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

ESO Operational Transparency Forum

18 May 2022

nationalgridESO

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:
https://data.nationalgrideso.com/plans-reports-analysis/covid-19-preparedness-materials

Regular Topics

Questions from last week
Demand review
Costs for last week
Constraints

Focus Areas

BSUoS forecast update

Signposts to:
Frequency Response Reform Webinar
RFI Accessing Additional Voltage Capability
OTF stakeholder workshop

Questions outstanding from previous weeks

Q: How does our balancing cost compare to ENTSO-E partners? They whole ETYS process needs a revamp to reduce the workload and headaches of the operation room.

A: Not all ENTSO-E partners publish their system operating costs in the same way that we do. EirGrid do publish and have seen similar trends in cost changes that we have seen due to the changes in pricing.

The GB system is quite different to other ENTSO-E member countries due to our DC only interconnection. This results in greater volatility of system frequency which is a component of the balancing costs.

For comments and suggestions about ETYS please contact the team through the publications on their page on the website. https://www.nationalgrideso.com/research-publications/etys

Q: Is ETYS/NOA analysis considering the boundary capacity availably potentially around 90% during winter months for example in B6 boundary and consider N-2 fault criteria?

A: As part of the ETYS/NOA analysis, the Transmission Owners calculate the boundary capabilities for future generation and demand backgrounds resulting from the Future Energy Scenarios. In winter peak, we analyse the network without any planned outages, and we consider availability of reactive compensation plant. We consider seasonal boundary capability scaling factors where specific boundary capabilities are not provided for spring, summer, autumn or outage conditions.

These are explained within the NOA methodology section 2.62 (https://www.nationalgrideso.com/document/250206/download). For fault criteria we consider credible faults as defined within NETS SQSS Chapter 4 and 5 (https://www.nationalgrideso.com/document/189561/download) and this includes N-1, N-D and N-1-1 as appropriate for each Transmission Owner.

Questions outstanding from previous weeks

Q: Can you please present the reserve breakdown costs. The same way you already present for constraints.

A: We are developing these datasets and considering what we can provide in the slides and also through the data portal. Thank you for this suggestion as it helps us know what is useful for you.

Q: Please can NGESO state inertia in MWs MegaWattseconds (=MJ). You cannot measure the inertia of a rotating machine In a factory test in MVAs.

A: Thank you for the suggestion, this is not something we are intending to change as we are considering MVA.s to be equivalent to MW.s.

Q: Could you tell me please why no STOR was procured on 24th April?

A: We had some technical issues with the Salesforce STOR Auction Platform which meant the auction did not run on 24th April and that results were notified via a manual process. These technical issues have now been addressed and the auction (for service delivery on 29 April) is now back up and running as normal. All successful providers should have received email notification and results are published on our data portal https://data.nationalgrideso.com/ancillary-services/short-term-operating-reserve-stor-day-ahead-auction-results as per the BAU process.

Questions outstanding from previous weeks

Q: Will the ESO be publishing any further information on the methodology behind the DC price caps and how these are being calculated day to day?

A: A Frequency Response Reform webinar providing market insights and procurement information will take place on 26th May (more information in slide below).

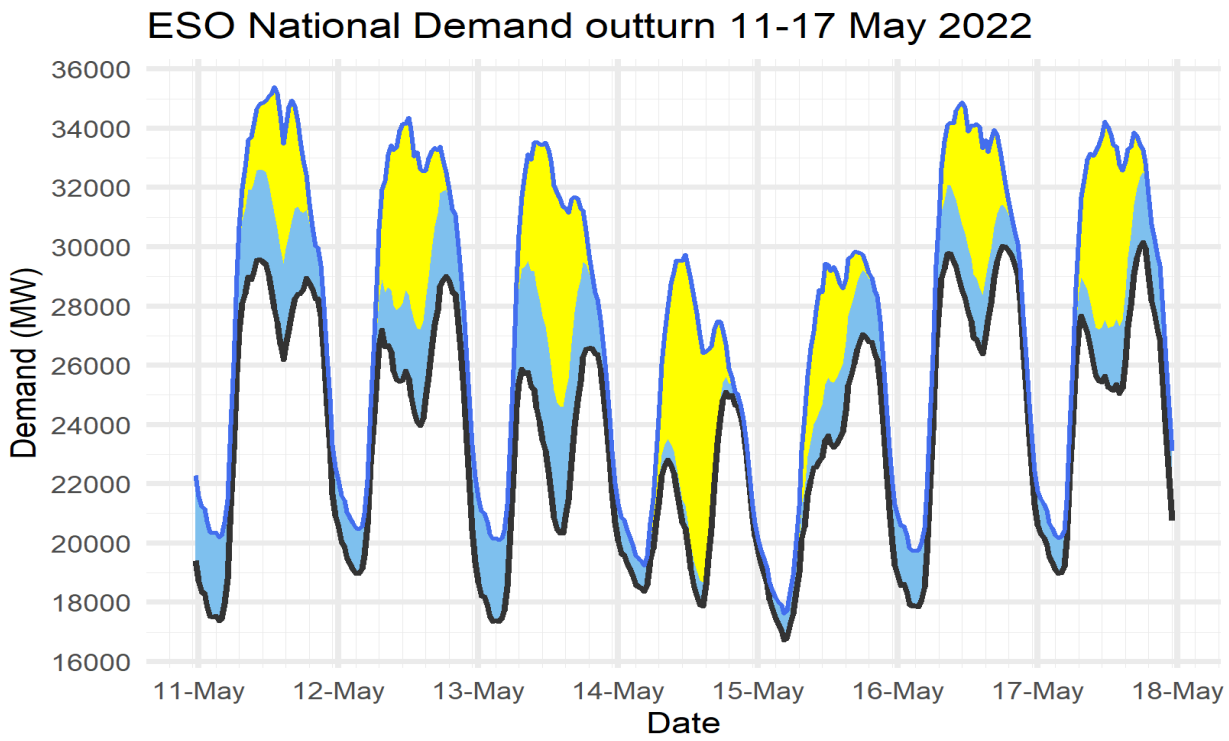
Q: Why do we need to secure inertia to 140 GVAs (0.125 Hz/s RoCoF) given the recent and planned Progress in ALoMPC ?

A: Our minimum inertia policy is part of the Frequency Risk and Control Policy which was consulted on and implemented as part of the first Frequency Risk and Control Report (FRCR) in 2021. A review of this policy will take place as part of this years FRCR process to assess the value of reducing this further.

Q: STOR for the 9th April cleared at £1.10 although there were a number of units (MORFL-1, MDLWH-1, BSPHM -1 GOSHS-1 & WTRLN-1) were rejected with bids between £0.03 - 0.11. Please can you comment on why these units were rejected when bidding considerably lower than the clearing price.

A: Regarding STOR auction incident on 9 April (TRN-1442), a full investigation has been carried out, and we can conclude that an isolated technical fault was the cause of the auction result which was not consistent with the conditions of the assessment algorithm. The auction bid validation rules preventing this from occurring have been tested and are working correctly. The incident and subsequent investigation has been communicated to OFGEM.

Demand | Last week demand out-turn



Demand type

- National Demand (ND) transmission connected generation requirement within GB
- ND + est. of PV & wind at Distribution network

Renewable type

- Distributed_PV
- Distributed_Wind

Date	Forecasting Point	FORECAST (Wed 11 May) National Demand (GW)	FORECAST (Wed 11 May) Dist. wind (GW)	FORECAST (Wed 11 May) Dist. PV (GW)	OUTTURN National Demand (GW)	OUTTURN Dist. wind (GW)	OUTTURN Dist. PV (GW)
11 May	Afternoon Min	24.9	3.3	4.3	26.2	3.2	4.0
12 May	Overnight Min	18.8	1.7	0.0	19.0	1.5	0.0
12 May	Afternoon Min	23.0	3.0	5.8	24.0	3.2	5.4
13 May	Overnight Min	17.4	3.0	0.0	17.3	2.8	0.0
13 May	Afternoon Min	20.0	4.2	7.5	20.3	4.3	7.0
14 May	Overnight Min	17.9	1.4	0.1	18.4	0.9	0.0
14 May	Afternoon Min	18.7	0.9	7.6	17.9	0.8	7.7
15 May	Overnight Min	17.4	0.6	0.2	16.7	0.9	0.0
15 May	Afternoon Min	19.2	1.4	6.4	23.2	2.2	3.9
16 May	Overnight Min	17.2	1.6	0.0	17.9	1.9	0.0
16 May	Afternoon Min	23.9	1.9	6.2	26.4	2.0	4.9
17 May	Overnight Min	18.5	1.1	0.0	19.0	1.2	0.0
17 May	Afternoon Min	24.4	2.1	5.4	25.1	2.3	5.5

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

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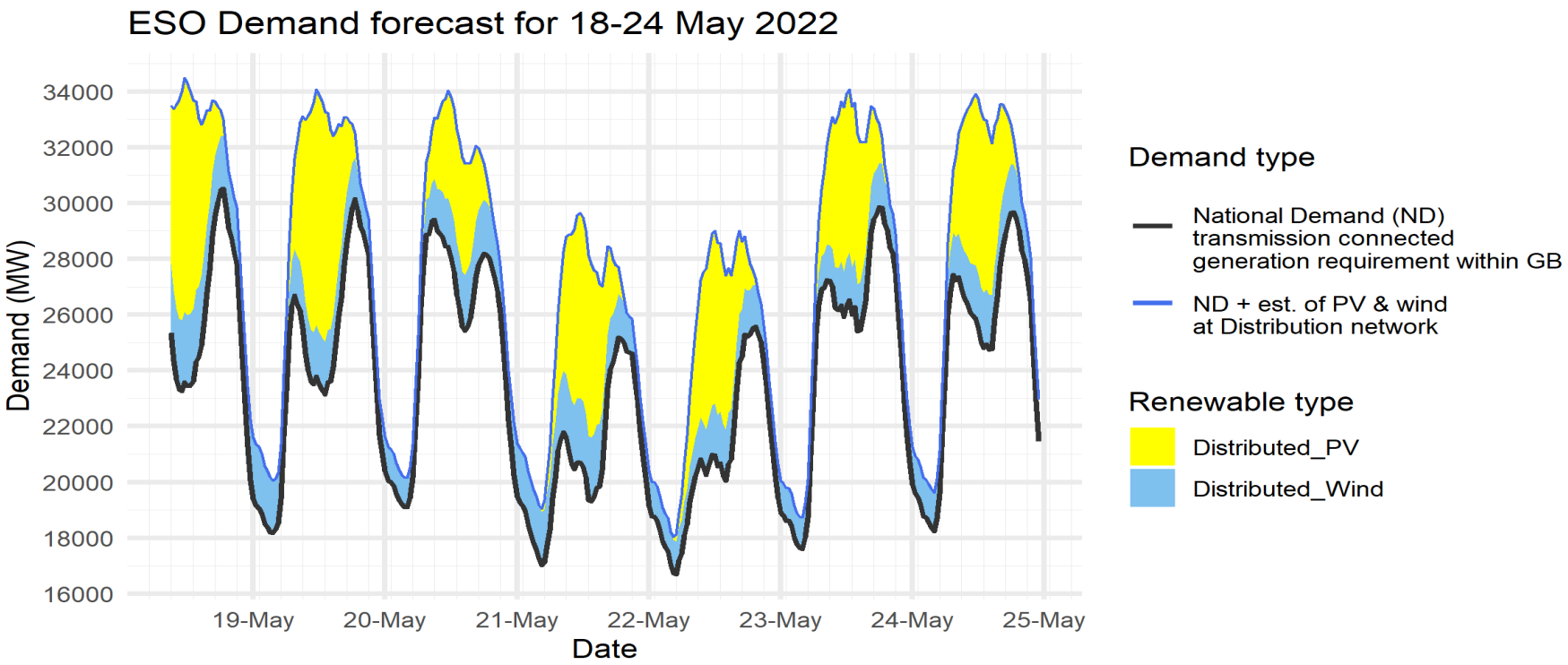
Demand | Week Ahead



		FORECAST (Wed 18 May)		
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
18 May	Afternoon Min	23.5	2.6	8.0
19 May	Overnight Min	18.2	1.9	0.0
19 May	Afternoon Min	23.1	1.9	8.2
20 May	Overnight Min	19.1	1.1	0.0
20 May	Afternoon Min	25.4	2.0	4.0
21 May	Overnight Min	17.0	1.9	0.1
21 May	Afternoon Min	19.3	2.3	6.2
22 May	Overnight Min	16.7	1.2	0.3
22 May	Afternoon Min	20.1	1.8	5.5
23 May	Overnight Min	17.6	1.1	0.0
23 May	Afternoon Min	25.4	1.7	5.4
24 May	Overnight Min	18.2	1.4	0.0
24 May	Afternoon Min	24.8	2.0	5.8

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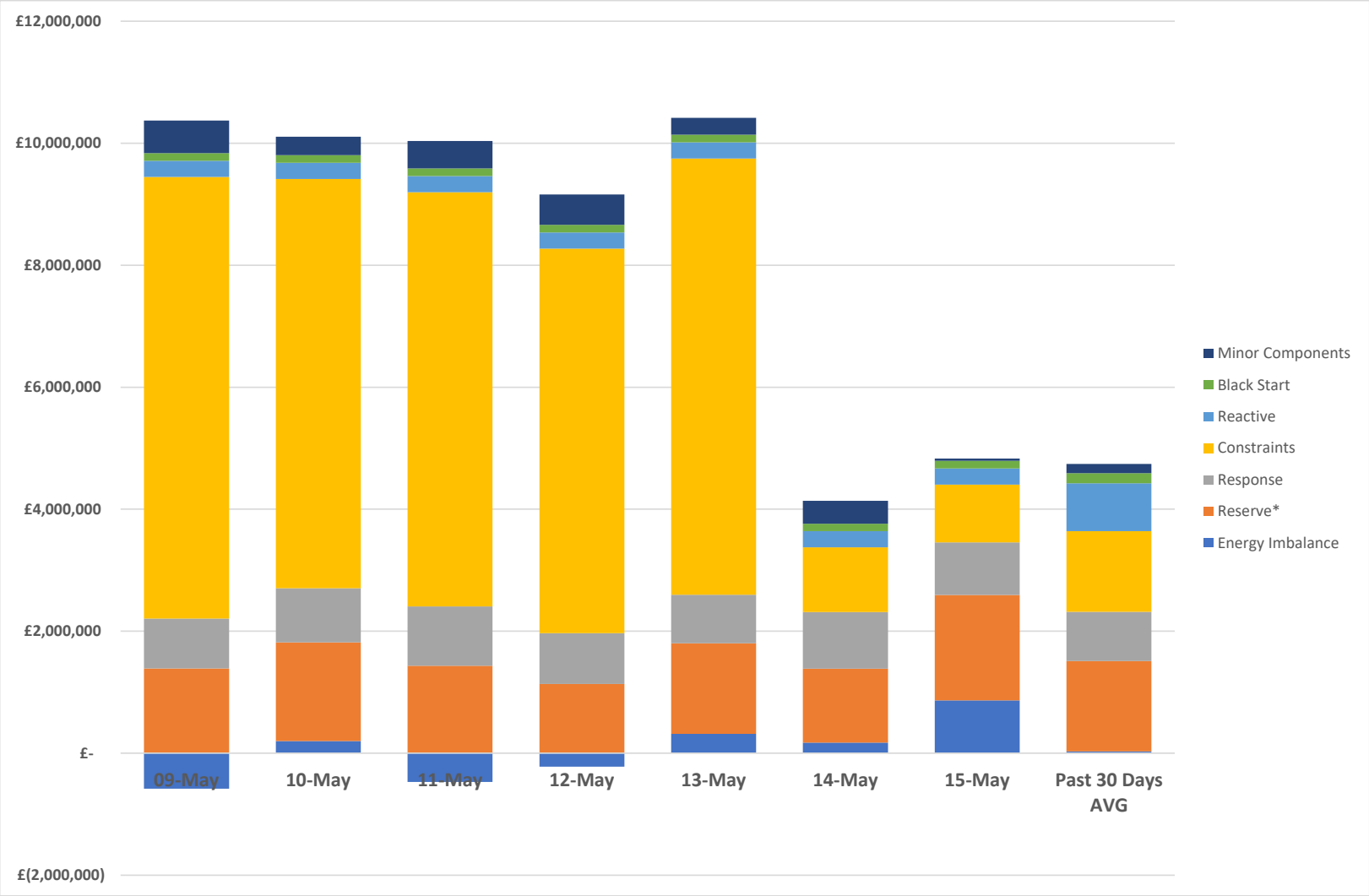
ESO Actions | Category costs breakdown for the last week



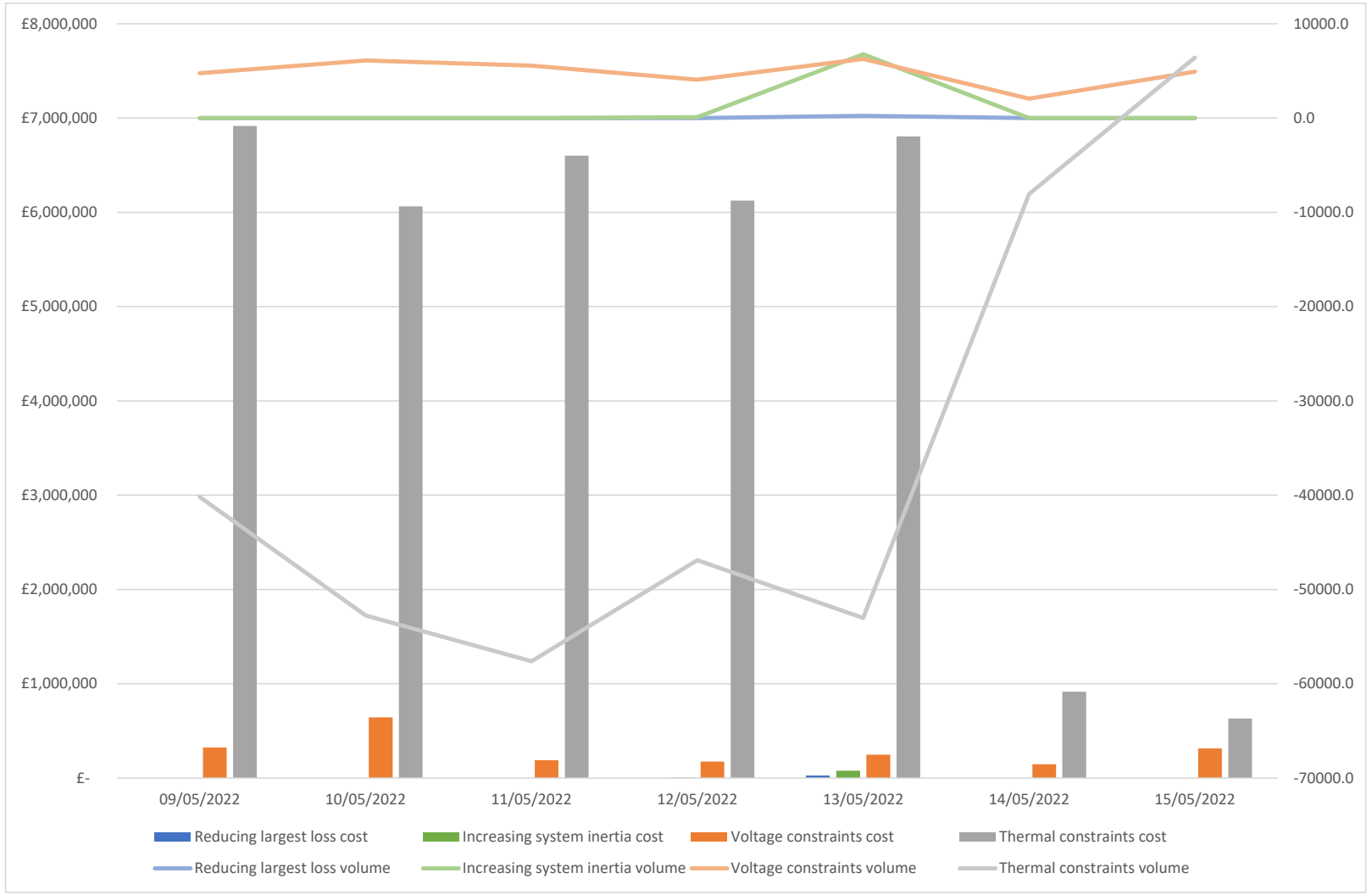
Date	Total (£m)
09/05/2022	9.8
10/05/2022	10.1
11/05/2022	9.6
12/05/2022	8.9
13/05/2022	10.4
14/05/2022	4.1
15/05/2022	4.8
Weekly Total	57.8

Key driver of costs was Constraints category

*Reserve includes Operating Reserve, STOR, Fast Reserve, Negative Reserve, Other Reserve

Past 30 Days Average is displayed in the chart

ESO Actions | Constraint Cost Breakdown



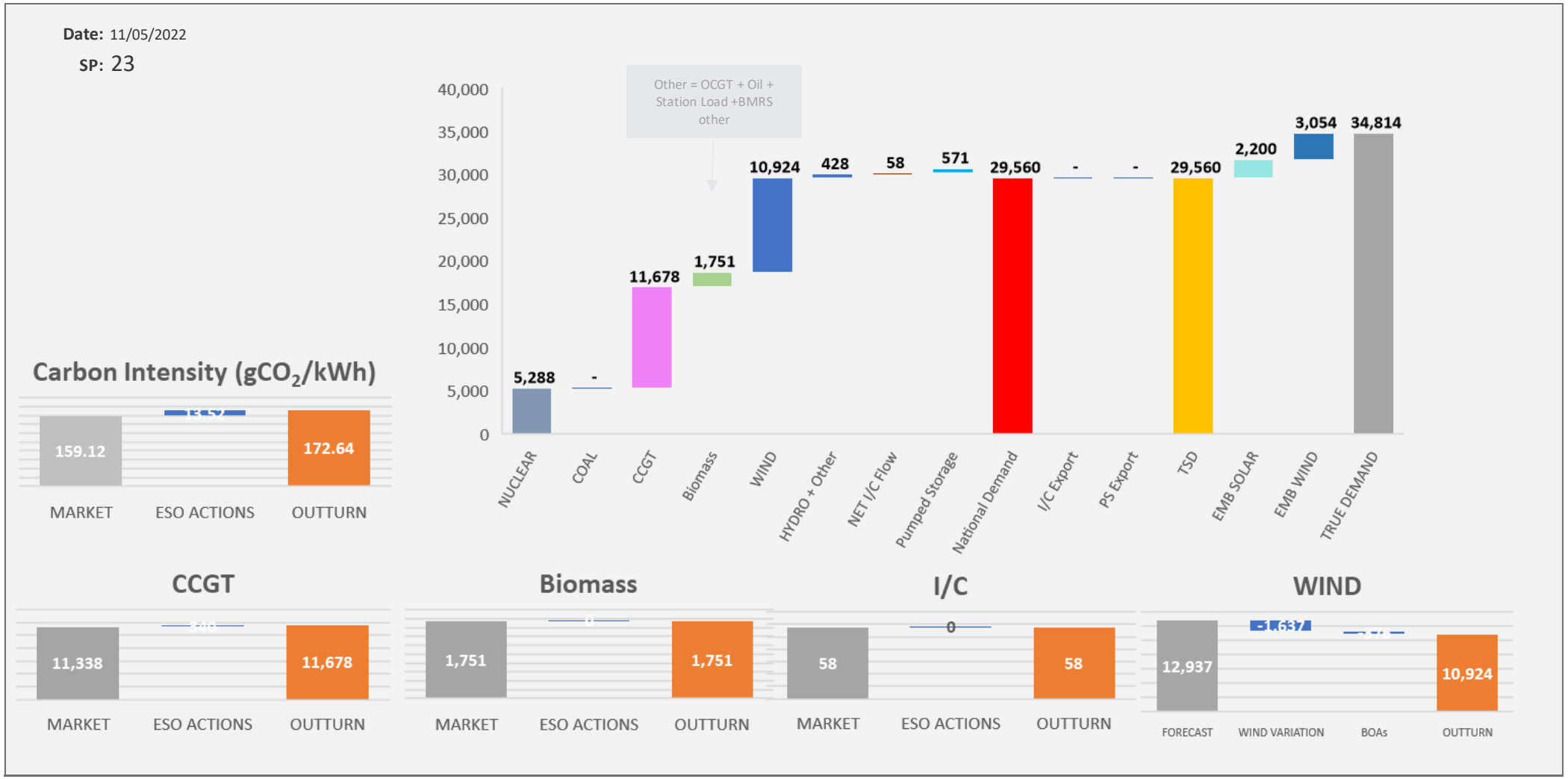
Thermal – network congestion
Actions required to manage Thermal Constraints throughout the week

Voltage
Actions taken to synchronise generation to meet voltage requirements were required throughout the week

Managing largest loss for RoCoF
Intervention required to manage largest loss on Friday

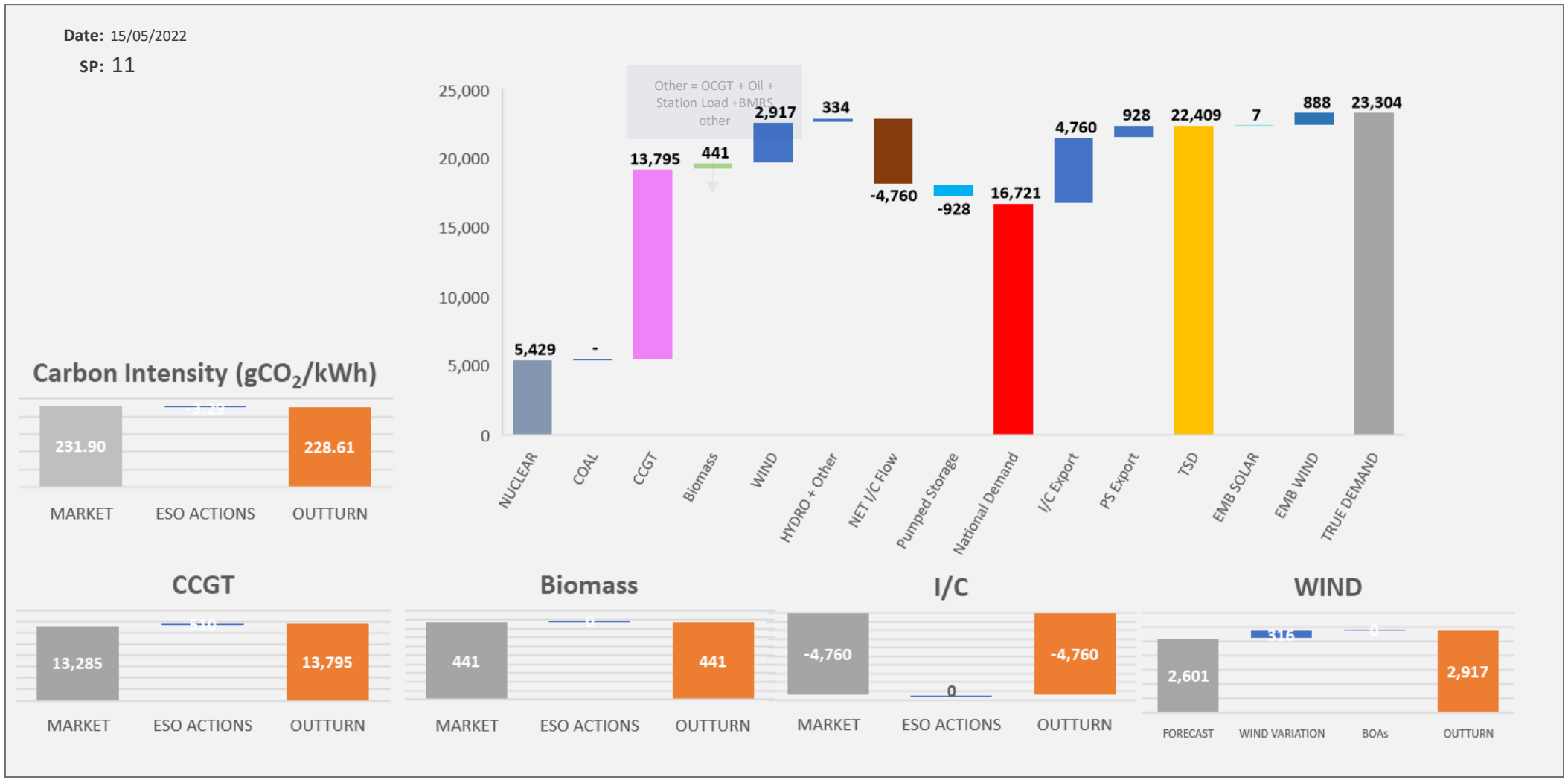
Increasing inertia
Intervention required to increase minimum inertia on Friday

ESO Actions | Wednesday 11 May Peak



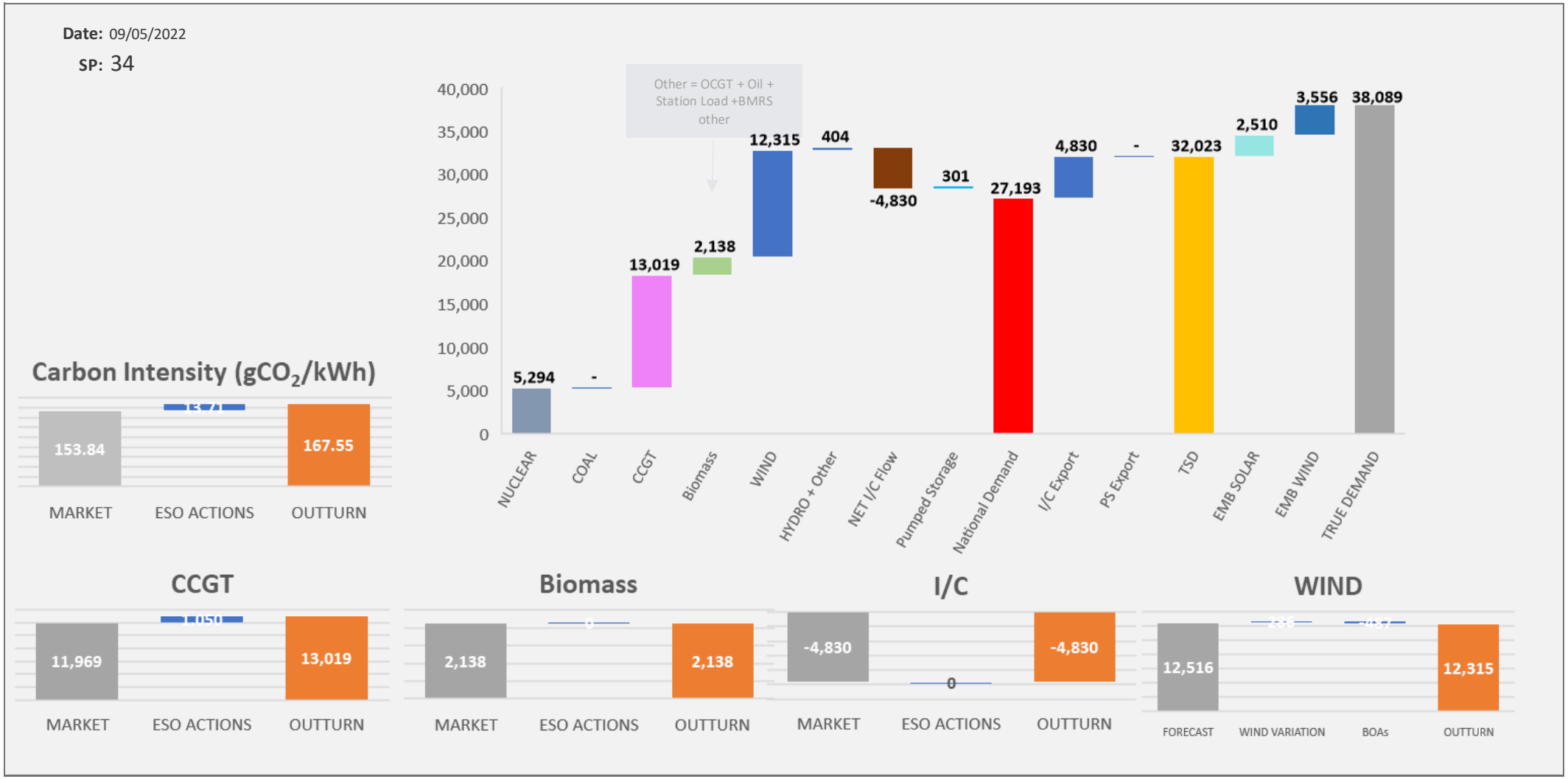
Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

ESO Actions | Sunday 15 May Minimum



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

ESO Actions | Monday 09 May Highest Spend ~£0.3m



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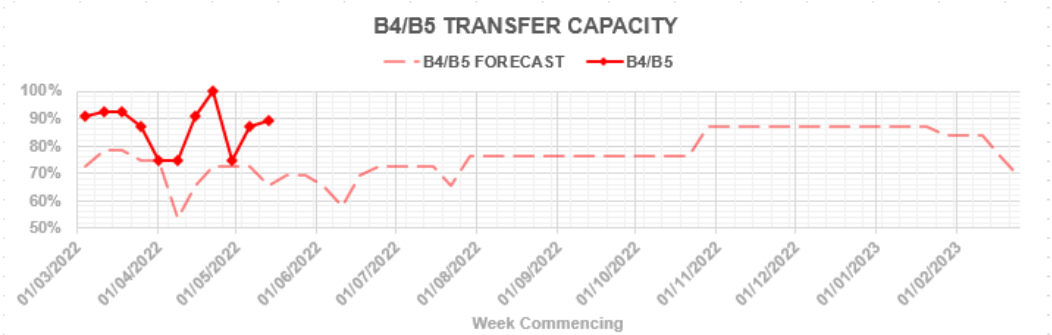
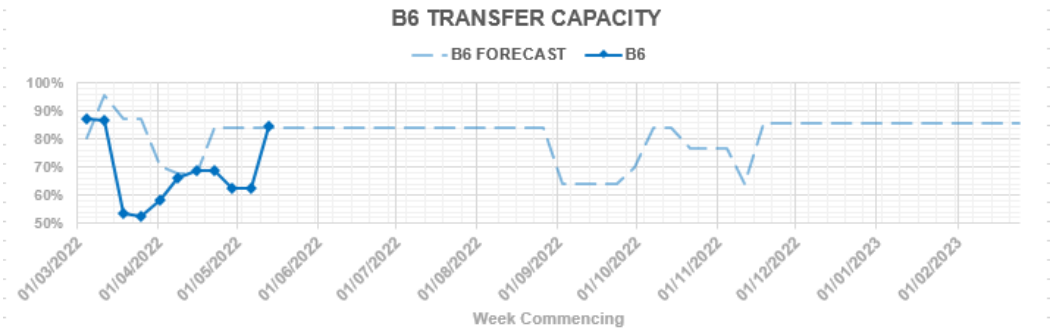
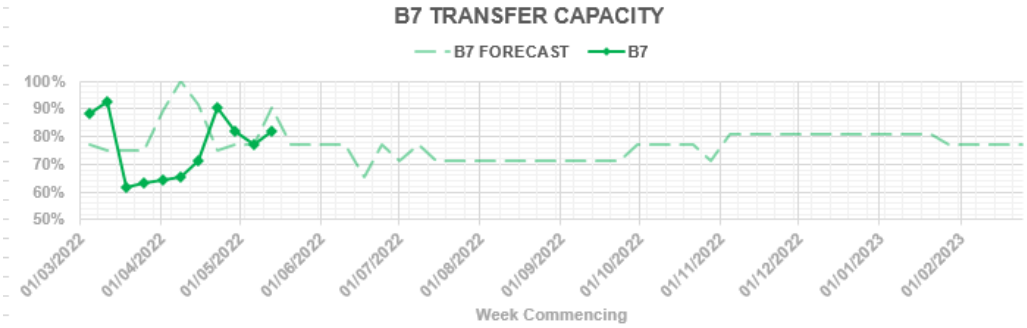
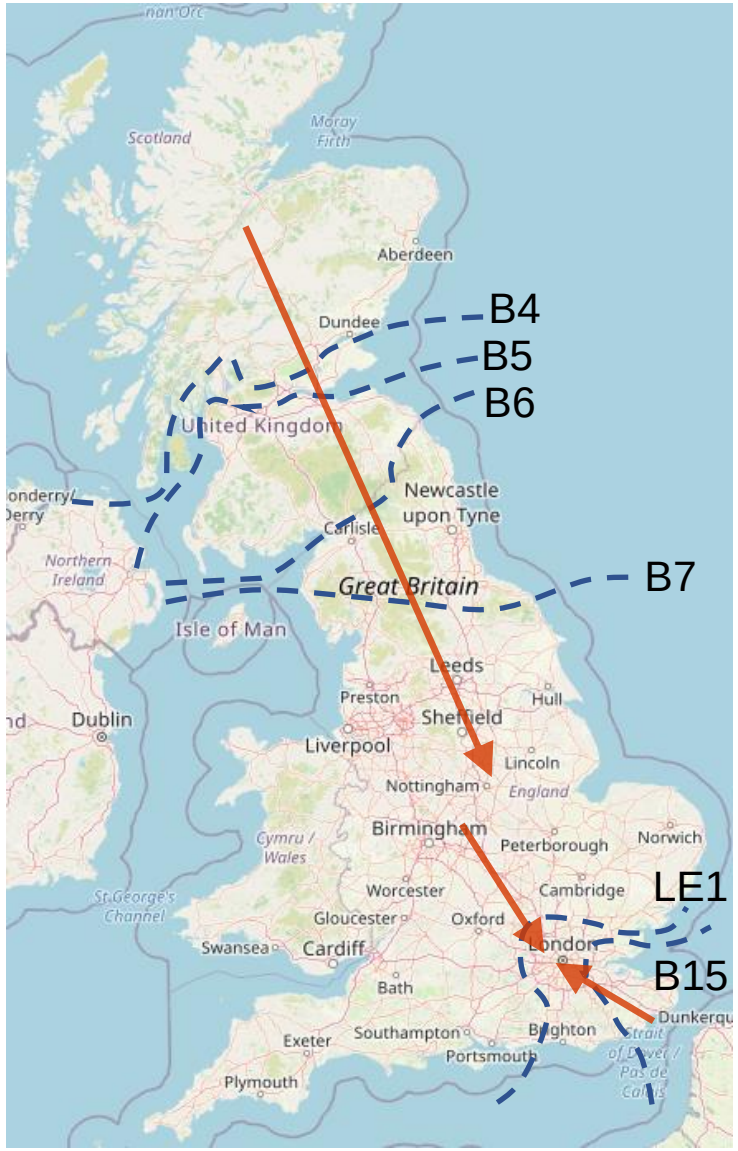
Transparency | Network Congestion





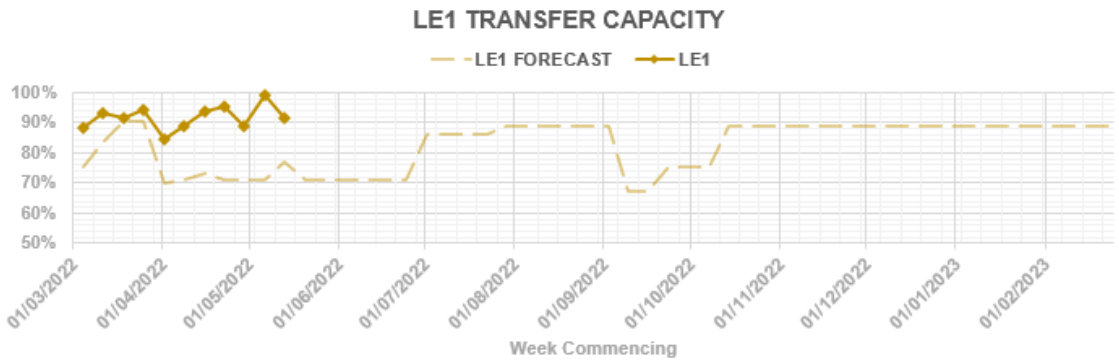


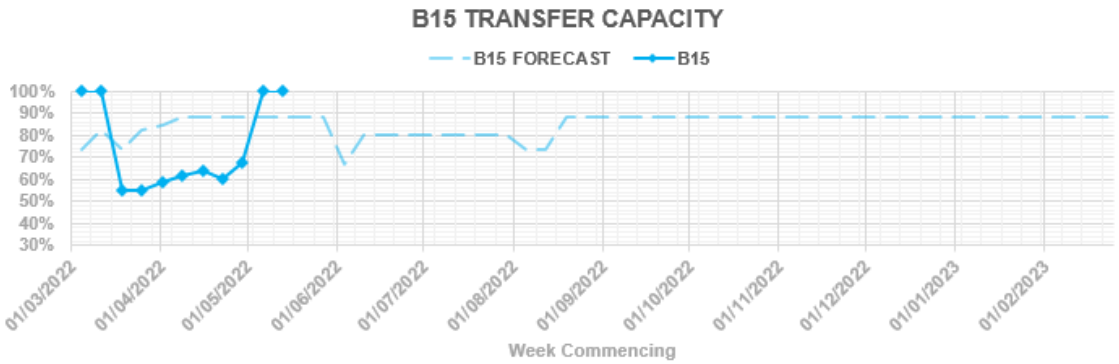
Boundary	Max. Capacity (MW)
B4/B5	2750
B6	5600
B7	8400
LE1	7000
B15	7500



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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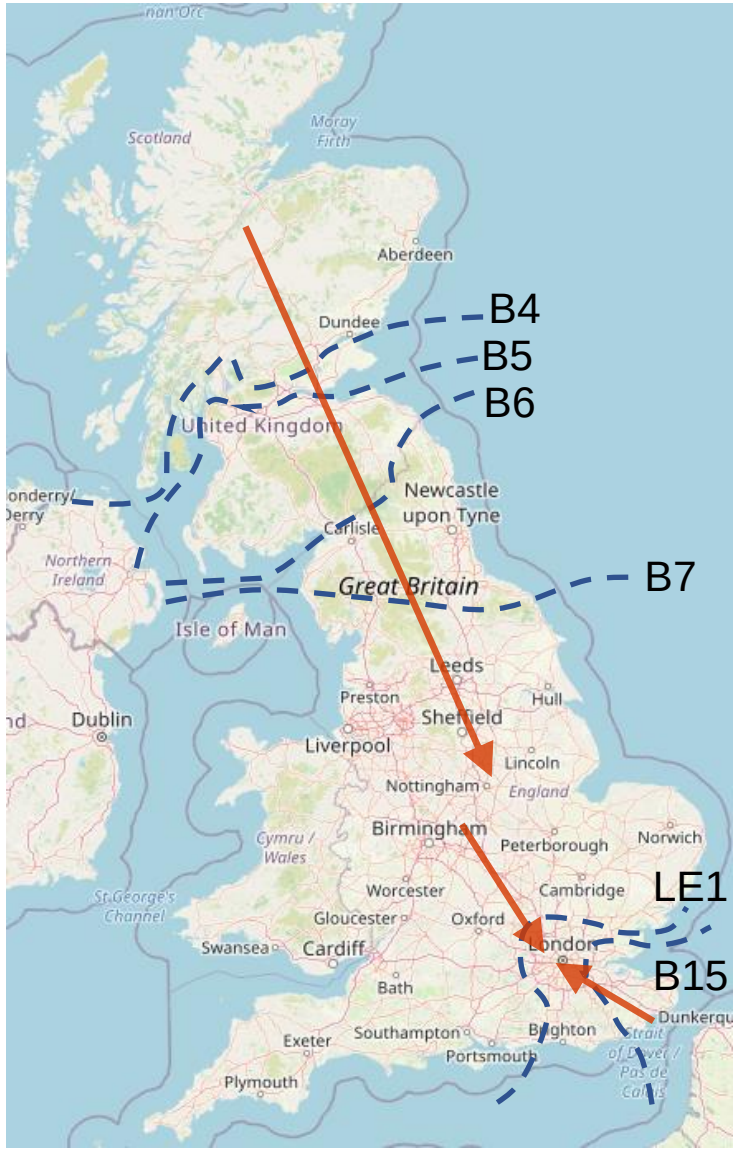

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Request for Information - Accessing Additional Voltage Capability 2023 - 2026

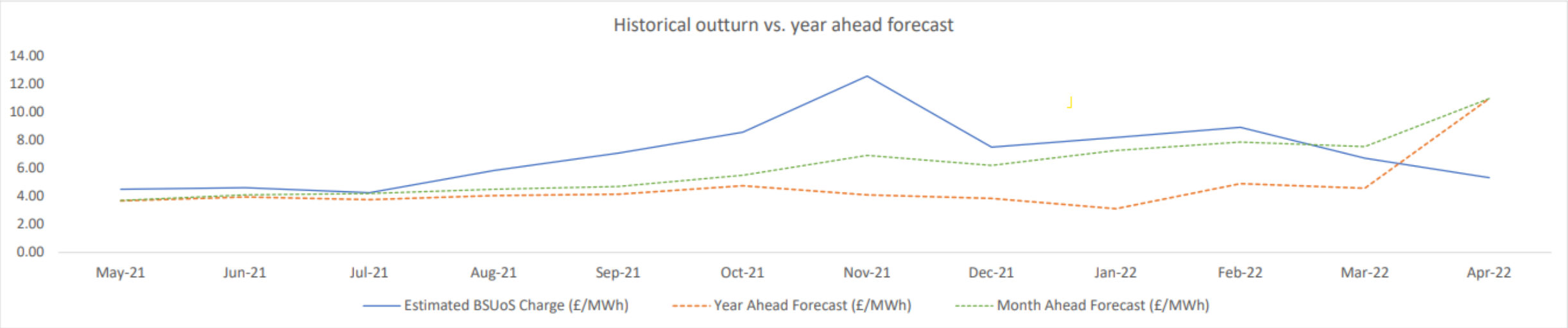
Region	MVAr requirement
London	300
West Midlands	300
South Wales and South Central	600
South West England	200
East England	200
North East	200
West Yorks	500

- RFI published 16th May looking for additional reactive capability across E&W between 2023 and 2026.
- The Reactive Reform Market Design project has highlighted additional reactive capability that the ESO does not have access to.
- We are looking for:
  - Additional reactive capability i.e., capability that we currently cannot access through existing mandatory reactive services / commercial contracts.
  - Connected at 132kV and above (transmission or distribution)
  - Existing assets or new assets connecting/available between 2023 and 2026.
- Responses requested by 5pm on 13th June. Potential providers are strongly encouraged to respond. Responses to:

box.futureofbalancingservices@nationalgrideso.com

BSUoS Outturn April 2022

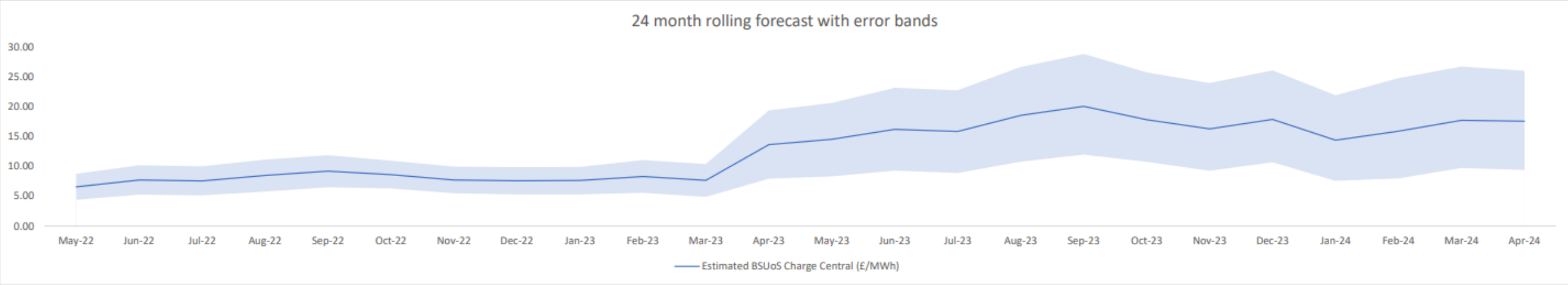
Total Balancing Costs outturn: £180.5m
Total BSUoS outturn: £213.1m
Estimated BSUoS charge £5.32/MWh



The outturn cost for April was 31% lower than the outturn for March. Wind load factors for March and April were very similar (approximately 28%), but the wholesale electricity prices were significantly lower in April (day ahead April price was £173/MWh compared to £250/MWh in March).
Forecast for April made at the start of March= £403 million
April outturn costs were significantly lower than the value produced in the March forecast. This is due to the elevated prices in the wholesale electricity forward curve available at the time. When the forecast was produced on March 9th, the month ahead wholesale price was approximately £350/MWh

ESO Data Portal: Monthly Balancing Services Use of System (BSUoS) Forecast Reports - Dataset| National Grid Electricity System Operator (nationalgrideso.com)

BSUoS Forecast June 2022

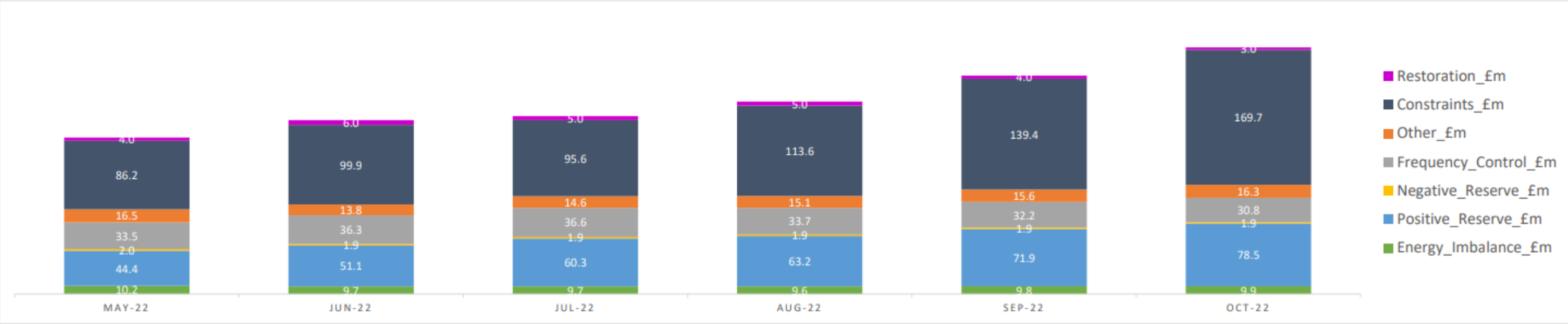


	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Balancing Costs (Central) £m	196.8	218.7	223.7	242.1	274.8	310.1	300.0	290.0	296.3	289.6	270.2	230.1	234.2	243.9	249.7	281.9	316.1	336.2	331.5	362.2	290.5	287.3	319.9	310.5
Balancing Costs (Upper) £m	274.5	300.1	307.8	329.5	365.8	405.0	397.0	388.7	395.7	396.3	376.3	337.2	343.5	359.7	370.2	417.0	465.4	497.4	499.9	540.8	456.3	461.9	496.0	472.5
Balancing Costs (Lower) £m	119.1	138.0	140.4	153.5	184.1	216.2	203.0	191.1	194.4	183.5	162.9	122.9	122.7	128.9	128.3	153.0	178.4	192.2	178.0	205.9	140.7	132.5	163.8	154.4
Estimated Internal BSUoS & ESO Incentive £m	32.58	31.53	32.58	32.58	31.53	32.58	31.53	32.58	32.58	29.43	26.57	25.72	26.57	25.72	26.57	26.57	25.72	26.57	25.72	26.57	26.50	24.79	26.50	25.64
ALoMCP £m	1.02	0.99	1.02	1.02	0.99	1.02	0.99	1.02	1.02	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMP381 Deferred Costs £m	3.83	3.96	4.09	4.09	3.96	4.09	3.96	4.09	4.09	3.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total BSUoS (Central) £m	234.2	255.2	261.4	279.8	311.3	347.8	336.5	327.7	334.0	323.6	296.8	255.8	260.8	269.6	276.3	308.5	341.8	362.8	357.2	388.8	317.0	312.1	346.4	336.1
Total BSUoS (Upper) £m	311.9	336.6	345.5	367.2	402.3	442.7	433.5	426.4	433.4	430.3	402.9	362.9	370.1	385.4	396.8	443.6	491.1	524.0	525.6	567.4	482.8	486.7	522.5	498.1
Total BSUoS (Lower) £m	156.5	174.5	178.1	191.2	220.6	253.9	239.5	228.8	232.1	217.5	189.5	148.6	149.3	154.6	154.9	179.6	204.1	218.8	203.7	232.5	167.2	157.3	190.3	180.0
Estimated BSUoS Volume (TWh)	35.60	33.00	34.50	32.90	33.80	40.30	43.50	43.10	43.70	38.90	38.70	18.70	17.90	16.60	17.40	16.60	17.00	20.30	21.90	21.70	22.00	19.60	19.50	19.10
Estimated BSUoS Charge Central (£/MWh)	6.58	7.73	7.58	8.50	9.21	8.63	7.74	7.60	7.64	8.32	7.67	13.68	14.57	16.24	15.88	18.58	20.11	17.87	16.31	17.92	14.41	15.92	17.76	17.60
Estimated BSUoS Charge Upper (£/MWh)	8.76	10.20	10.01	11.16	11.90	10.98	9.97	9.89	9.92	11.06	10.41	19.41	20.67	23.22	22.80	26.72	28.89	25.81	24.00	26.15	21.95	24.83	26.79	26.08
Estimated BSUoS Charge Lower (£/MWh)	4.40	5.29	5.16	5.81	6.53	6.30	5.51	5.31	5.31	5.59	4.90	7.95	8.34	9.31	8.90	10.82	12.01	10.78	9.30	10.71	7.60	8.02	9.76	9.43

Please note: As a result of the approval of CMP308, BSUoS charges are being removed from Generation from 1 April 2023. Therefore the chargeable volume approximately halves and the BSUoS charge (£/MWh) approximately doubles

[ESO Data Portal: Monthly Balancing Services Use of System (BSUoS) Forecast Reports - Dataset| National Grid Electricity System Operator (nationalgrideso.com)]

Balancing Costs Component Forecast June 2022



Balancing Costs forecast for June 2022 is £219 million.
This is significantly lower than the forecast produced in April (£285 million) and March (£401 million), but more in-line with the forecast produced in February (£222 million).
This is due to changes in the price of wholesale electricity in the futures markets.
The forecast was produced based on a forward price curve derived on 9th May 2022
No new planned or current outages on interconnectors or Western link.

ESO Data Portal: Monthly Balancing Services Use of System (BSUoS) Forecast Reports - Dataset| National Grid Electricity System Operator (nationalgrideso.com)

Remaining Components Forecast June 2022

	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
Balancing Costs (Central) £m	196.8	218.7	223.7	242.1	274.8	310.1	300.0	290.0	296.3	289.6	270.2	230.1	234.2	243.9	249.7	281.9	316.1	336.2	331.5	362.2	290.5	287.3	319.9	310.5
Balancing Costs (Upper) £m	274.5	300.1	307.8	329.5	365.8	405.0	397.0	388.7	395.7	396.3	376.3	337.2	343.5	359.7	370.2	417.0	465.4	497.4	499.9	540.8	456.3	461.9	496.0	472.5
Balancing Costs (Lower) £m	119.1	138.0	140.4	153.5	184.1	216.2	203.0	191.1	194.4	183.5	162.9	122.9	122.7	128.9	128.3	153.0	178.4	192.2	178.0	205.9	140.7	132.5	163.8	154.4
Estimated Internal BSUoS & ESO Incentive £m	32.58	31.53	32.58	32.58	31.53	32.58	31.53	32.58	32.58	29.43	26.57	25.72	26.57	25.72	26.57	26.57	25.72	26.57	25.72	26.57	26.50	24.79	26.50	25.64
ALoMCP £m	1.02	0.99	1.02	1.02	0.99	1.02	0.99	1.02	1.02	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMP381 Deferred Costs £m	3.83	3.96	4.09	4.09	3.96	4.09	3.96	4.09	4.09	3.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total BSUoS (Central) £m	234.2	255.2	261.4	279.8	311.3	347.8	336.5	327.7	334.0	323.6	296.8	255.8	260.8	269.6	276.3	308.5	341.8	362.8	357.2	388.8	317.0	312.1	346.4	336.1
Total BSUoS (Upper) £m	311.9	336.6	345.5	367.2	402.3	442.7	433.5	426.4	433.4	430.3	402.9	362.9	370.1	385.4	396.8	443.6	491.1	524.0	525.6	567.4	482.8	486.7	522.5	498.1
Total BSUoS (Lower) £m	156.5	174.5	178.1	191.2	220.6	253.9	239.5	228.8	232.1	217.5	189.5	148.6	149.3	154.6	154.9	179.6	204.1	218.8	203.7	232.5	167.2	157.3	190.3	180.0
Estimated BSUoS Volume (TWh)	35.60	33.00	34.50	32.90	33.80	40.30	43.50	43.10	43.70	38.90	38.70	18.70	17.90	16.60	17.40	16.60	17.00	20.30	21.90	21.70	22.00	19.60	19.50	19.10
Estimated BSUoS Charge Central (£/MWh)	6.58	7.73	7.58	8.50	9.21	8.63	7.74	7.60	7.64	8.32	7.67	13.68	14.57	16.24	15.88	18.58	20.11	17.87	16.31	17.92	14.41	15.92	17.76	17.60
Estimated BSUoS Charge Upper (£/MWh)	8.76	10.20	10.01	11.16	11.90	10.98	9.97	9.89	9.92	11.06	10.41	19.41	20.67	23.22	22.80	26.72	28.89	25.81	24.00	26.15	21.95	24.83	26.79	26.08
Estimated BSUoS Charge Lower (£/MWh)	4.40	5.29	5.16	5.81	6.53	6.30	5.51	5.31	5.31	5.59	4.90	7.95	8.34	9.31	8.90	10.82	12.01	10.78	9.30	10.71	7.60	8.02	9.76	9.43

Please note: As a result of the approval of CMP308, BSUoS charges are being removed from Generation from 1 April 2023. Therefore the chargeable volume approximately halves and the BSUoS charge (£/MWh) approximately doubles

Estimated Internal BSUoS

Unchanged from last forecast

ALoMCP

Unchanged from last forecast

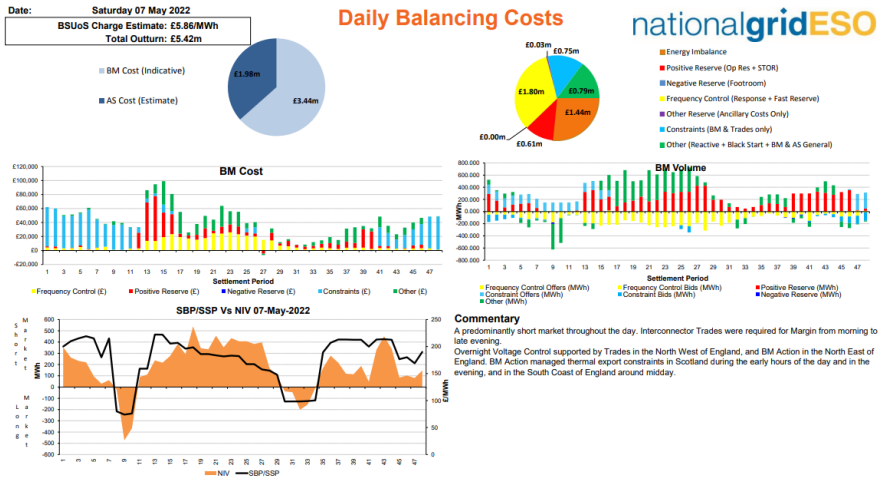
CMP381 Deferred Costs

Based on SF data, ~£43.9m deferred to 2022/23 and recovered from 3 May 2022

Estimated BSUoS Volume

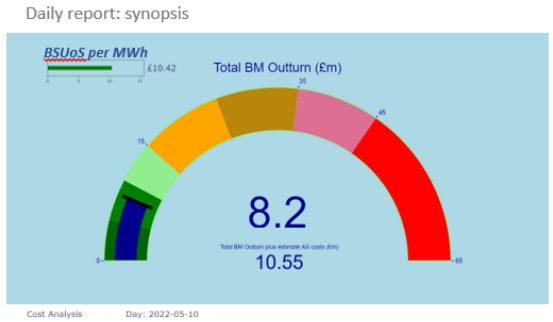
The BSUoS volume has been changed to reflect the approved status of CMP308. This is applicable from April 2023.

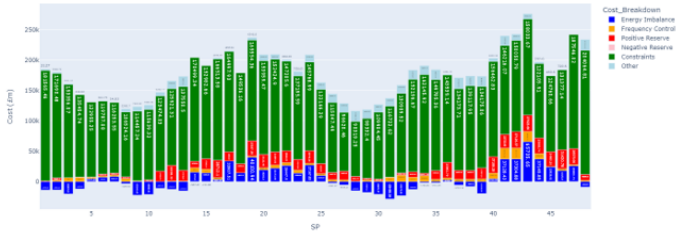
Daily Balancing Costs Report – restyled

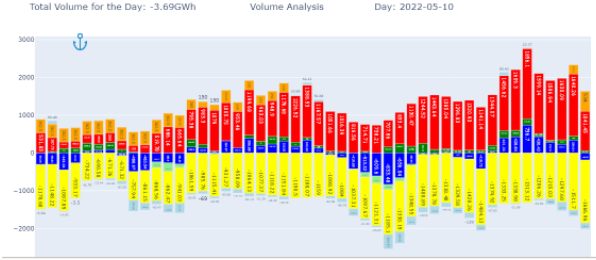


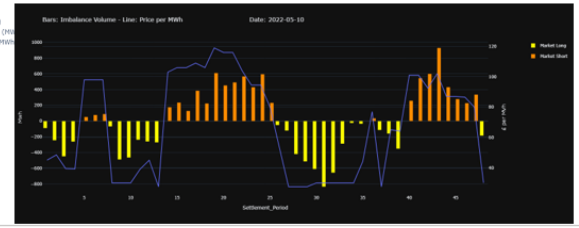
Current report

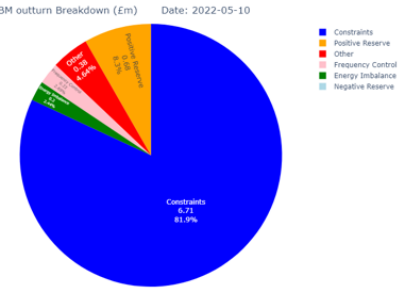
Uploaded onto data portal and gives the first indication of daily spend in BM, a forecast of AS costs and an indication of the average BSUoS charge for the day.











Restyled report to bring more insight and efficiencies in the process.
Look out for the new report in the coming weeks

1 page synopsis to give snapshot of information
Detailed pages following giving more information
CSV files of costs and volumes will still be published

https://data.nationalgrideso.com/balancing/daily-balancing-cost-report-balancing-services-use-of-system

Frequency Response Reform: Market Insights and Procurement Webinar

Following the successful launch of National Grid ESO's full suite of new response services, we wanted to take the opportunity to explain some of the recent changes to procurement in more detail.

During this webinar we intend to provide insight into how response requirements are forecast, explain the methodology that sits behind our buy curves, share feedback from our market simulation exercises and provider engagement, and discuss the recent improvements we've made to make our procurement more transparent.

The webinar will run on 26th of May for an hour and will include the opportunity to ask questions on these areas.

If you would like to register, please follow the link below…

https://teams.microsoft.com/registration/U2qK-fMlEkKQHMd4f800lQ,yFGNlr5FgESWRZtMPOpAEA,7vkf5In7J0iab0ff9BRnEA,8YR1nIjaT0i2ZAf0TIPGDA,VHLj0rtckUK3-z0YqDcwmw,QhDV3M79iUG3XR-gc6gOpg?mode=read&tenantId=f98a6a53-25f3-4212-901c-c7787fcd3495

OTF stakeholder workshop

Come and meet the face behind the voice on the OTF

- We would like to gather ideas and feedback to continue improving the OTF
- Lunch will be provided
- Visit to control room viewing gallery with some of our regular OTF experts

24 June 1100-1300

In person at our Wokingham offices

Sign up by 17 June

https://forms.office.com/r/G1M277Eqng

slido

Audience Q&A Session

ⓘ Start presenting to display the audience questions on this slide.

Q&A

Please remember to use the feedback poll after the event. We welcome feedback to understand what we are doing well and how we can improve the event ongoing.

If you have any questions after the event, please contact the following email address: box.NC.Customer@nationalgrideso.com

nationalgridESO