



ESO Operational
Transparency Forum
17th Nov 2021

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

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.**

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>

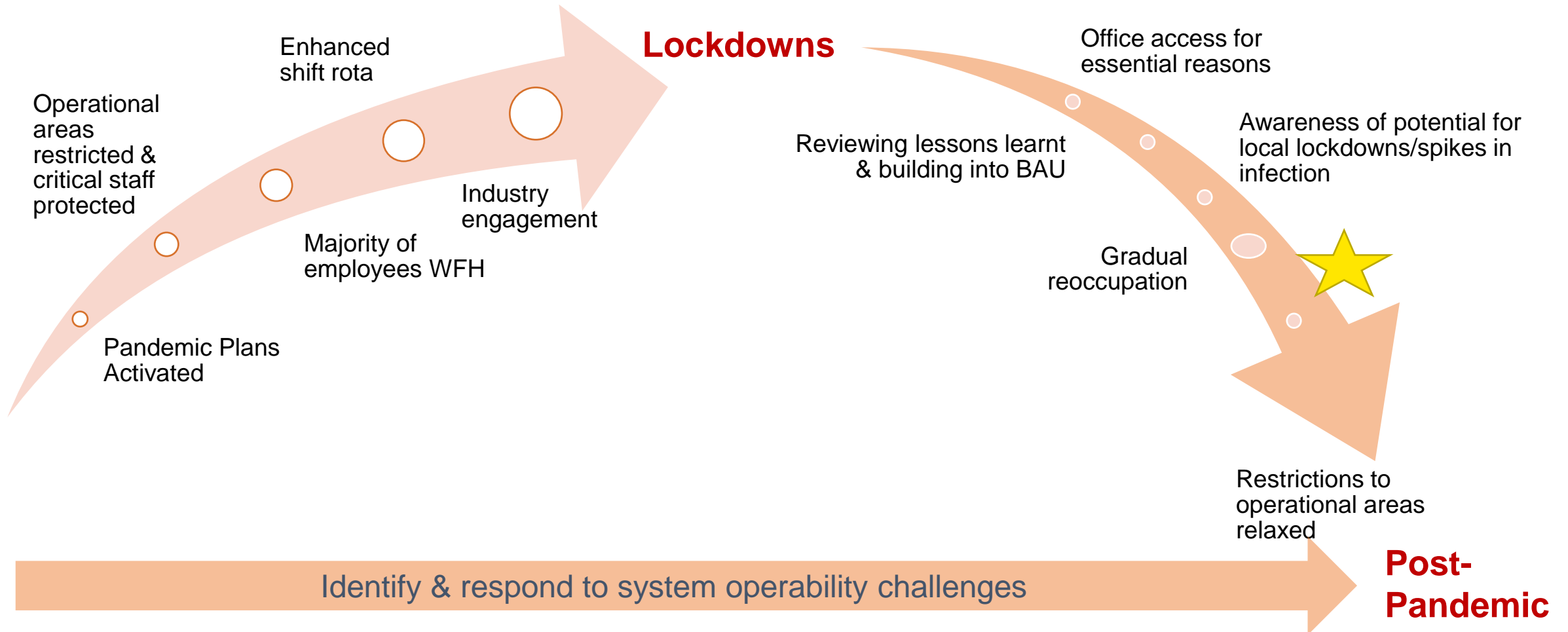
Regular Topics

- Questions from last week
- Business continuity
- Demand review and outlook
- Costs for last week
- Constraints

Focus Areas

Electricity System Restoration Standard – Implementation Consultation
Frequency Response Procurement
Dynamic Moderation and Dynamic Regulation update
Balancing Cost Review – Tuesday 2 November 2021

Protecting critical staff to maintain critical operations



Questions outstanding from last week

Q: Were any costs incurred over the last week due to the request of other SOs? In other words, will all the costs incurred over the last week be borne by GB consumers?

A: No interactions with other SO were affecting the network scenario .

Q: Hi, were the Reserve actions on Tuesday 2nd, which contributed to the high cost, to increase spinning reserve or for reserve services such as STOR and Optional Fast Reserve? Do the margin actions mentioned in the Questions from Last Week fall into this Reserve category? Thanks

A: The behaviour of BM participants combined with the low levels of STOR availability for DP (~770MW), left the Control Room with limited scope but to take notably expensive actions in the BM to meet the reserve requirement for DP. At DP there was significant demand suppression due to tariff avoidance (which is likely to account for the low STOR turn-out: the usual STOR participants were being used by DNOs/suppliers/businesses in order to reduce TRIAD payments). During the DP the cost of managing reserve was roughly £8m per hour. There were 13 Settlement Periods (SP) in the evening shift whereby the cost of maintaining reserve was at least £1.5m per SP (1 SP = ½ hour).

Q: 2nd Nov saw BSUoS outturn at ~£100 for several periods. What can ESO do to reduce the impact on parties.

A: We recognise the importance of accurate BSUoS forecasting to parties who are planning ahead. Through our 5 point plan we are developing more accurate forecasting of constraint costs which will feed into our BUSoS forecast and give advance visibility of predicted costs

Q: Related to non-BM ASDP, why is there no transparency at all on non-BM fast reserve? There is no tenders, requirements etc.

A: Fast Reserve is now an optional only service. This was communicated to the market during 2020 through our website and webinars and a letter to providers. <https://www.nationalgrideso.com/document/173101/download>

All non-BM fast reserve instructions are published via the data portal here <https://data.nationalgrideso.com/ancillary-services/non-bm-ancillary-service-dispatch-platform-asdp-instructions>

Questions outstanding from last week

Q:The webinars recordings have not been updated since Oct 20

A:We've had some technical issues with recordings for the past 3 weeks – we believe we have now resolved this and this webinar recording will go live after this session

Q:ETYS studies (boundary capability and economic analysis) are taking place since 2012 and still constraint cost is really high. Are FES scenarios not forecasted correctly?

A:Designing an economic and efficient network should ensure the investment is well timed, too early and there's a risk of additional costs through stranded assets and too late potentially higher constraint costs to consumers.

Using the Future Energy Scenarios the ETYS and NOA processes outline the optimal strategy for reinforcements to minimise the overall consumer costs, balancing the cost of reinforcement with the cost of managing constraints.

Due to the evolving nature of the energy landscape and the pace of political, regulatory and operational environment changes, we update the scenarios annually to reflect this so that they best reflect the current view of what the future may look like, which then results in annual updates to our network requirements analysis (ETYS) and optimal reinforcement strategy recommendations (NOA).

We do see constraint costs increasing significantly as a result of the rapidly changing generation mix and the timescales for large transmission investments

Whilst increasing constraint costs could be part of the overall economic solution and may be required to enable transition to net zero, enabling renewable generation to connect, they are nevertheless a significant cost and we recognise that they will have a real impact on consumers' bills.

We are actively managing and seek to reduce constraint costs through our planning and operational activities. We have a range of initiatives on which we are working closely with industry to mitigate the projected increases in constraint costs. Further information is available here: <https://www.nationalgrideso.com/news/our-5-point-plan-manage-constraints-system>

Future forum topics

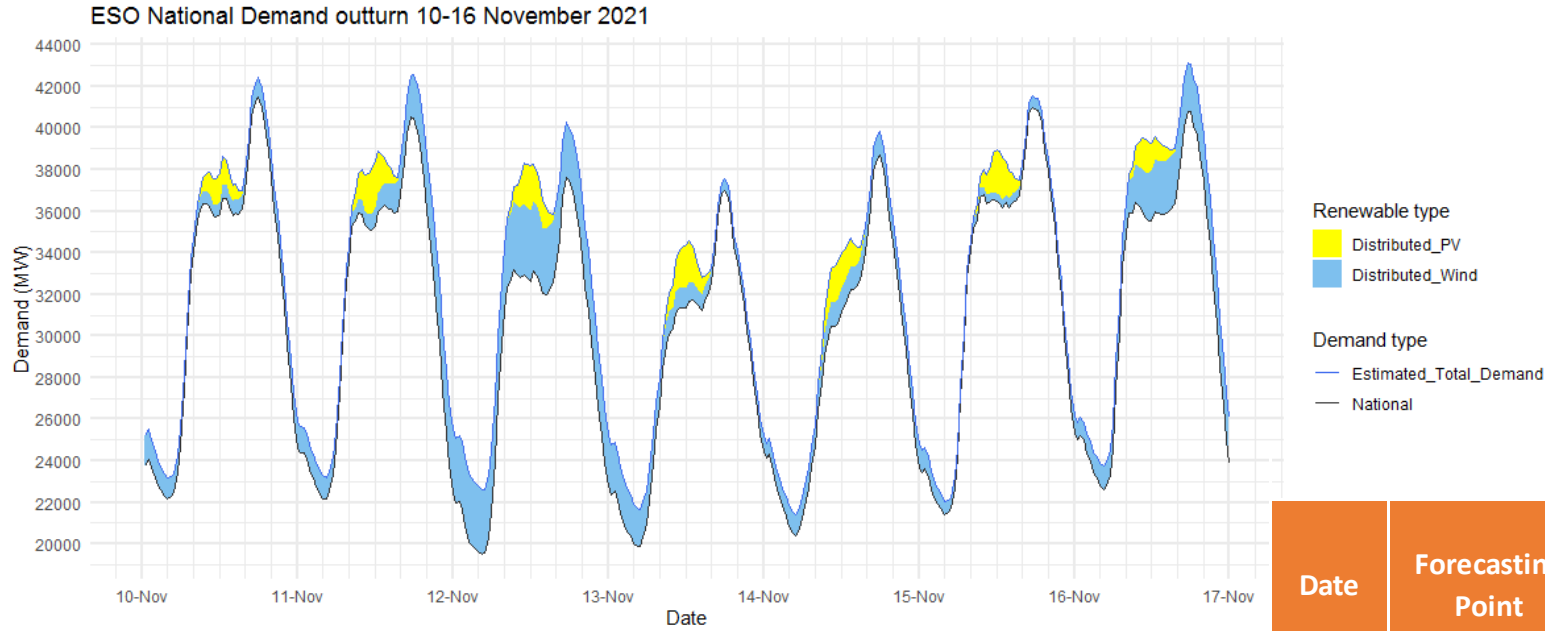
While we want to remain flexible to provide insight on operational challenges when they happen, we appreciate you want to know when we will cover topics.

We have the following deep dives planned:

January

Balancing Services Adjustment Data (BSAD) Overview

Demand | Last 7 days outturn

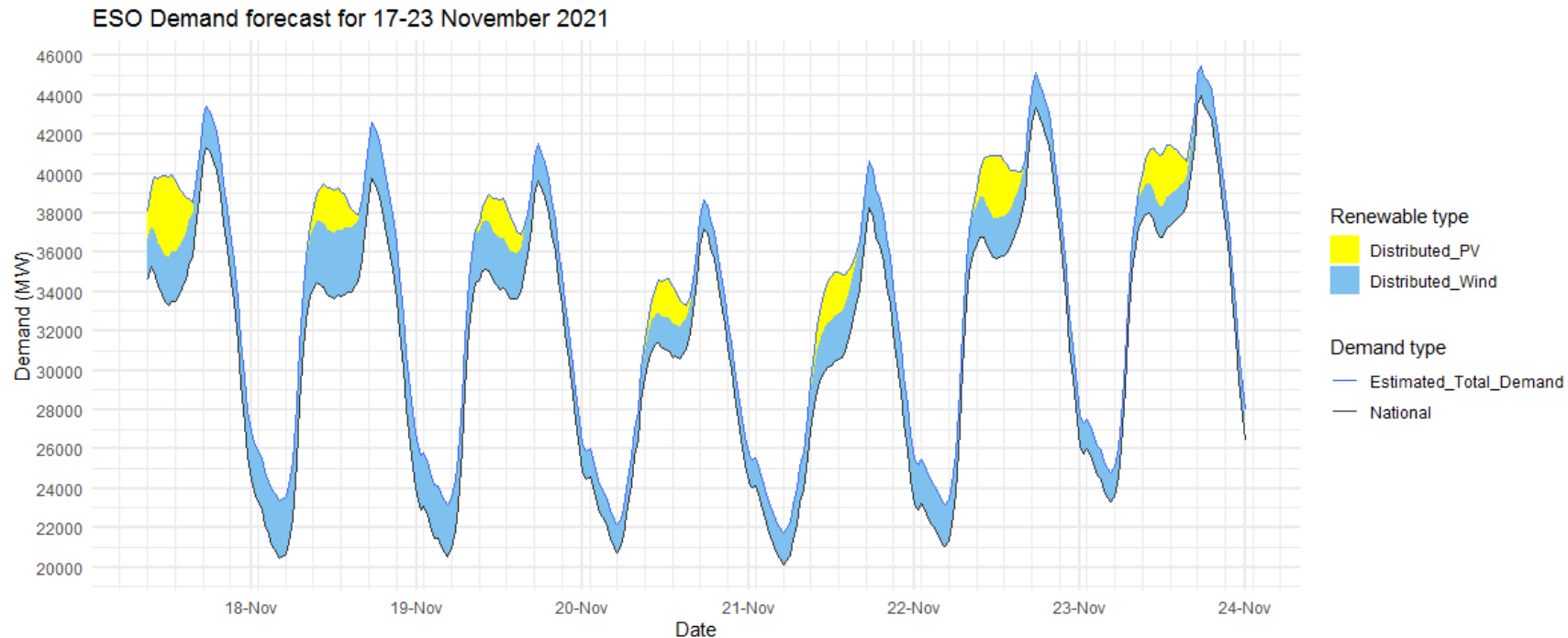


The black line (National Demand) is the measure of portion of total GB customer demand that is supplied by the transmission network.

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.

Date	Forecasting Point	FORECAST (Wed 10)		OUTTURN			
		National Demand (GW)	Dist. wind (GW)	National Demand (GW)	Triad Avoidance est. (GW)	N. Demand adjusted for TA (GW)	Dist. wind (GW)
10 Nov	Evening Peak	41.4	0.9	41.5	0.0	41.5	0.9
11 Nov	Overnight Min	22.3	1.0	22.2	n/a	n/a	1.0
11 Nov	Evening Peak	40.7	1.3	40.5	0.0	40.5	2.0
12 Nov	Overnight Min	20.3	2.8	19.5	n/a	n/a	3.1
12 Nov	Evening Peak	38.9	2.4	37.6	0.0	37.6	2.6
13 Nov	Overnight Min	20.3	1.6	19.9	n/a	n/a	1.8
13 Nov	Evening Peak	37.0	0.9	37.0	0.0	37.0	0.6
14 Nov	Overnight Min	20.4	1.0	20.4	n/a	n/a	1.0
14 Nov	Evening Peak	38.0	1.4	38.7	0.0	38.7	1.1
15 Nov	Overnight Min	21.5	1.1	21.4	n/a	n/a	0.6
15 Nov	Evening Peak	43.1	1.1	41.0	0.6	41.6	0.5
16 Nov	Overnight Min	23.0	1.3	22.6	n/a	n/a	1.1
16 Nov	Evening Peak	42.6	2.0	40.8	1.0	41.8	2.4

Demand | Week Ahead



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		FORECAST (Wed 17 Nov)	
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)
17 Nov	Evening Peak	41.3	2.1
18 Nov	Overnight Min	20.5	2.9
18 Nov	Evening Peak	39.8	2.8
19 Nov	Overnight Min	20.5	2.6
19 Nov	Evening Peak	39.7	1.9
20 Nov	Overnight Min	20.7	1.4
20 Nov	Evening Peak	37.2	1.5
21 Nov	Overnight Min	20.1	1.7
21 Nov	Evening Peak	38.3	2.4
22 Nov	Overnight Min	21.0	2.1
22 Nov	Evening Peak	43.4	1.8
23 Nov	Overnight Min	23.3	1.5
23 Nov	Evening Peak	44.0	1.5

Demand | New dataset on ESO Data Portal

Two to fourteen days ahead national demand forecast at half hourly resolution

Published daily at 13:45

It's in the Demand data group on the ESO Data Portal

<https://data.nationalgrideso.com/demand/2-14-days-ahead-national-demand-forecast>

If you'd like to provide feedback on the ESO Data Portal, please contact us at box.OpenData.ESO@nationalgrideso.com

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2-14 Days Ahead Demand Forecast

Home / Demand / 2-14 Days Ahead Demand Forecast

ESO Actions | Wednesday 10 November Peak

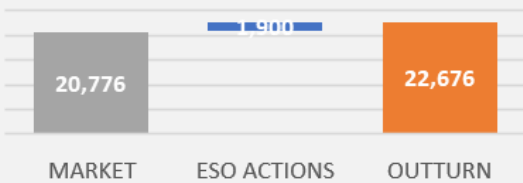
Date: 10/11/2021

SP: 36

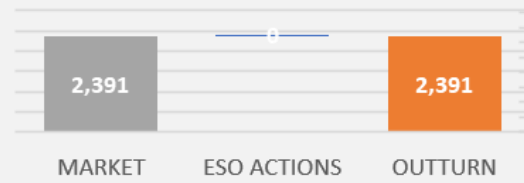
Carbon Intensity (gCO₂/kWh)



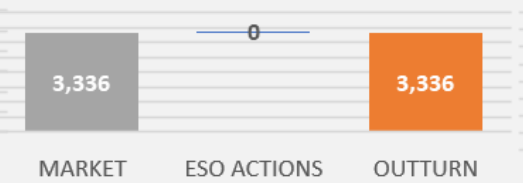
CCGT



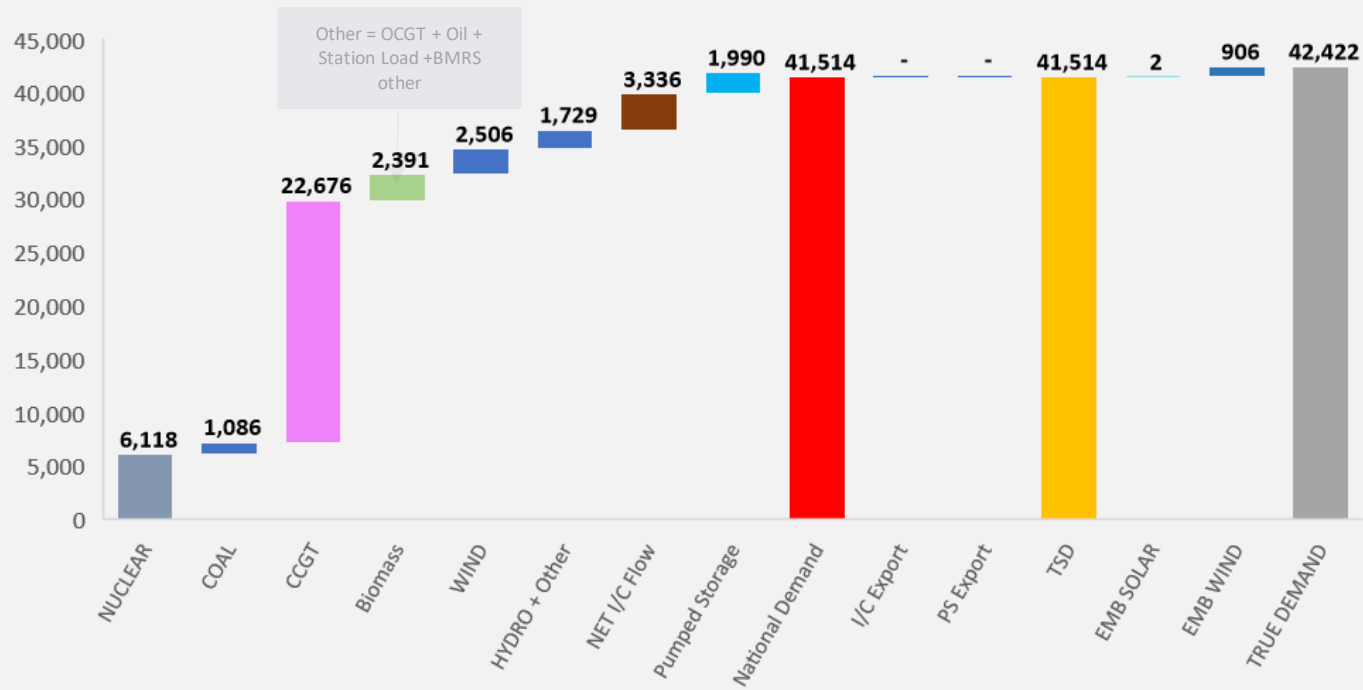
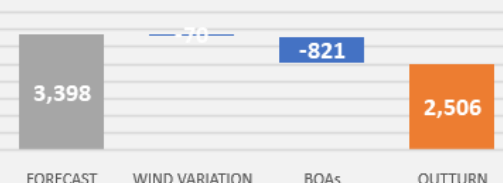
Biomass



I/C



WIND

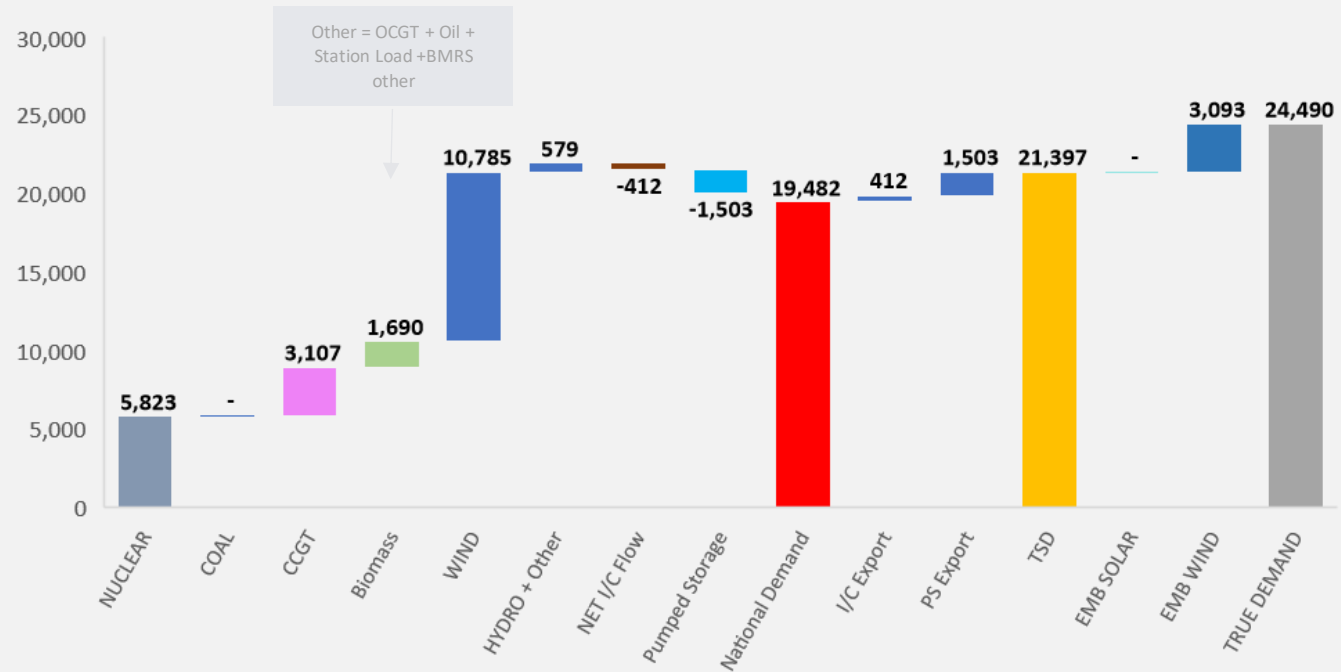


ESO Actions | Friday 12 November Minimum

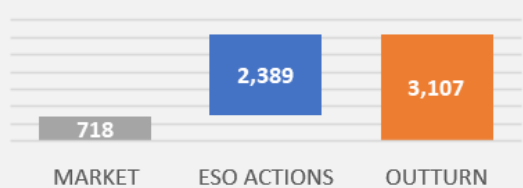
Date: 12/11/2021

SP: 9

Carbon Intensity (gCO₂/kWh)



CCGT



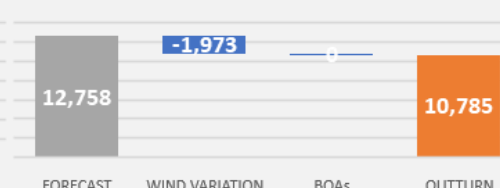
Biomass



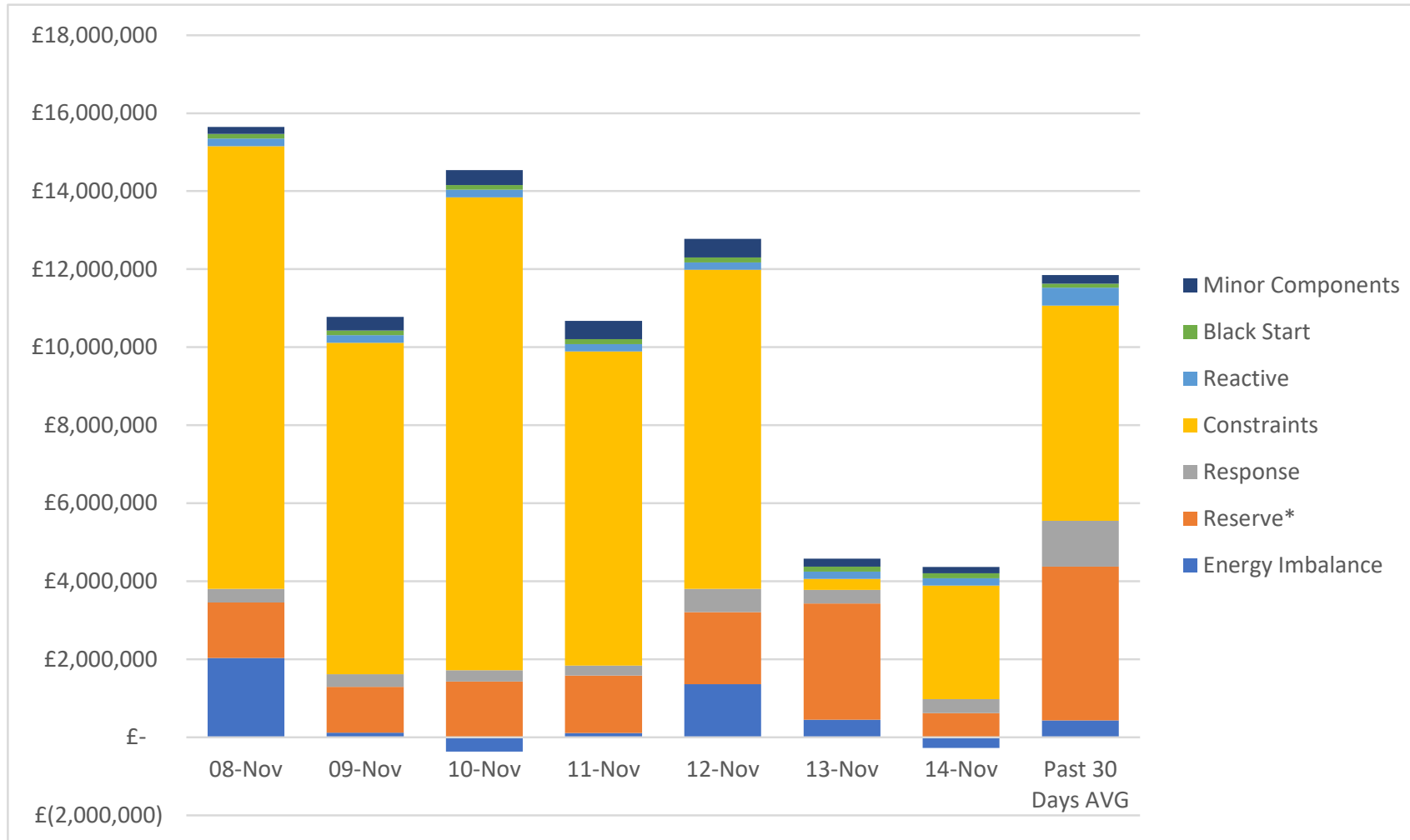
I/C



WIND



Transparency | Costs for the last week



Between Monday and Thursday daily spend was between £10m and £16m. With Monday the most expensive day with costs close to £16m.

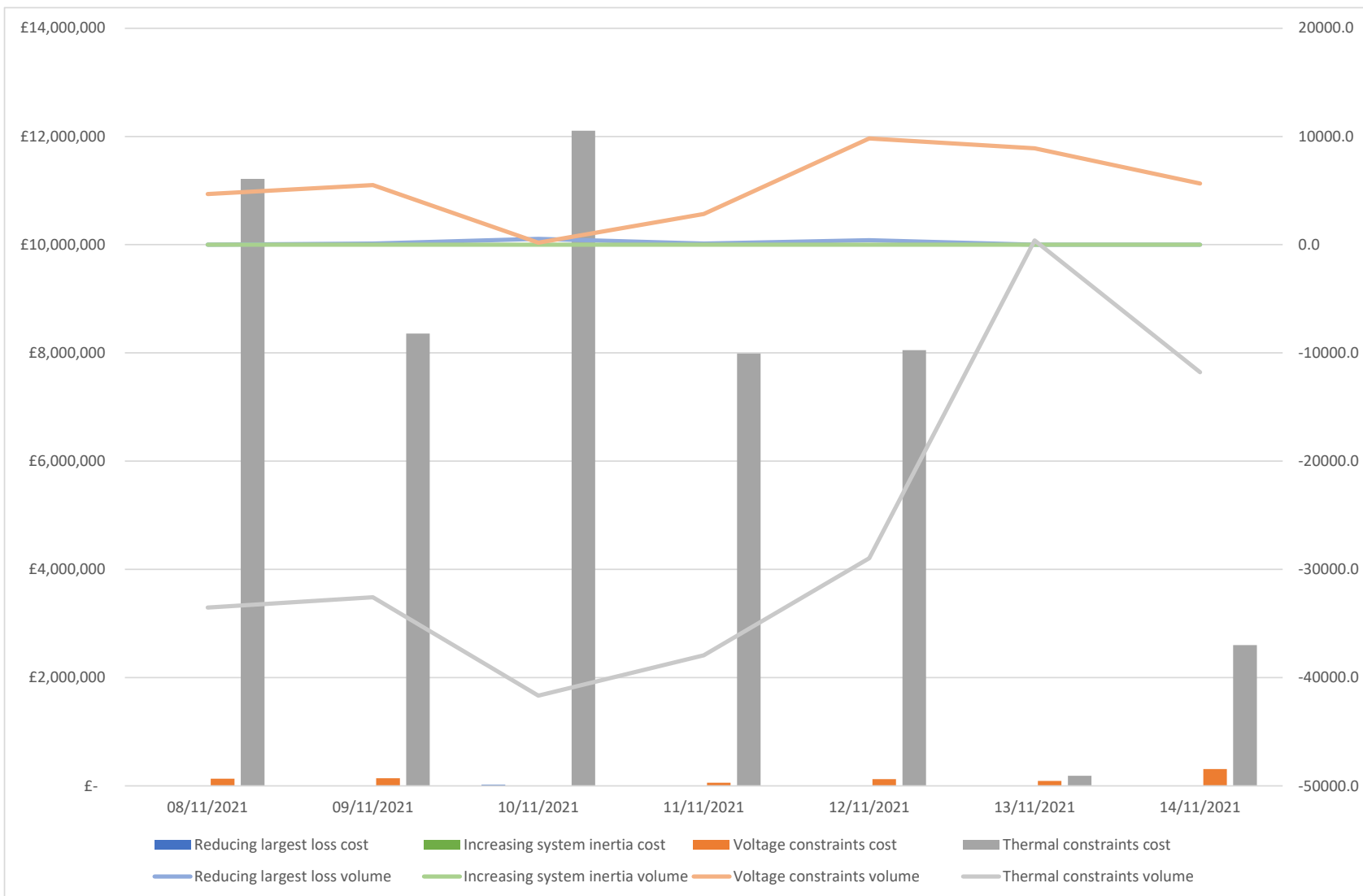
Constraints

High wind level requiring high volume of BM actions to buy off generation to manage thermal constraint were the main drive behind the high spend days

Saturday and Sunday daily costs were contained to £4m circa.

Past 30 Days Average added

Transparency | Constraint cost breakdown



Thermal

Between Monday and Thursday high volume of BM actions required to manage thermal constraints.

Voltage

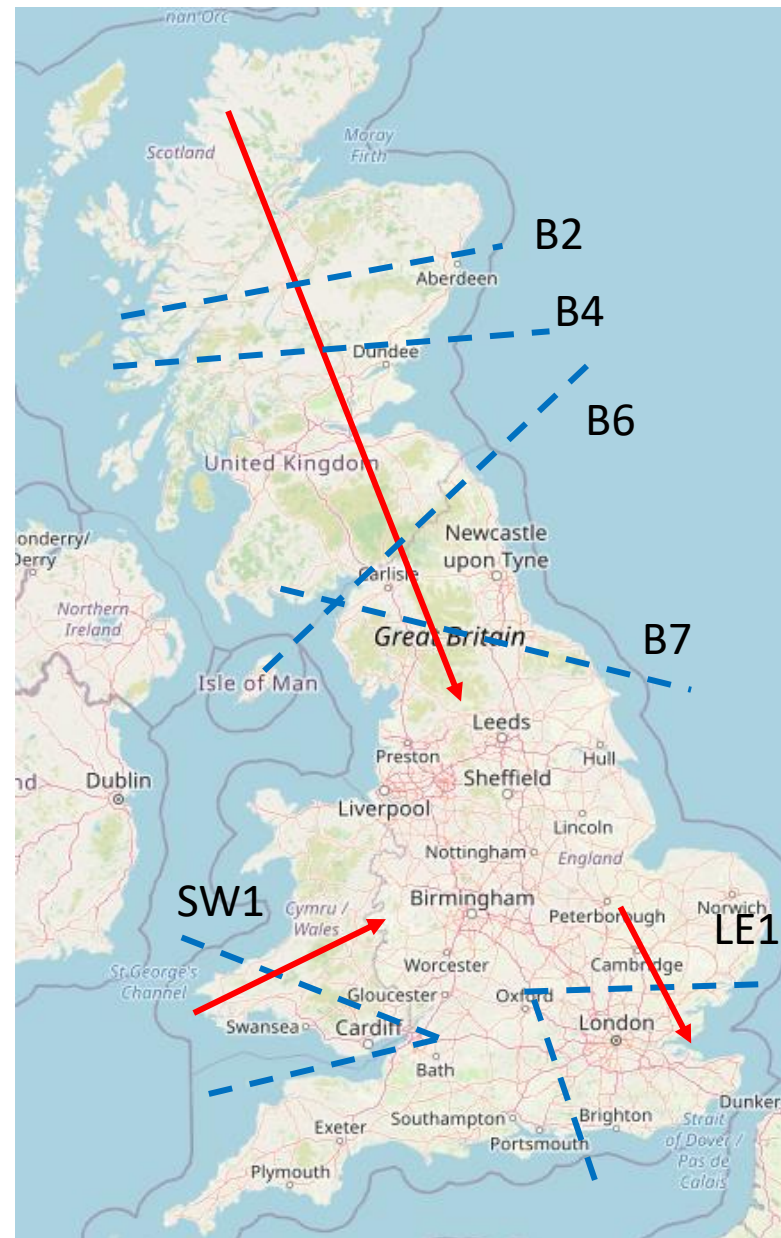
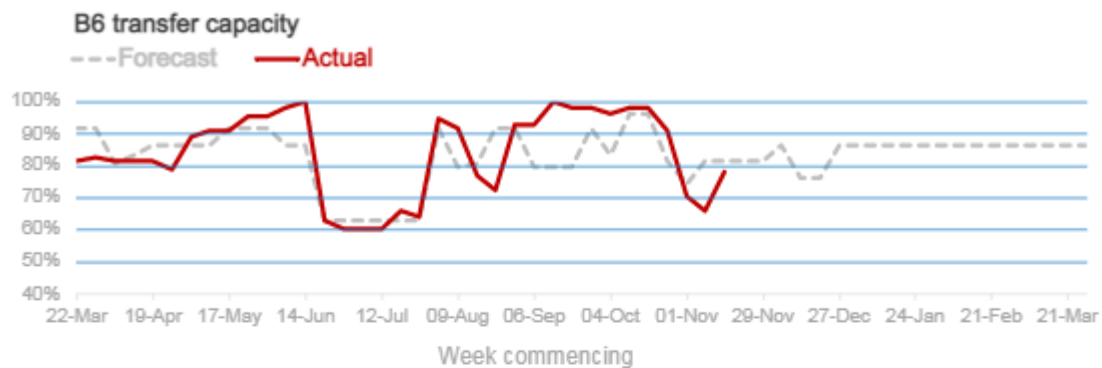
Action required to synchronise generation to meet our voltage requirements throughout the week

Increasing inertia

No Intervention required to increase minimum inertia

<https://data.nationalgrideso.com/balancing/constraint-breakdown>

Transparency | Constraint Capacity



Operational Margins: week ahead

From 18 November to 24 November

Operational margins measure the situation in the Control Room before operational tools are utilised to ensure enough generation.

Margins are adequate for next 7 days.

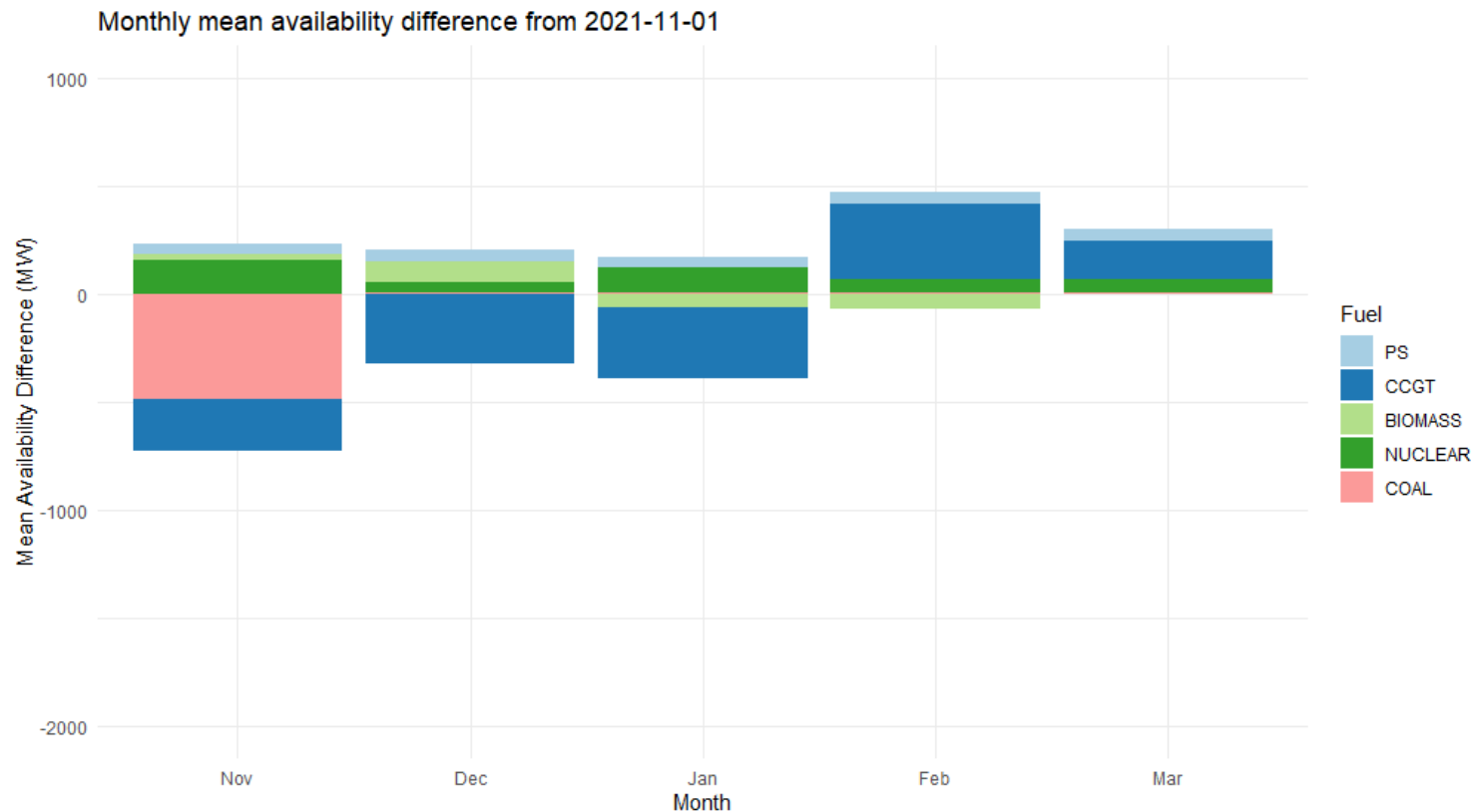
Driven by good wind generation

Day	Date	Notified Conventional Generation (MW)	Forecast Wind (MW)	Forecast Interconnector Availability (MW)	Forecast Peak Demand (MW)	Forecast Surplus (MW)
Thu	18/11/2021	42211	11924	3900	40594	11274
Fri	19/11/2021	43582	6819	3900	39595	10428
Sat	20/11/2021	43231	4706	3900	37565	10089
Sun	21/11/2021	43352	9537	3900	38905	13086
Mon	22/11/2021	45295	6690	3900	42843	8196
Tue	23/11/2021	45397	5329	3900	43449	6349
Wed	24/11/2021	45479	7626	3900	43880	7983

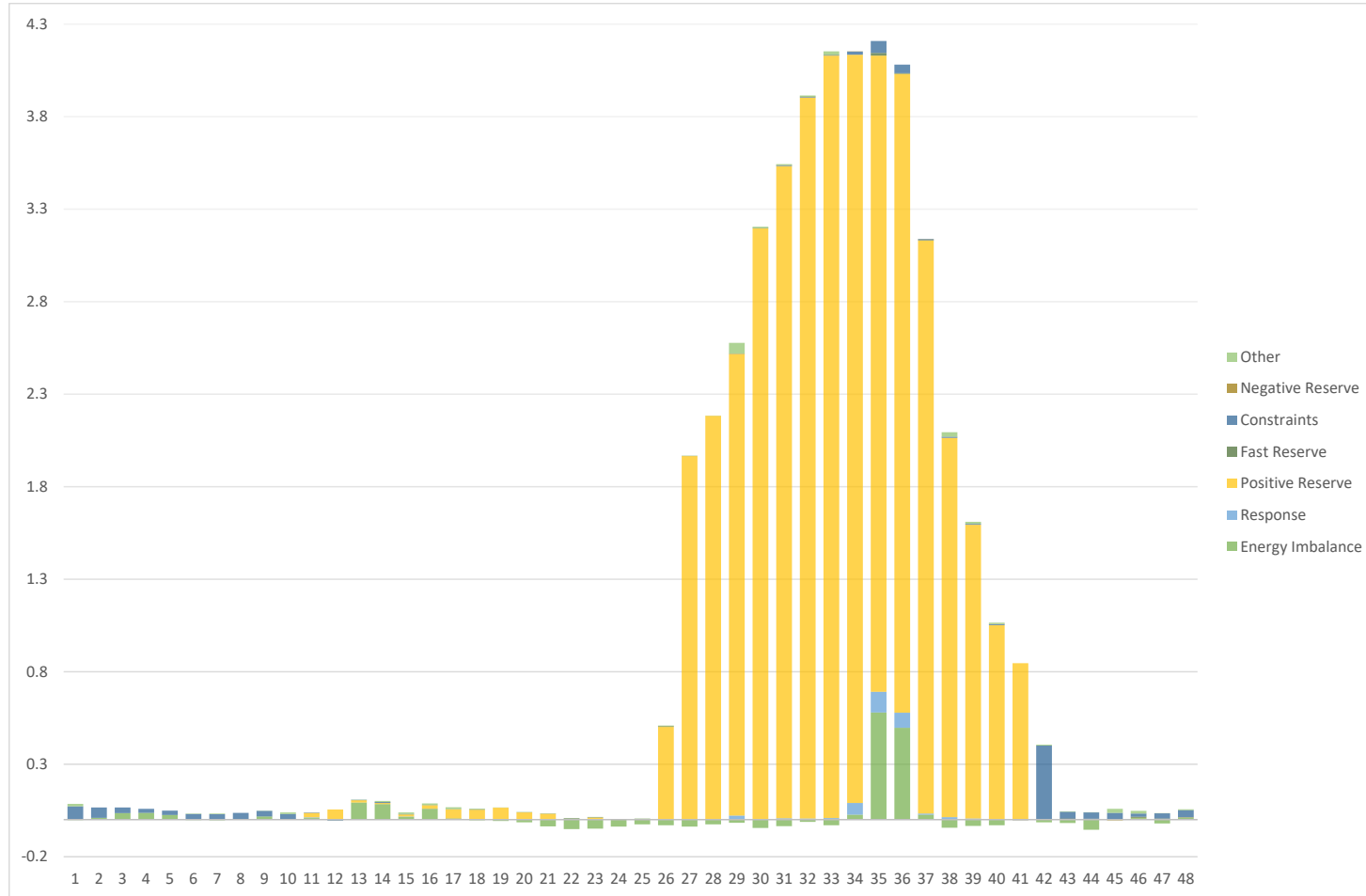
Operational Margins: change in generator availability

Delta from 01 Nov to 15 Nov

- Generator changes in November do not adversely impacted margin, as definite weather forecasts means worst weather conditions for November not materialising
- Generator availability has decreased by around 500MW in January.
- Small increases in generation for February and March



Balancing Cost Review – Tuesday 2 November 2021



Tuesday 2nd November saw balancing costs exceed £42m

Peak demand on the day outturned at around 42GW and changes in plant positions within day required additional units to be instructed, in time for the darkness peak that evening.

During the day, Offers of up to £4050/MWh Offers were accepted, to meet the operational margin requirements (positive reserve).

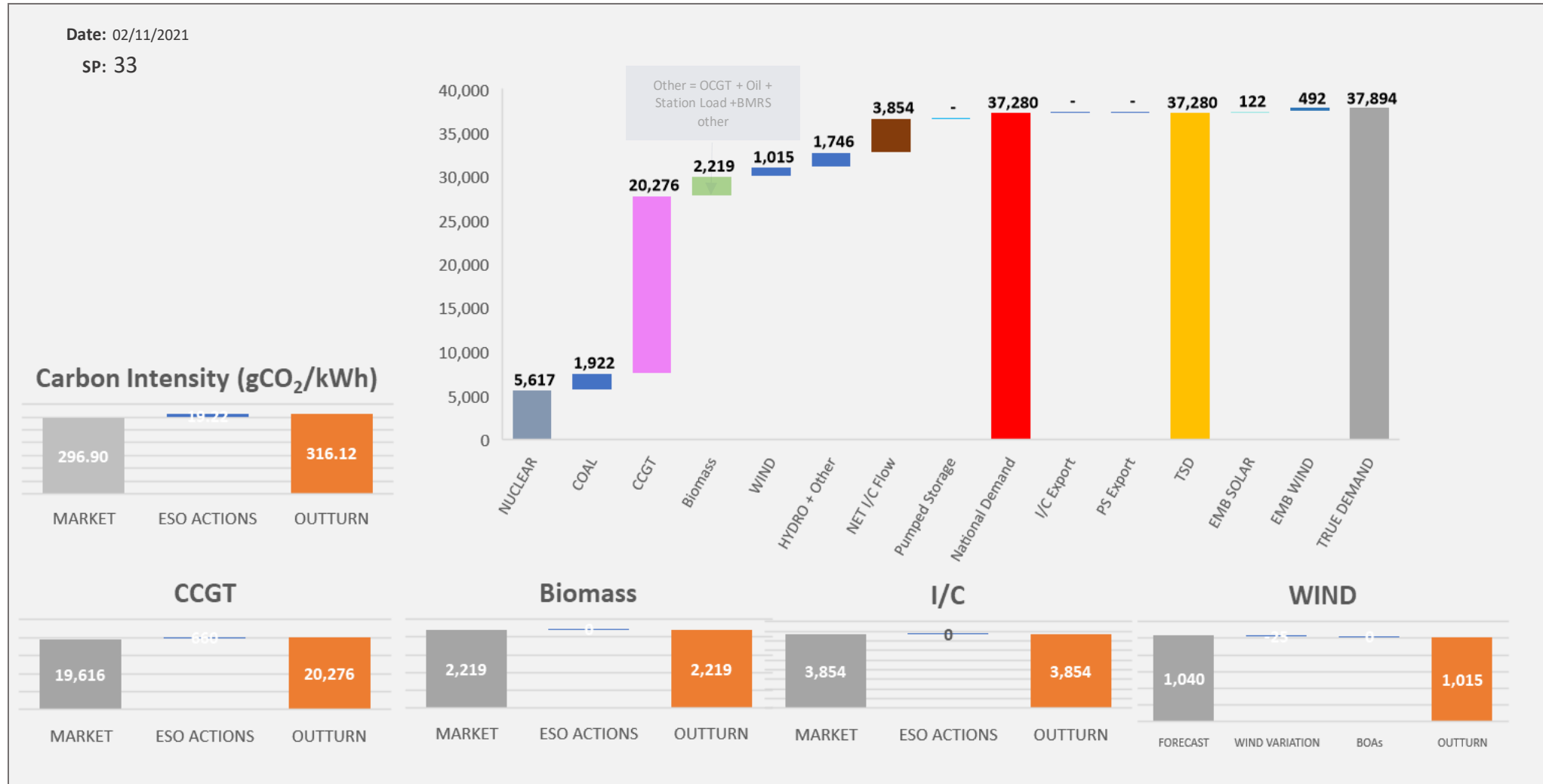
Resulted in high cash out prices at a max of £3916.28/MWh for SP 35&36

Margins were adequate on the day, but the energy price was high.

Balancing Cost Review ESO Actions | Tuesday 2 Nov 2021

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Settlement Period 33



Electricity System Restoration Standard (ESRS) – Implementation Consultation



Electricity System Restoration Standard (ESRS) – Implementation Consultation

NGESO new licence condition

- Restore 60% of regional demand to be restored within 24 hours;
- 100% of GB's electricity demand within 5 days.
- Fully compliant with the Standard by 31 December 2026.

In order to implement the new ESRS, the ESO has identified seven areas that need development and we are seeking views from industry on those areas (Technologies and locational diversity, Future networks, Markets and funding mechanisms, Regulatory frameworks, Assurance, Communication Infrastructure & Modelling and Restoration Tool).

Link to the consultation <https://www.nationalgrideso.com/document/220256/download> and all responses should be sent to commercial.operation@nationalgrideso.com by no later than **10 December 2021**

To express interest to join any of the working groups, please contact Sade Adenola, sade.adenola@nationalgrideso.com

Frequency Response Procurement

December FFR procurement

- In October we published our Dynamic Firm Frequency Response (FFR) requirements of 550MWs across all periods in December
- During November NSL has brought forwards an increase in export and import capability
- This increases our requirement for Dynamic Containment (DC) high & low across December
- We have therefore lowered our requirements for dynamic FFR in EFA blocks 1-4 to 300MW to ensure we are able to continue to manage the system
- Our requirement for dynamic FFR remains at 550MW for EFA blocks 5&6

Dynamic Containment requirements

- Our requirement for Dynamic Containment Low is greatest in EFA blocks 1&2
- This follows the distribution set out in November & December Market Information Reports
- We will communicate updated DC high & Low requirements in the January Market information report

DC-low		EFA						
From (MW)	To (MW)	1	2	3	4	5	6	All-day
0	0	0%	0%	19%	32%	42%	0%	16%
1	300	0%	0%	29%	19%	39%	45%	22%
301	600	29%	35%	32%	35%	16%	35%	31%
601	900	65%	58%	16%	10%	3%	19%	28%
901	1200	6%	6%	3%	3%	0%	0%	3%
1201	1500	0%	0%	0%	0%	0%	0%	0%

DC LF requirement for December 2021

Dynamic Moderation and Dynamic Regulation update

Dynamic Moderation and Dynamic Regulation

- **Launched EBR Art. 18 Consultation** – open until 15 December
- **Markets Day** – 18 November
- **Consultation overview webinar** – 23 November
- **Consultation technical deep dive webinar** – 30 November
- **Timeline – launch: DR – late March / DM - April**

Q&A

After the webinar, you will receive a link to a survey. We welcome feedback to understand what we are doing well and how we can improve the event ongoing.

Please ask any questions via Slido (code #OTF) and we will try to answer as many as possible now. If we are unable to answer your question today, then we will take it away and answer it at a later webinar.

Please continue to use your normal communication channels with ESO.

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

slido

Audience Q&A Session

 Start presenting to display the audience questions on this slide.

Q&A

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