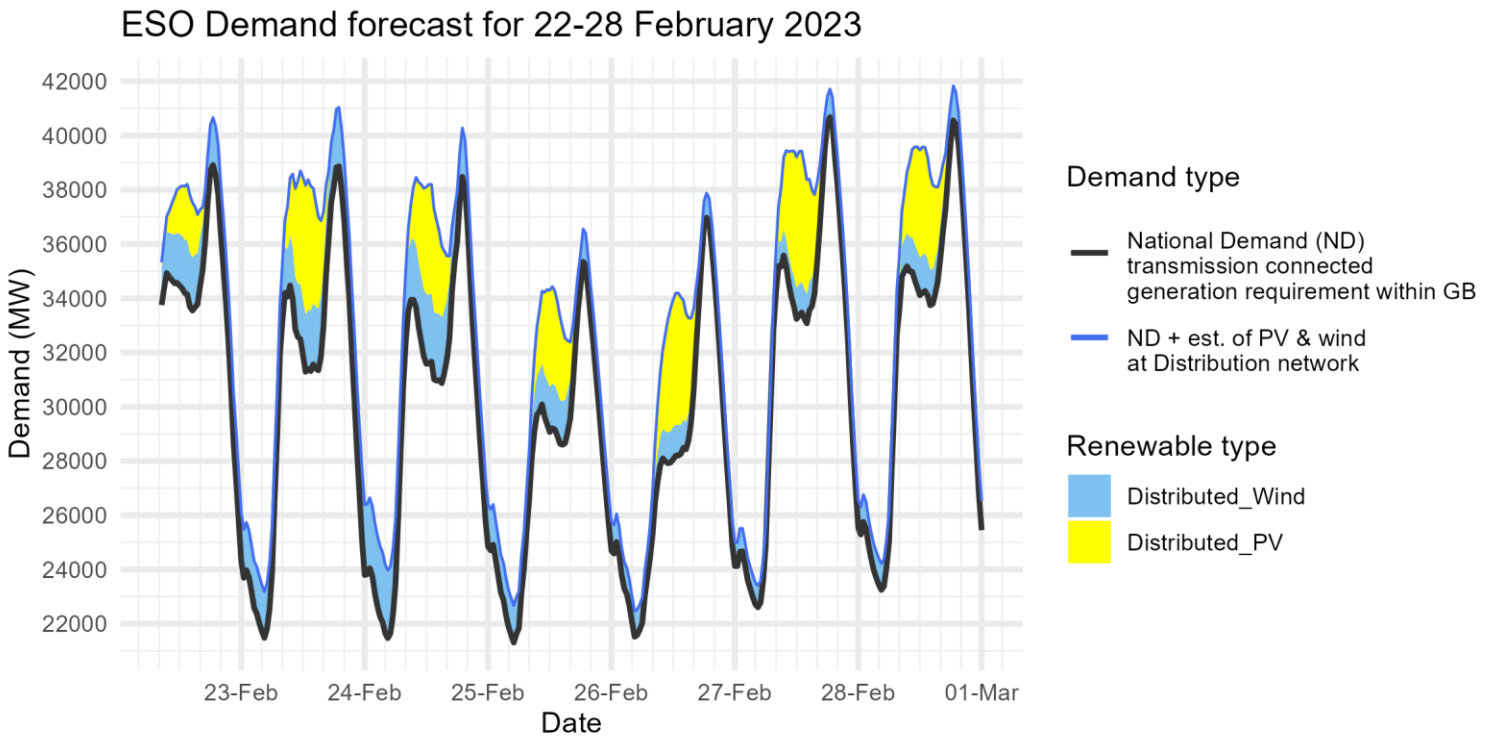
The black line (National Demand ND) is the measure of portion of total GB customer demand that is supplied by the transmission network.

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 Ahead



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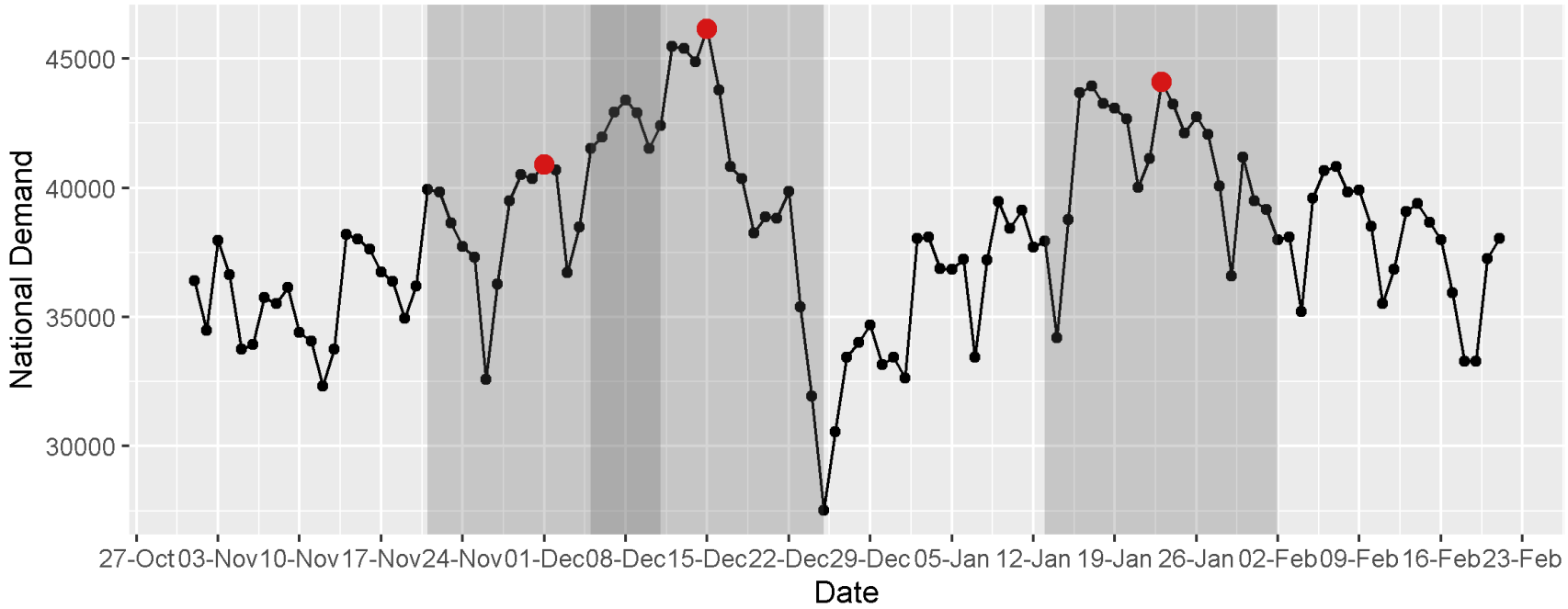
22 Feb 2023	Evening Peak	38.9	1.7
23 Feb 2023	Overnight Min	21.5	1.7
23 Feb 2023	Evening Peak	38.9	2.2
24 Feb 2023	Overnight Min	21.5	2.5
24 Feb 2023	Evening Peak	38.5	1.8
25 Feb 2023	Overnight Min	21.3	1.4
25 Feb 2023	Evening Peak	35.3	1.2
26 Feb 2023	Overnight Min	21.5	0.9
26 Feb 2023	Evening Peak	37.0	0.9
27 Feb 2023	Overnight Min	22.6	0.8
27 Feb 2023	Evening Peak	40.7	1.0
28 Feb 2023	Overnight Min	23.2	1.0
28 Feb 2023	Evening Peak	40.6	1.2

Triad avoidance: indicative triad data based on operational metering



ESO operational metering			
Date	Time of peak (HH ending)	National Demand (MW)	Estimated triad avoidance (HH corresponding with the time of the peak) (MW)
15/12/2022	1730	46147	0
23/01/2023	1800	44109	200
01/12/2022	1800	40909	200

ESO does not include station load.

Indicative triad demand on Elexon's BMRS website quotes "GB Demand" which is based on the Transmission System Demand definition (it adds 500MW of station load onto the National Demand). Also, it shows time as half hour **beginning**.

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 February and is subject to change. It represents a view of what the market is currently intending to provide before we take any actions. The interconnector flows are equal to those in the Base case presented in the Winter Outlook.

The indicative surplus is a measure of how tight we expect margins to be and the likelihood of the ESO needing to use its operational tools.

For higher surplus values, margins are expected to be adequate and there is a low likelihood of the ESO needing to use its tools. In such cases, we may even experience exports to Europe on the interconnectors over the peak depending on market prices.

For lower (and potentially negative) surplus values, then this indicates operational margins could be tight and that there is a higher likelihood of the ESO needing to use its tools, such as issuing margins notices. We expect there to be sufficient supply available to respond to these signals to meet demand.

Margins are adequate for the next week. This is based on our current assessment and is subject to change.

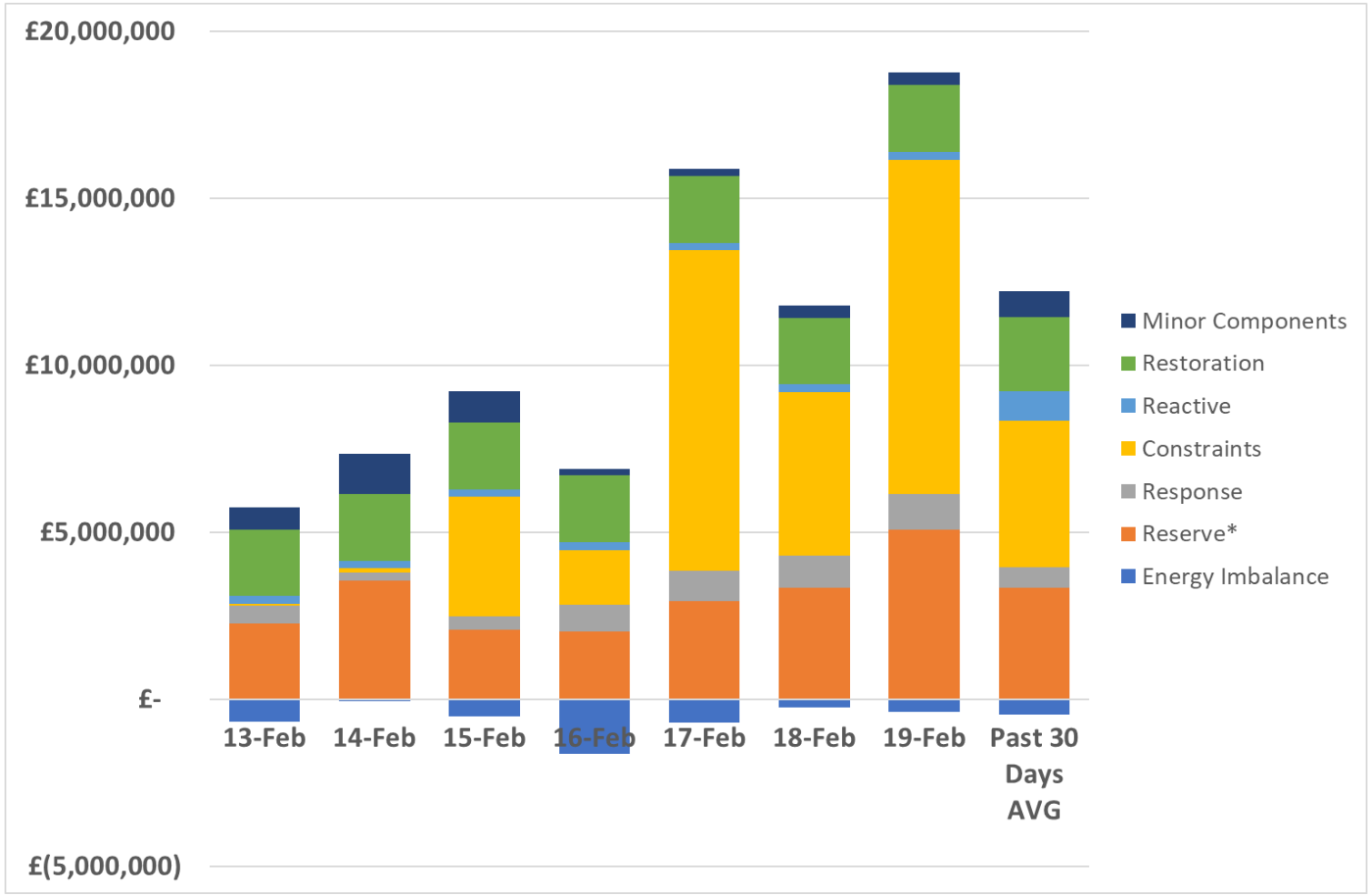
Day	Date	Notified Generation (MW)	Wind (MW)	IC Flows* (MW)	Peak demand (MW)	Indicative surplus (MW)
Thu	23/02/2023	40356	9260	4400	39450	9040
Fri	24/02/2023	40369	9400	4400	38480	11050
Sat	25/02/2023	40534	6720	4400	36210	10870
Sun	26/02/2023	41592	2820	4400	37530	6670
Mon	27/02/2023	41902	3580	4400	41180	4080
Tue	28/02/2023	42773	4650	4400	41200	5960
Wed	01/03/2023	42599	3650	4400	41600	4410

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

Margins do not include NGESO enhanced or emergency actions (Outlined here: download (nationalgrideso.com))

Adequate when Indicative Surplus >= 1000 MW

ESO Actions | Category costs breakdown for the last week



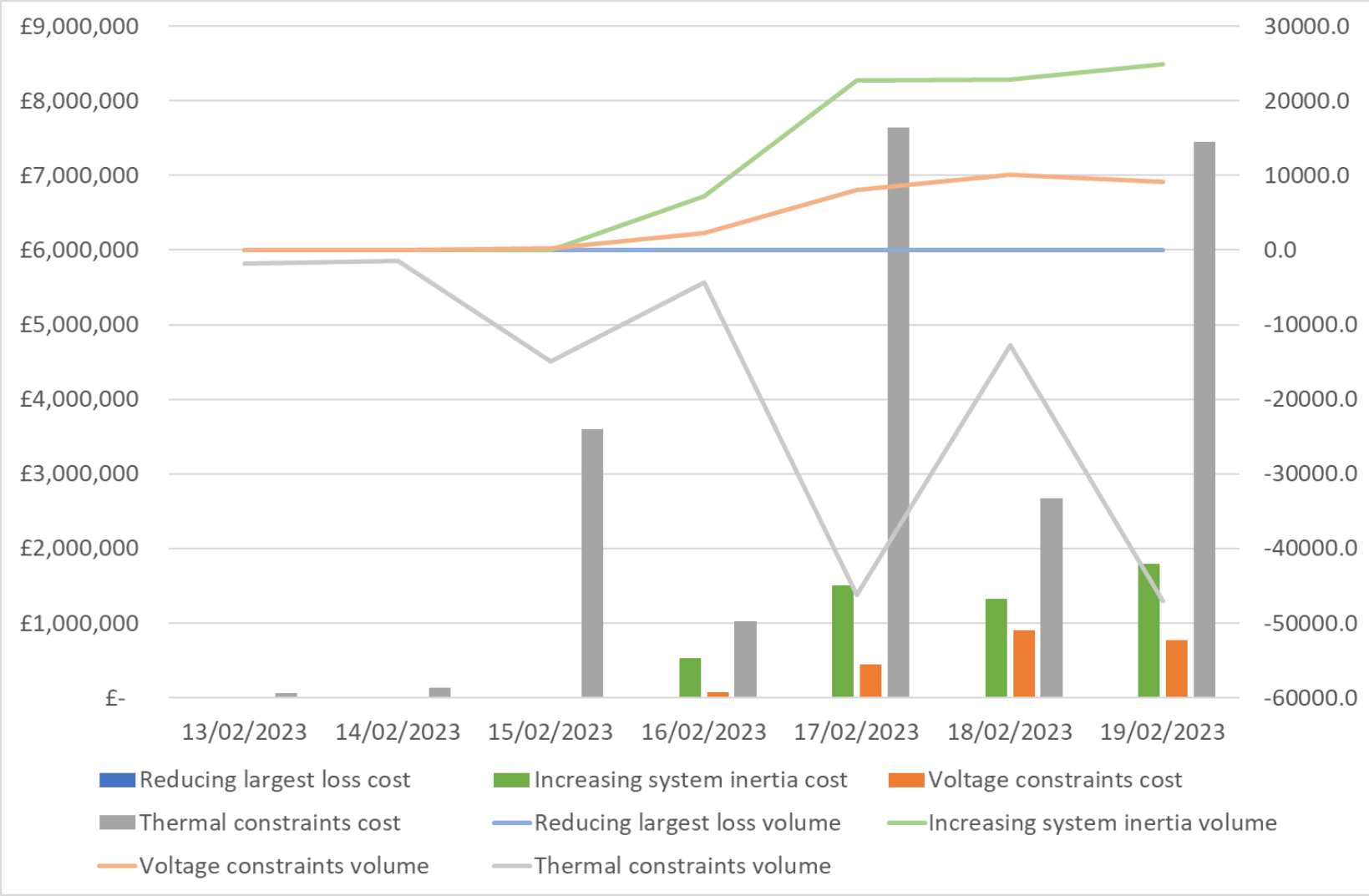
Date	Total (£m)
13/02/2023	5.0
14/02/2023	7.3
15/02/2023	8.7
16/02/2023	5.2
17/02/2023	15.2
18/02/2023	11.5
19/02/2023	18.4
Weekly Total	71.4

Reserve and Constraints costs were the key cost component throughout 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



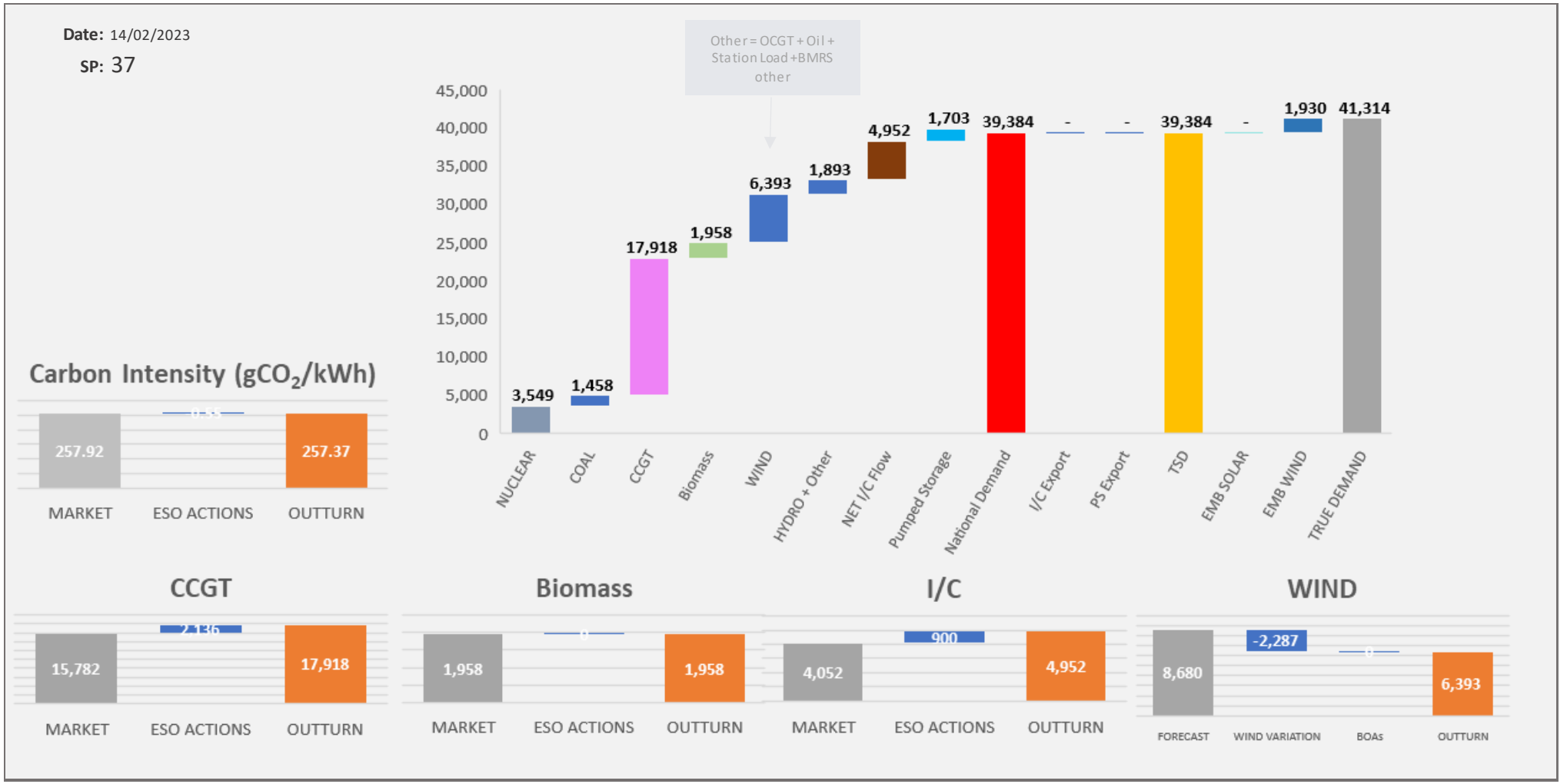
Thermal – network congestion
Actions required to manage Thermal Constraints throughout the week with highest costs on Wednesday, Friday and Sunday.

Voltage
Intervention was required to manage voltage levels on Thursday onwards.

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

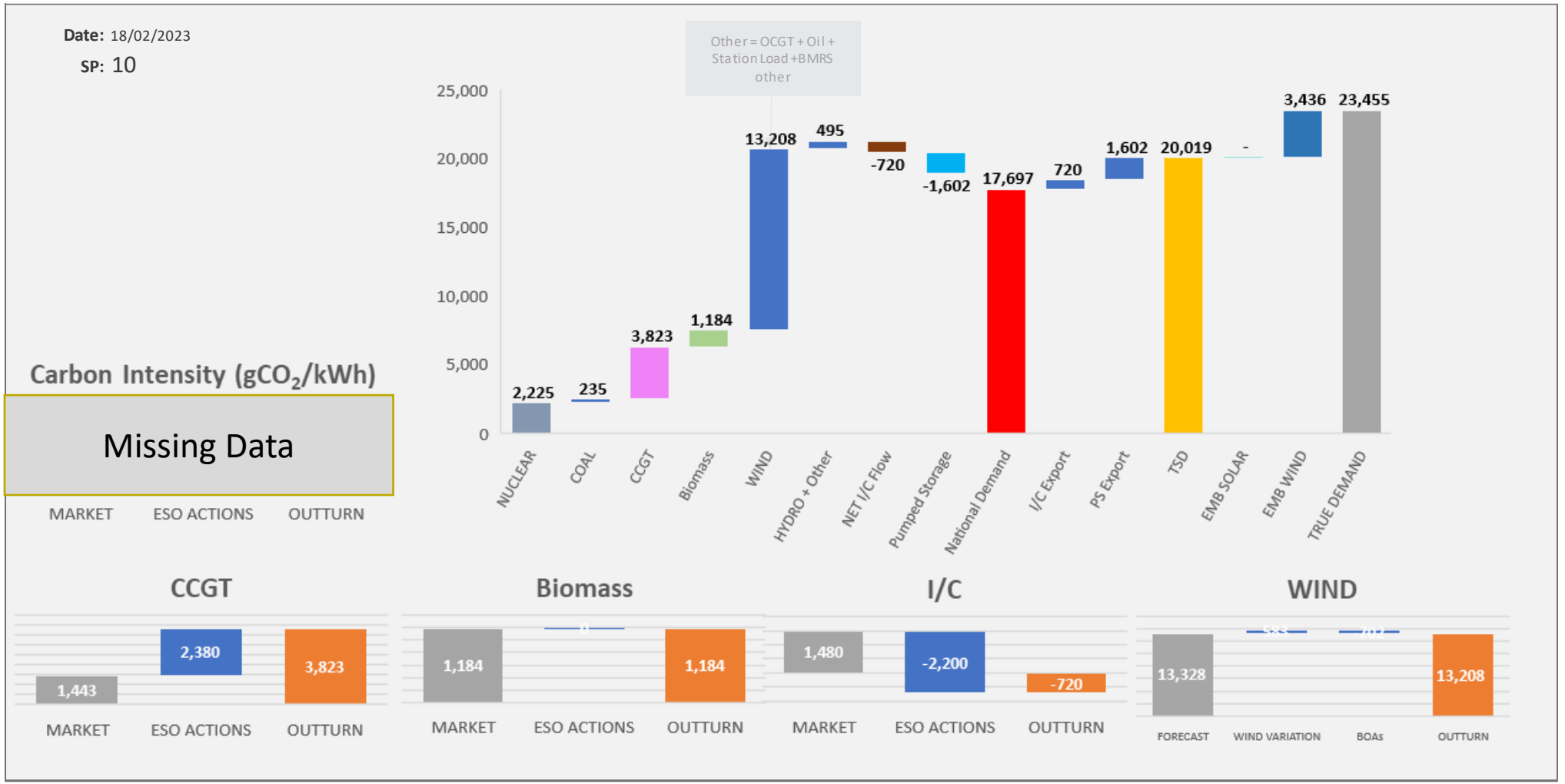
Increasing inertia
Intervention was required to manage system inertia from Thursday onwards.

ESO Actions | Tuesday 14 February – Peak Demand – SP spend ~£149k



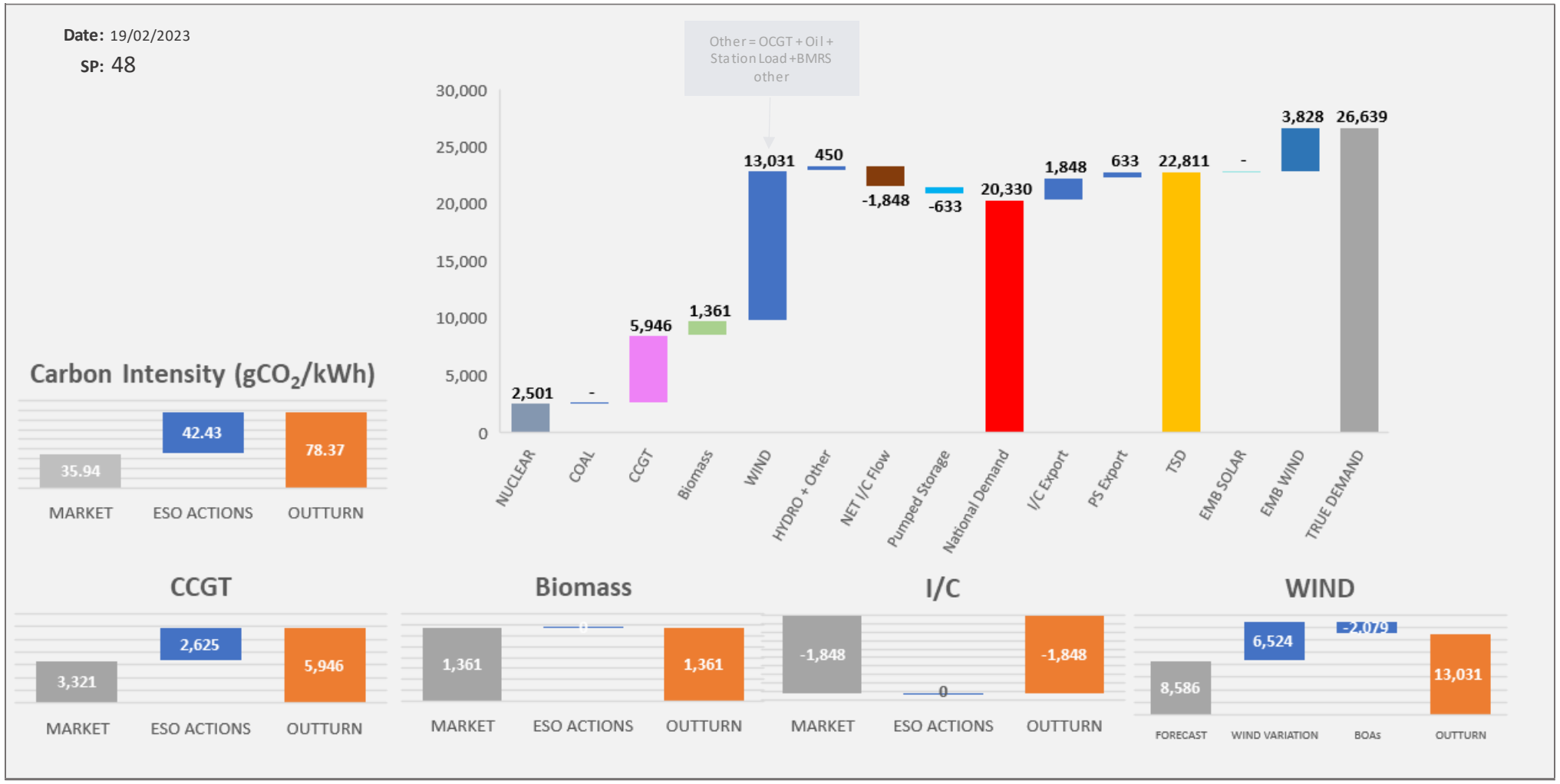
Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

ESO Actions | Saturday 18 February – Minimum Demand – SP Spend ~£302k



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

ESO Actions | Sunday 19 February – Highest SP Spend ~£645k



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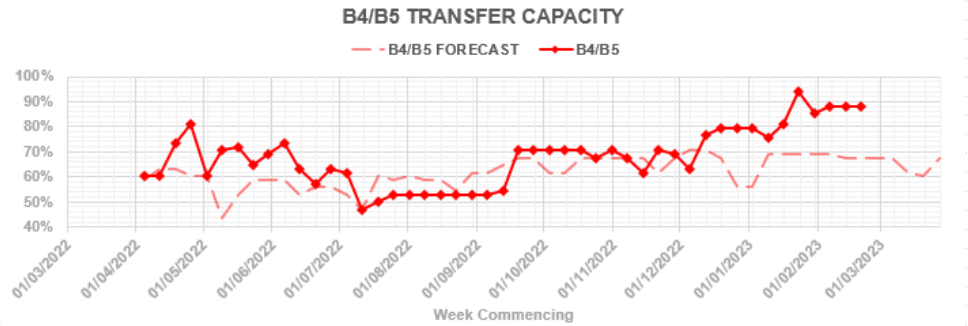
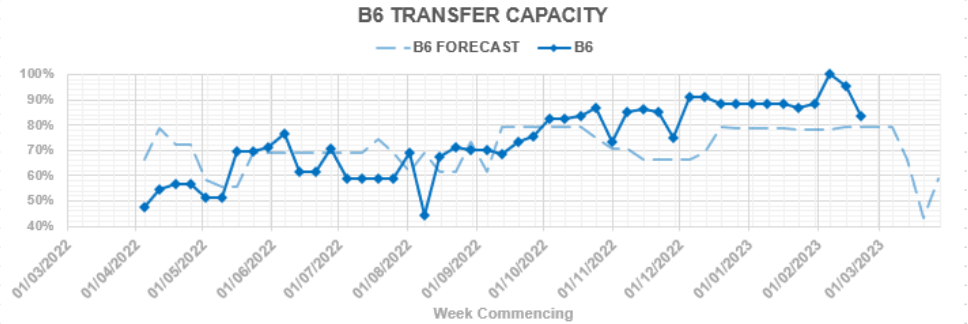
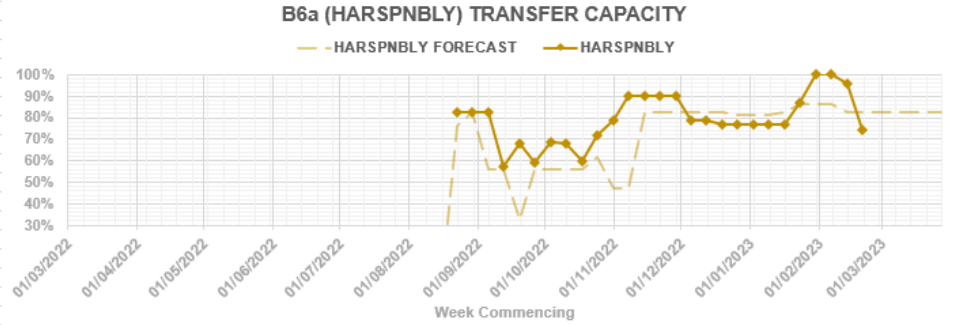
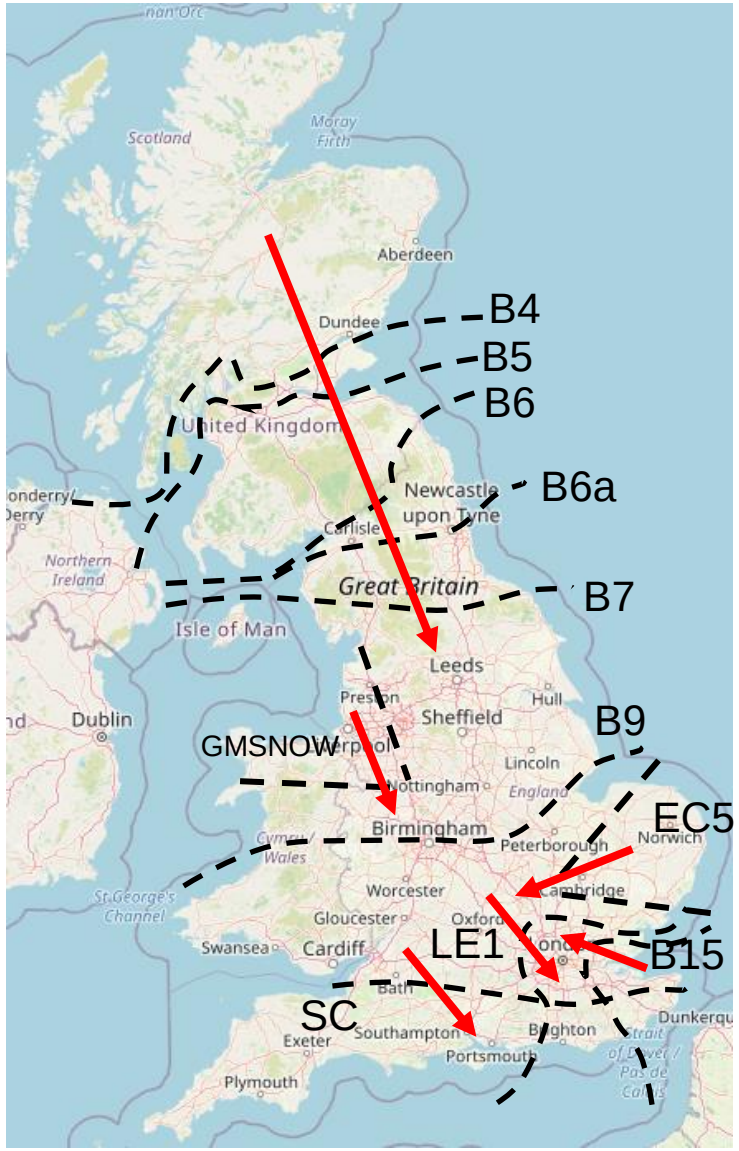
Transparency | Network Congestion





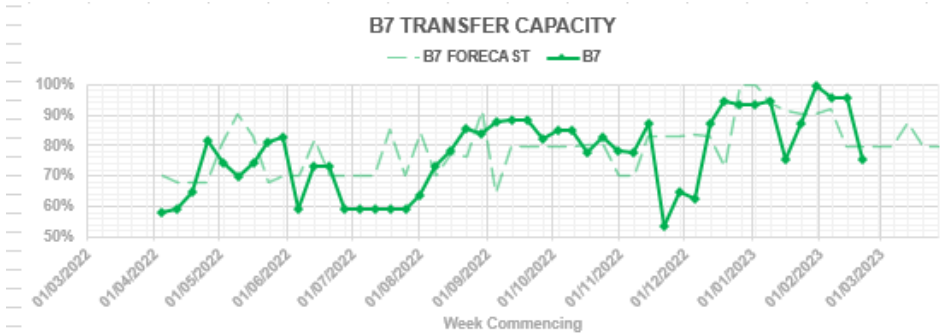


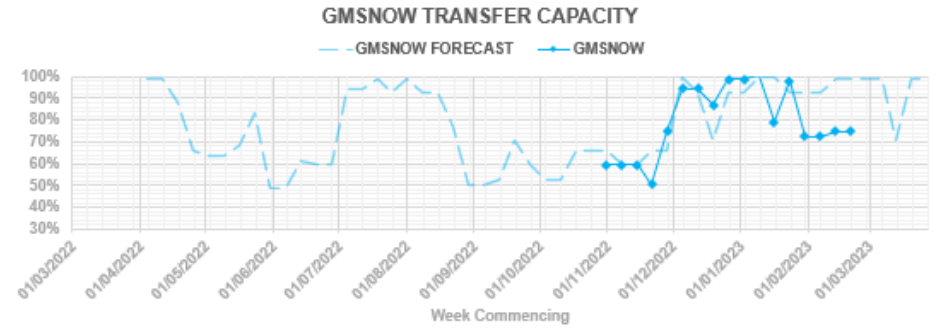
Boundary	Max. Capacity (MW)
B4/B5	3000
B6	5700
B6a	5200
B7	7000
GMSNOW	3400
B9	10500
EC5	5000
LE1	8500
B15	7500
SC	7300

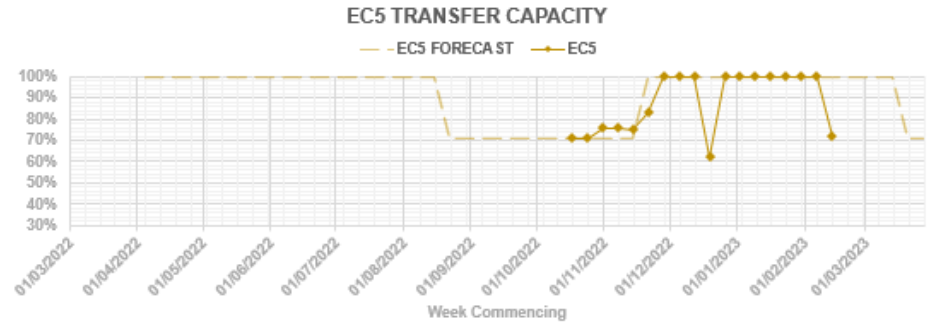


Day ahead flows and limits, and the 24 month constraint limit forecast are published on the ESO Data Portal:
https://data.nationalgrideso.com/data-groups/constraint-management

Transparency | Network Congestion







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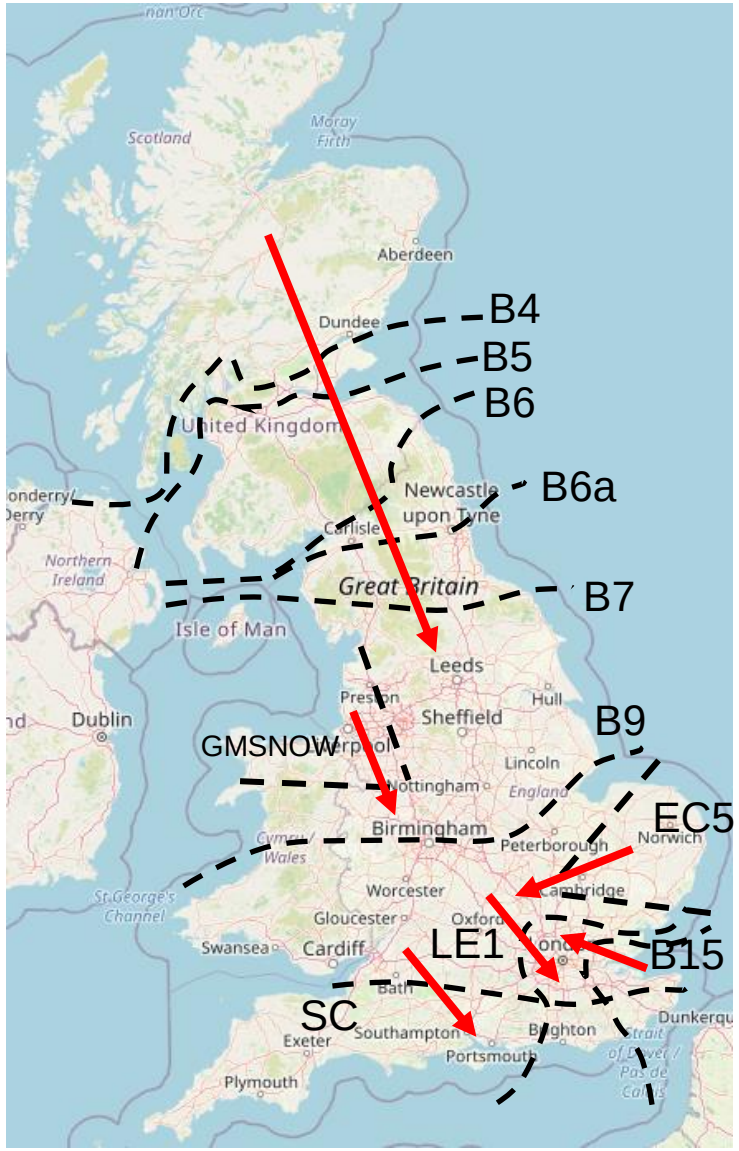

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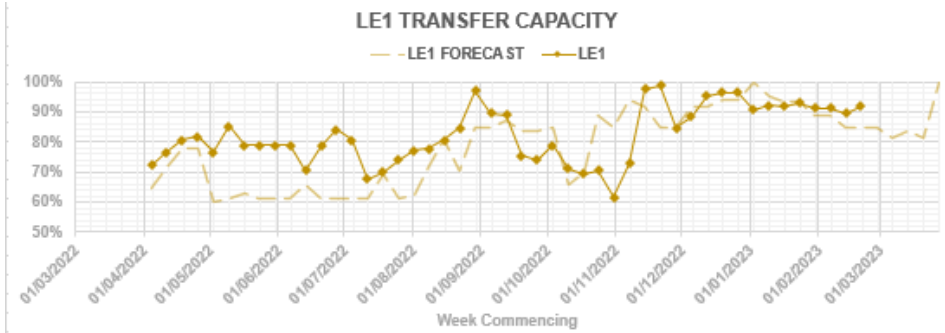
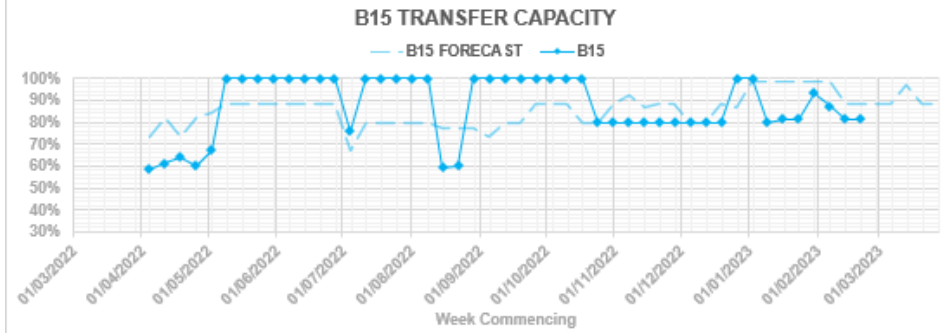
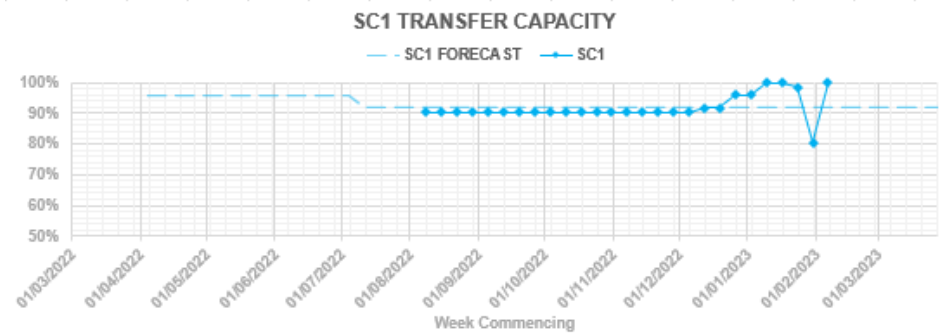
Transparency | Network Congestion







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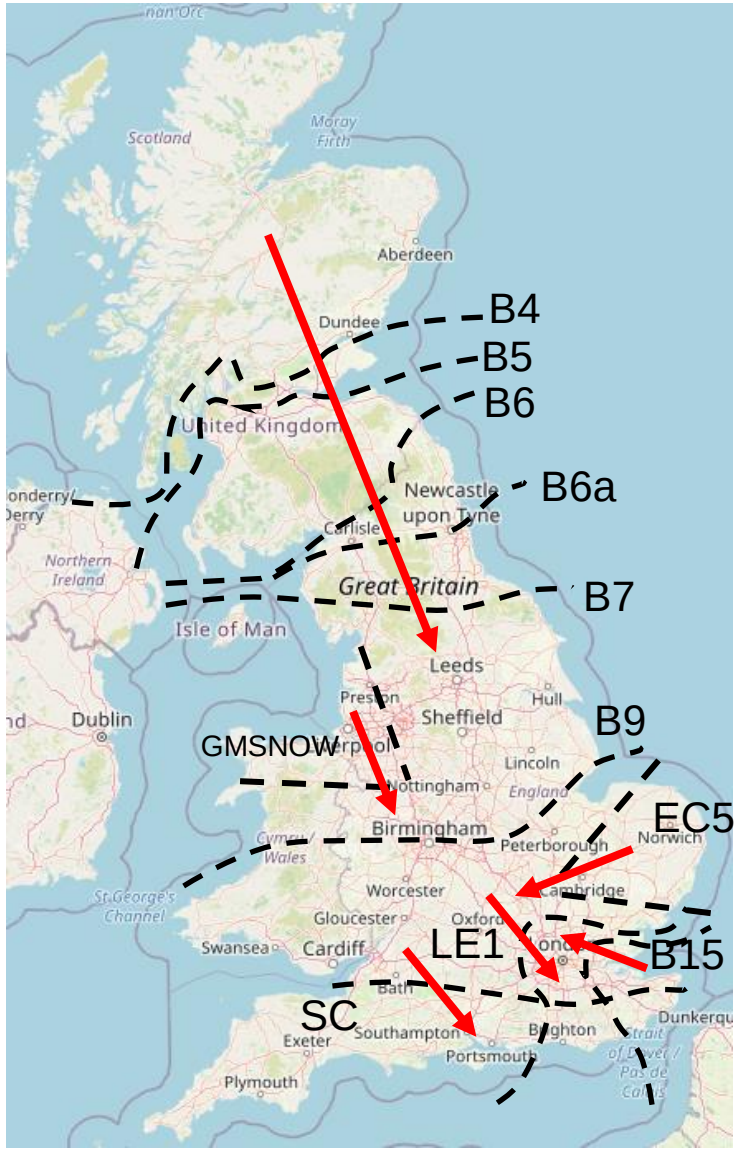

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https://data.nationalgrideso.com/data-groups/constraint-management

Previously asked advanced questions

Q: Every year the ESO publishes incentivised forecasts ‘National Demand ACS Peak (Incentivised Demand)’ for one year ahead and four year ahead winters in a “Demand Incentive Letter” and these are used in the process of recommending the amount of capacity to be purchased in the Capacity Market auctions. Please can you provide the comparable outturn demand for each year that has been subject to an incentivised forecast (or provide a link to where this data is published).

A: We provide this information in the Electricity Capacity Report and the associated Data Workbook.

https://www.emrdeliverybody.com/CM/Guidance.aspx

Q: Regarding the question about SO-SO trade prices in today's transparency forum. What is meant by Excess Energy SO-SO Trading service? Is this different from BALIT? If it's different from BALIT, when is it used and where can we find BALIT prices? Does this apply to emergency assistance?

A: Excess Energy is an SO-SO Trading service between NGESO and RTE (French System Operator). It can be requested by either SO once market nominations are firm to exchange energy under non-emergency arrangements. BALIT is no longer an active service since the introduction of TERRE by some EU SOs. Emergency Assistance is separate to both Excess Energy and BALIT.

Previously asked advanced questions

Q: The average clearing price for Dynamic Regulation for delivery on 14/2/2023 was £18.80/MW/hr for 70MW. There was an alternative solution which would have delivered 80MW of volume at a cheaper rate of £10/MW/hr. The result was that one optimiser, Tesla, secured 100MW of DRH and 70MW of DRL at inflated prices at the expense of all other participants. How did this happen? This is not an isolated case.

A: The results for the 14th of Feb are as expected. The EPEX Helena algorithm works by finding the set of bids that maximises total market welfare. In the example given, the bids that include 100MW at £0 in DRH and 80MW at £10 in DRL from Provider A deliver less supplier welfare than the bids from Provider B which include 100MW at £0 DRH and 51MW at £0 in DRL. The larger supplier welfare delivered by Provider B outweighs the reduction in Buyer welfare of buying less volume at increased clearing price.

We will provide a worked example of the welfare calculations used in the EPEX clearing algorithm as part of a future OTF response deep dive.

In the interim, the Helena algorithm is described more fully here in the “DC algorithm public document”:

https://www.nationalgrideso.com/industry-information/balancing-services/frequency-response-services/dynamic-containment?how-to-participate

Advanced questions

Q: With regard to the upcoming Interconnectors deep dive on 1/3/23 can I ask the following questions:

(1) How often have SO-SO trades been carried out. Can you give a working example of how this affects cashout since I suspect that these transactions do not make it to the 'first cut' cashout that is published on bmreports.com.

(2) Can you give an example of how the Emergency Actions affect cashout e.g. those carried out on 25/1/23. Again, I suspect that these transactions do not make it to the 'first cut' cashout that is published on bmreports.com so it would be good to see a 'before' and 'after' of the cashout calculations.

This has been passed thorough to the relevant team leading on the Interconnector deep dive and will be answered there. Thank you for providing this in advance.

Q: How many MW of capacity have so far expressed an interest in either having their connection agreement terminated or in reducing their TEC as part of the TEC amnesty process?

The TEC amnesty process is in place from 30 November 2022 until the end of April 2023 and we will be providing an update after this has concluded.

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