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

# ESO Operational Transparency Forum

15th December 2021

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) 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

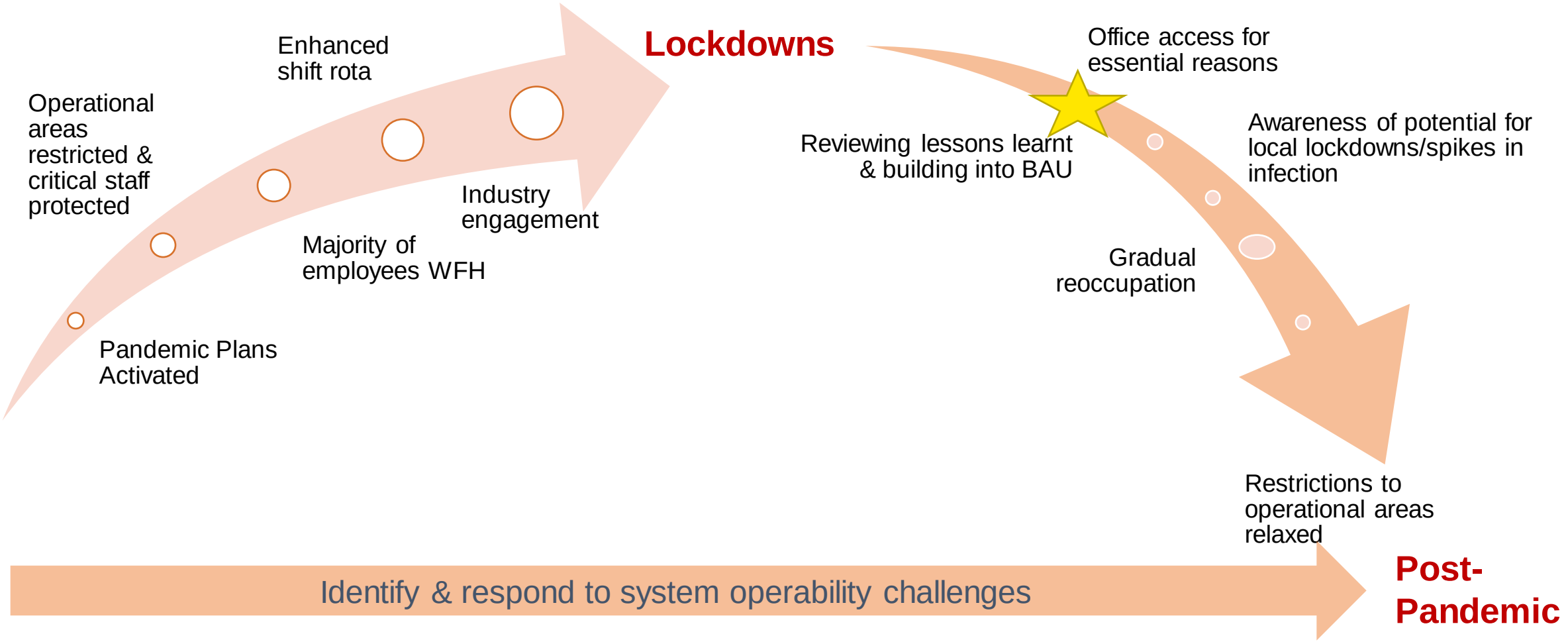
- Questions from last week
- Business continuity
- Demand review
- Costs for last week
- Outlook
- Constraints

## Focus Areas

Dynamic Moderation and Dynamic Regulation

Transparency | 24-month Constraint Limits

# Protecting critical staff to maintain critical operations



# Questions outstanding from last week

**Q:In relation to other questions posed here: What are S7A trades and multi-day S7A?**

A: Schedule 7a trades – BMU specific trades between ESO and a BMU or interconnector capacity holder

**Q: Has the NOA process factored in the high cost of replacement energy?**

A: The NOA takes a long-term view of the need for network development, by undertaking a cost benefit analysis of the costs of taking balancing actions to resolve constraints compared to the cost of additional network capacity being delivered through transmission reinforcements. The new reinforcements alleviate the need for some of the constraint actions and costs. The NOA seeks to find the best value for consumers in the long-run.

The model that we use, BID3, is a pan-European market model which uses input about future commodity prices and other factors from our FES analysis and AFRY (the provider of the BID3), to undertake a market simulation. Assumptions are made about plant behaviour for dispatch, and their prices in the balancing mechanism.

The NOA is not a short-term view. Decisions are made comparing constraints to reinforcements in timescales to capture the lifetime of the assets. As such the higher balancing costs seen this winter are not factored into the analysis. Any longer terms changes in commodity prices and plant behaviour will factor through in future, as updated are provided to the modelling tool.

For more information on our modelling approach please see: https://www.nationalgrid.com/sites/default/files/documents/Long-term%20Market%20and%20Network%20Constraint%20Modelling.pdf

**Q: Given that you want to protect final demand on customers, are you going to review the imbalance price calculation as well as the BM?**

A:The purpose of this work is to review current behaviours and market rules leading to high prices in the balancing market and therefore higher imbalance prices. If you believe that imbalance price calculations are driving current behaviours there is a stakeholder engagement element of this review where you can share these thoughts. (see terms of reference: Balancing Market Review - Terms of Reference | National Grid ESO )

# 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:**

12th Jan: Forecasting methodology (high level overview)

Balancing Services Adjustment Data (BSAD) Overview

SO – SO Trading

# December Forums

**We have set out the following timetable for the rest of the OTFs in December :**

**22nd December – Due to subject matter expert (SME) availability we will post the OTF slide pack on the data portal, no live Q&A session**

**29th December - No OTF as many SMEs are on holiday**

**05 January 2022 - OTF as usual – responding to Q&As received previously**

We would like to remind people that you can always send in your questions to the following e-mail address and we will provide answers at the beginning of the new year.

box.NC.Customer@nationalgrideso.com

# ESO Review of Balancing Market

Every day the ESO balances supply and demand across the power system. In recent weeks there have been some very high-cost days in the balancing mechanism. As those costs are ultimately borne by consumers it is important to fully understand the factors driving the market.

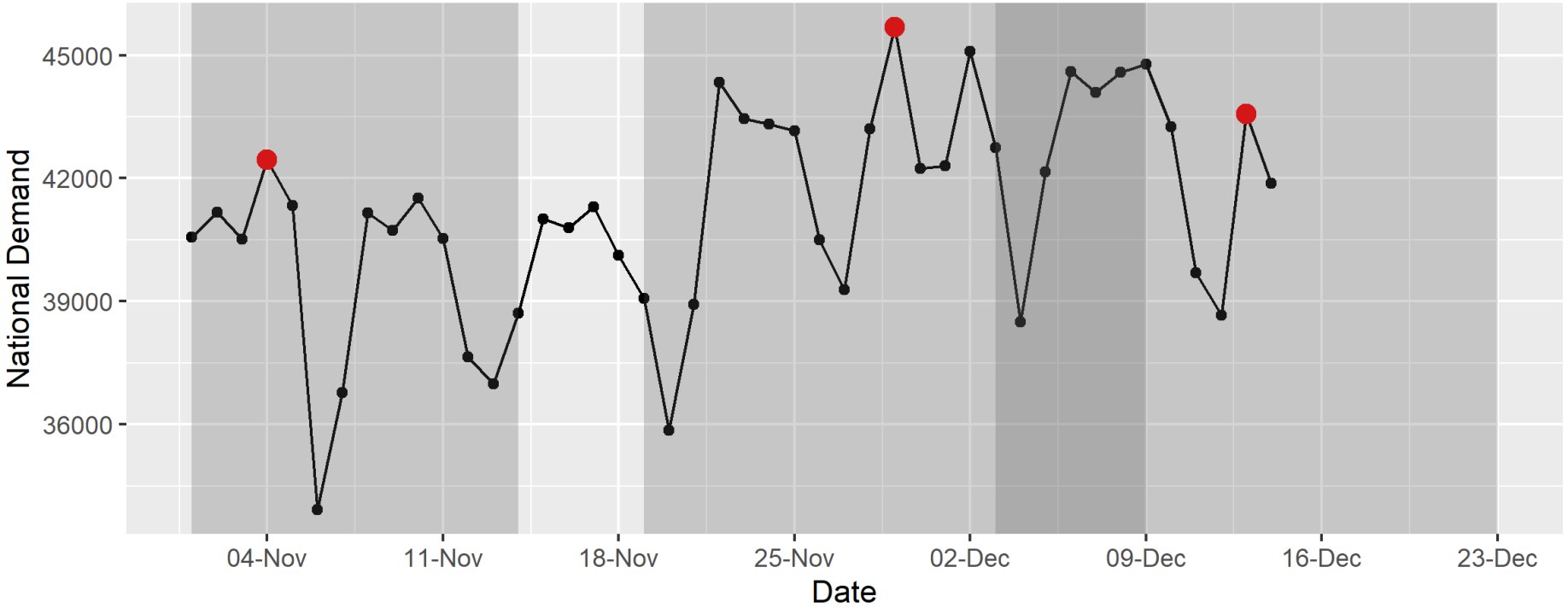
The ESO will therefore undertake a review of the balancing market. It will be run by the National Grid ESO Market Monitoring Team and will be carried out by external consultants.

There are many issues that can, and will, have contributed to the high costs. Our review will seek to ensure that, at a time when households' budgets are under strain, consumers can continue to have confidence in the market.

Update: Terms of Reference published 6 December

https://www.nationalgrideso.com/news/balancing-market-review-terms-reference

# Demand | Indicative Peak National Demand

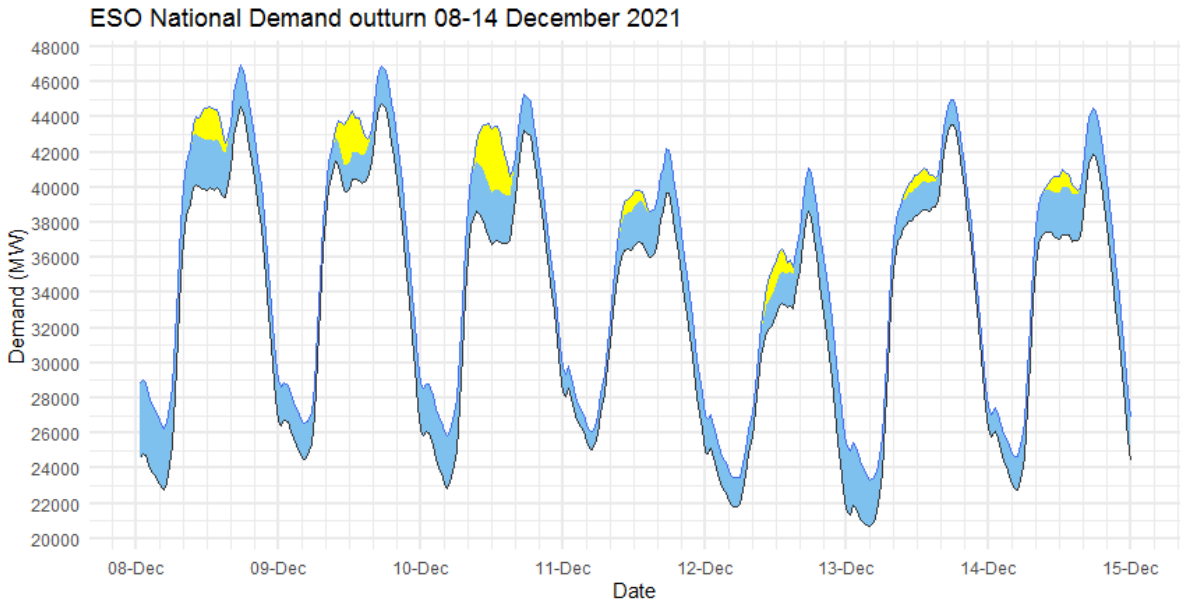



| Date | Time (HH ending) | National Demand (MW) | Estimated triad avoidance (HH corresponding with the time of the peak) (MW) |
|---|---|---|---|
| 29/11/2021 | 1730 | 45679 | 0 |
| 13/12/2021 | 1800 | 43566 | 300 |
| 04/11/2021 | 1730 | 42443 | 0 |

National Demand 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). It shows time as half hour beginning.

# Demand | Last 7 days outturn

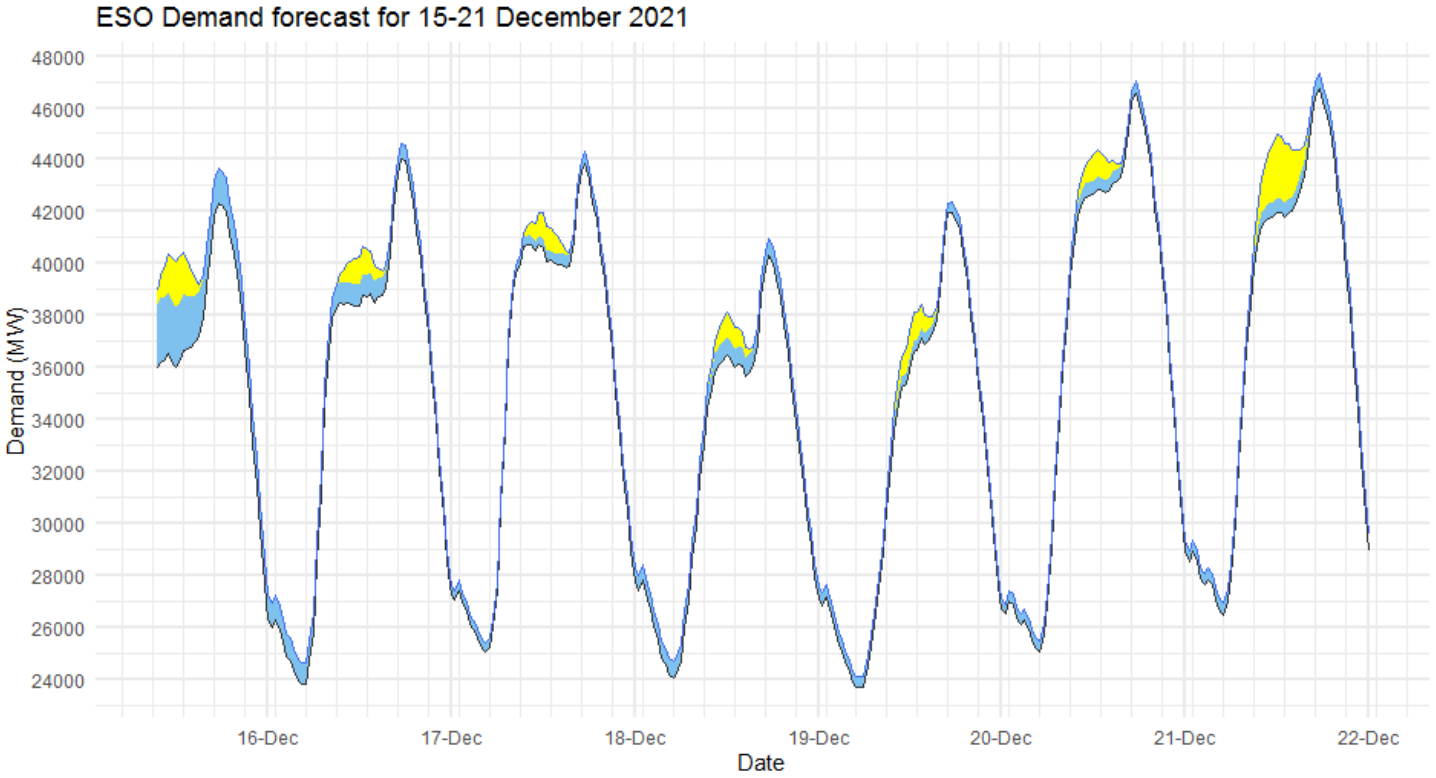



| | | FORECAST (Wed 08 | | OUTTURN | | | |
|---|---|---|---|---|---|---|---|
| Date | Forecasting Point | National Demand (GW) | Dist. wind (GW) | National Demand (GW) | Triad Avoidance est. (GW) | N. Demand adjusted for TA (GW) | Dist. wind (GW) |
| 08 Dec | Evening Peak | 44.9 | 2.6 | 44.6 | 0.0 | 44.6 | 2.4 |
| 09 Dec | Overnight Min | 24.2 | 2.1 | 24.5 | n/a | n/a | 2.0 |
| 09 Dec | Evening Peak | 45.0 | 2.3 | 44.8 | 0.0 | 44.8 | 2.1 |
| 10 Dec | Overnight Min | 22.8 | 3.1 | 22.9 | n/a | n/a | 3.0 |
| 10 Dec | Evening Peak | 43.1 | 2.5 | 43.2 | 0.0 | 43.2 | 2.1 |
| 11 Dec | Overnight Min | 24.1 | 1.1 | 25.1 | n/a | n/a | 1.0 |
| 11 Dec | Evening Peak | 39.0 | 2.4 | 39.7 | 0.0 | 39.7 | 2.5 |
| 12 Dec | Overnight Min | 21.4 | 1.8 | 21.8 | n/a | n/a | 1.7 |
| 12 Dec | Evening Peak | 39.0 | 2.2 | 38.7 | 0.0 | 38.7 | 2.5 |
| 13 Dec | Overnight Min | 20.8 | 2.6 | 20.7 | n/a | n/a | 2.7 |
| 13 Dec | Evening Peak | 43.5 | 1.8 | 43.6 | 0.3 | 43.9 | 1.4 |
| 14 Dec | Overnight Min | 22.3 | 2.5 | 22.8 | n/a | n/a | 1.9 |
| 14 Dec | Evening Peak | 41.7 | 3.5 | 41.9 | 0.0 | 41.9 | 2.6 |

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.

# Demand | Week Ahead

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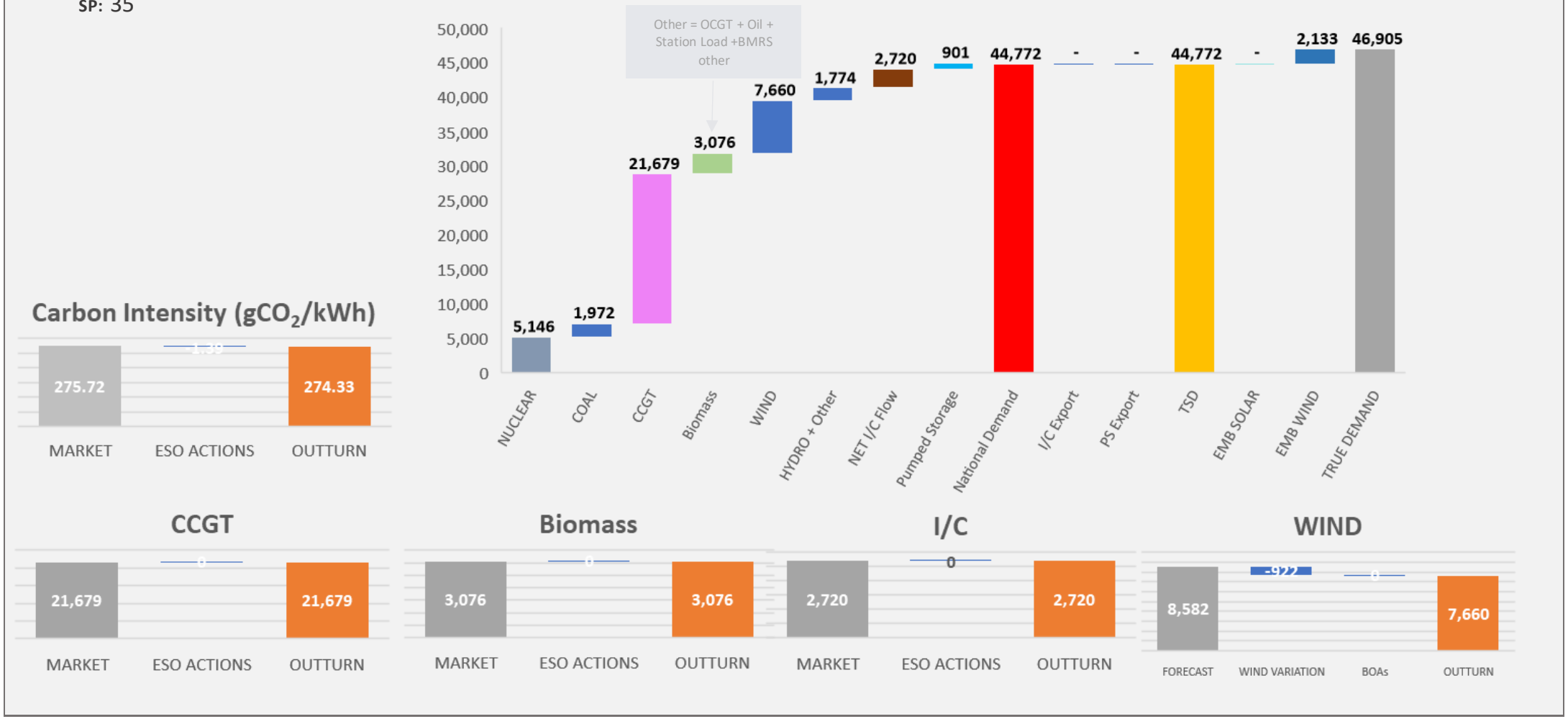
| | | FORECAST (Wed 15 Dec) | |
|---|---|---|---|
| Date | Forecasting Point | National Demand (GW) | Dist. wind (GW) |
| 15 Dec 2021 | Evening Peak | 42.3 | 1.3 |
| 16 Dec 2021 | Overnight Min | 23.8 | 0.8 |
| 16 Dec 2021 | Evening Peak | 44.0 | 0.6 |
| 17 Dec 2021 | Overnight Min | 25.1 | 0.3 |
| 17 Dec 2021 | Evening Peak | 43.9 | 0.4 |
| 18 Dec 2021 | Overnight Min | 24.1 | 0.6 |
| 18 Dec 2021 | Evening Peak | 40.3 | 0.7 |
| 19 Dec 2021 | Overnight Min | 23.7 | 0.4 |
| 19 Dec 2021 | Evening Peak | 42.0 | 0.4 |
| 20 Dec 2021 | Overnight Min | 25.1 | 0.4 |
| 20 Dec 2021 | Evening Peak | 46.6 | 0.4 |
| 21 Dec 2021 | Overnight Min | 26.5 | 0.4 |
| 21 Dec 2021 | Evening Peak | 46.7 | 0.6 |

# ESO Actions | Thursday 09 December Peak

**Date:** 09/12/2021

**SP:** 35

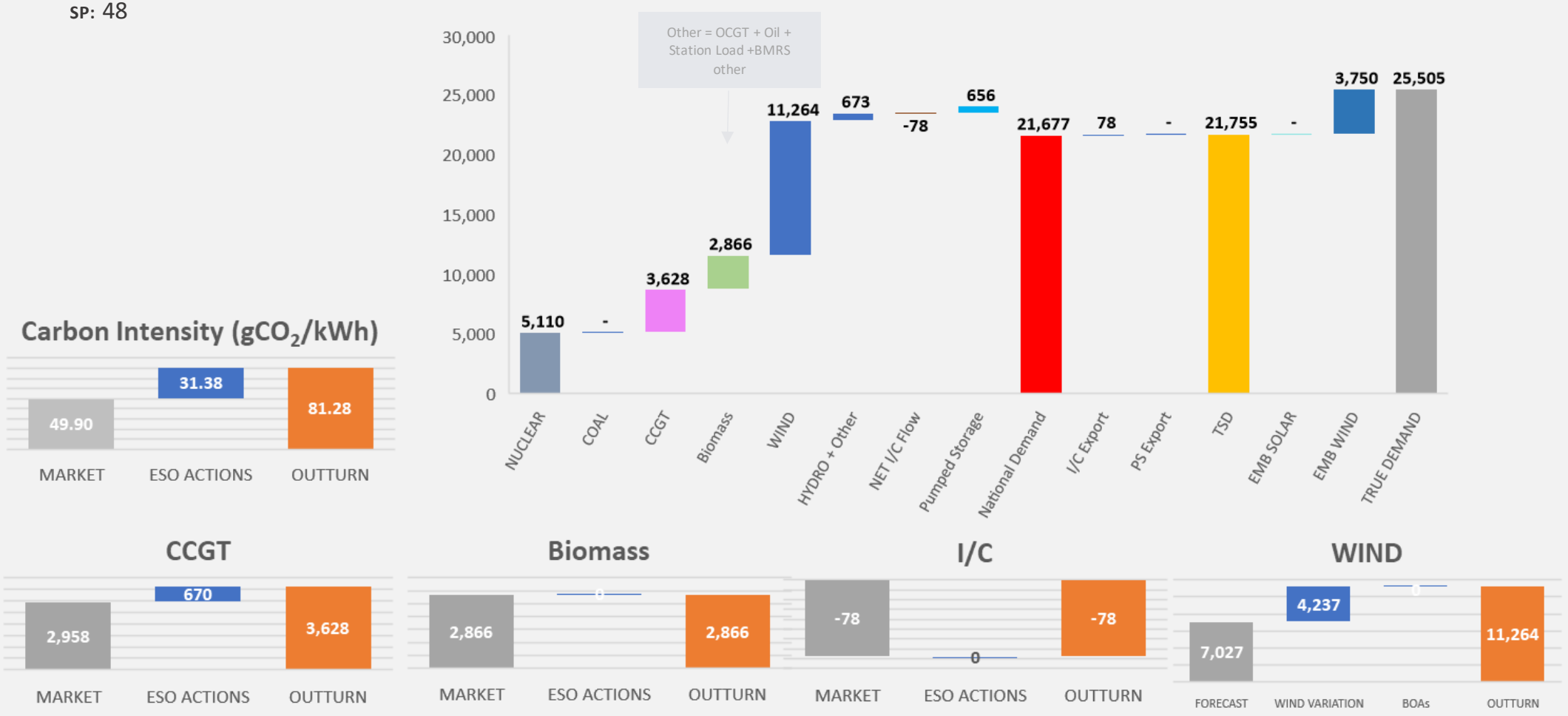



Carbon Intensity data on data portal: https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions

# ESO Actions | Sunday 12 December Minimum

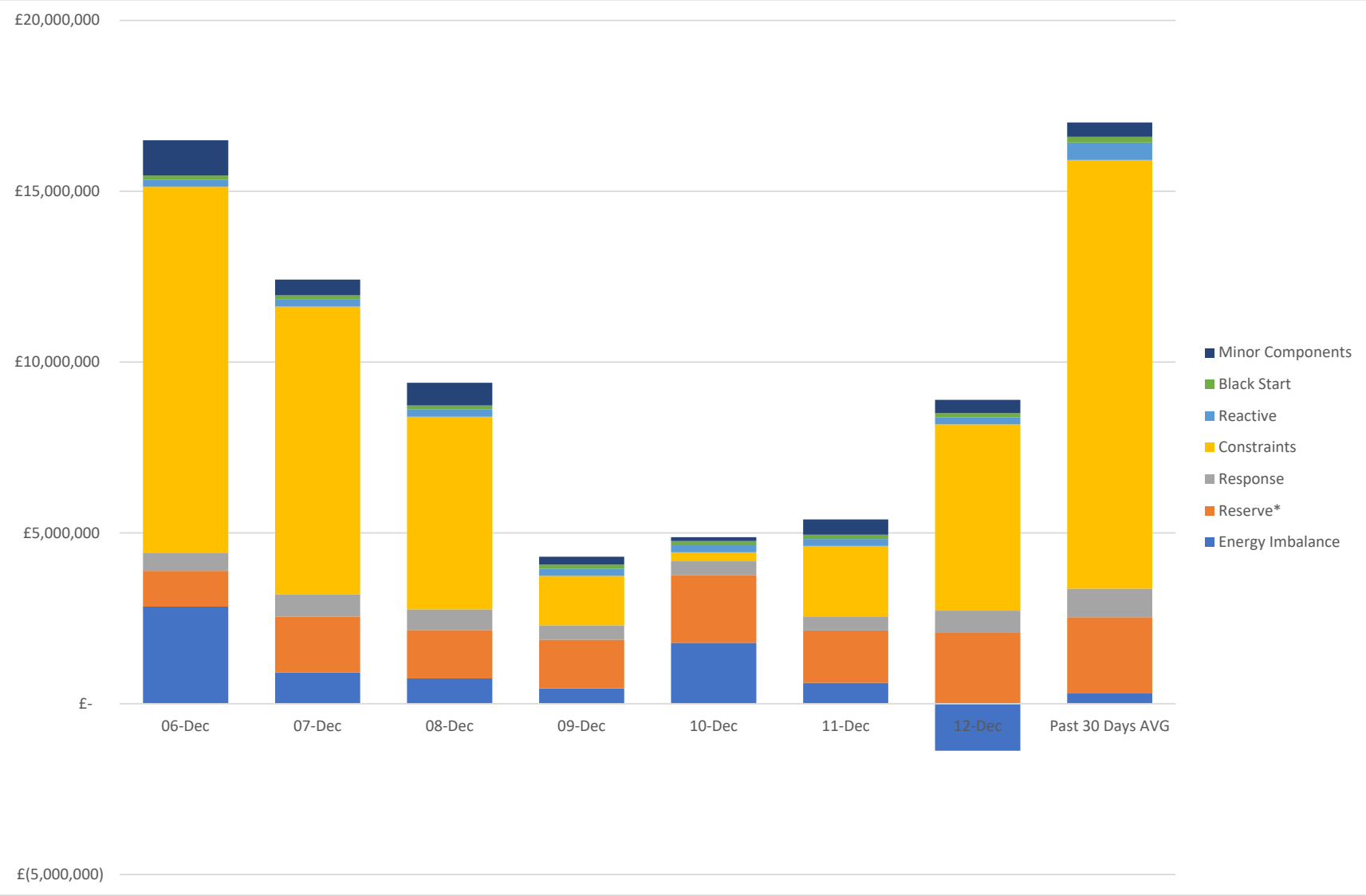
**Date:** 12/12/2021

**SP:** 48




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

# Transparency | Costs for the last week

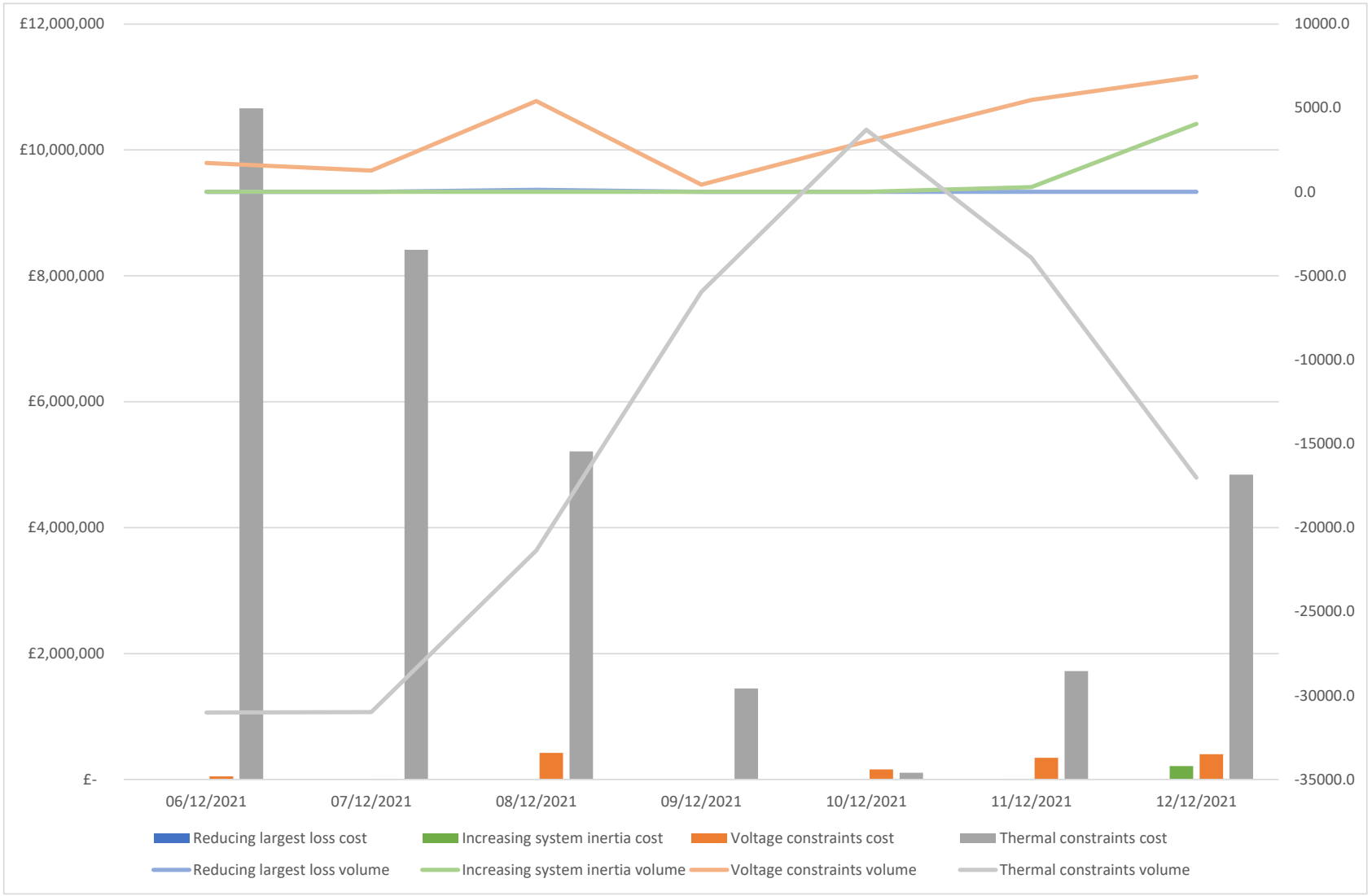



Monday 6th and Tuesday 7th were the most expensive days, with a daily spend of around £16m and £12m respectively. Sunday the spend was around £7m.

Constraints actions were needed due to the windy weather that was requiring large volume of BM actions to reduce generation to manage thermal constraints.

**Past 30 Days Average added**

# Transparency | Constraint cost breakdown




**Thermal**
Monday to Wednesday, and Sunday, high volume of actions required to manage thermal constraints.

**Voltage**
Wednesday, Friday, Saturday and Sunday some action required to synchronise generation to meet voltage requirements

**Managing largest loss for RoCoF**
No action required to manage largest loss on interconnectors.

**Increasing inertia**
Sunday intervention required to increase minimum inertia.

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

# 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, imports and peak demand. This is based on information available to National Grid ESO as of 15 December and is subject to change. It represents a view of what the market is currently intending to provide before we take any actions.

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.

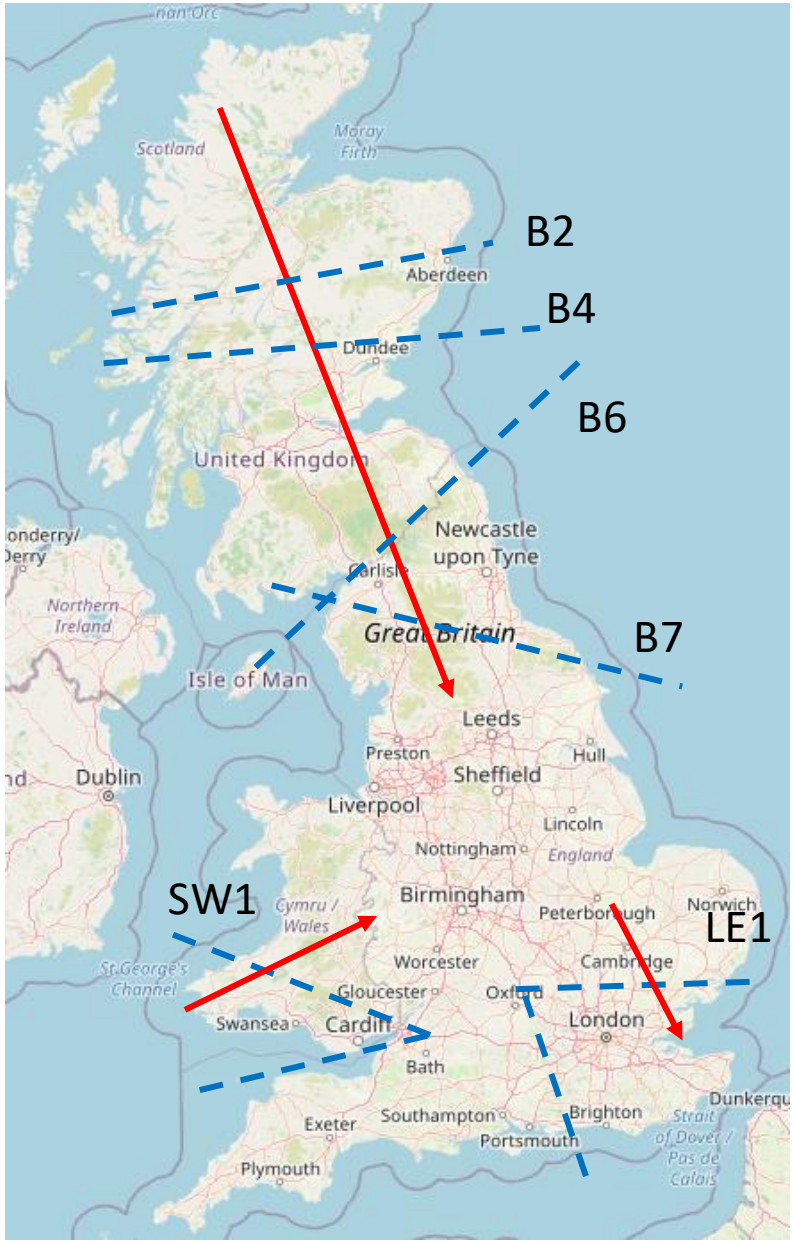
Margins are adequate for the remainder of this week. There may be some tight periods in the following week.

| Day | Date | Notified conventional generation (MW) | Wind (MW) | Interconnector availability (MW) | Peak demand (MW) | Indicative surplus (MW) |
|---|---|---|---|---|---|---|
| Thu | 16/12/2021 | 43672 | 2143 | 3900 | 45078 | 2200 |
| Fri | 17/12/2021 | 44251 | 715 | 3900 | 44663 | 1605 |
| Sat | 18/12/2021 | 43401 | 952 | 3900 | 41090 | 3299 |
| Sun | 19/12/2021 | 45527 | 659 | 3900 | 42727 | 3168 |
| Mon | 20/12/2021 | 46297 | 928 | 3900 | 47292 | 646 |
| Tue | 21/12/2021 | 46721 | 1821 | 3900 | 47441 | 1583 |
| Wed | 22/12/2021 | 46961 | 2125 | 3900 | 46256 | 2794 |

# Transparency | Constraint Capacity

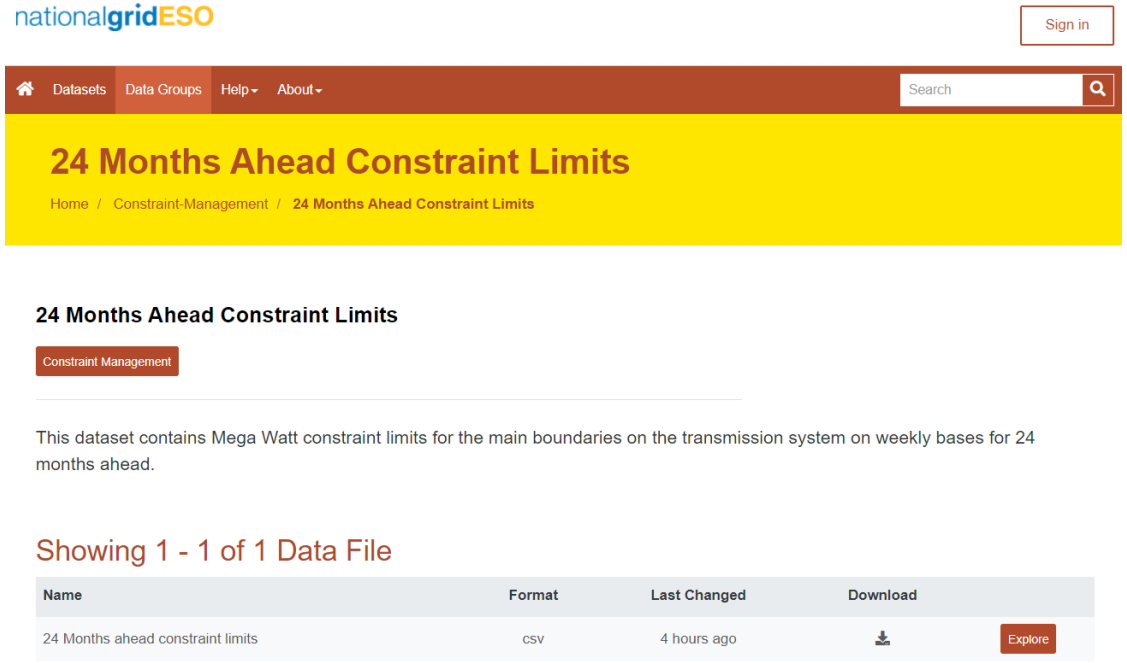
| 100% transfer capacity (MW) | |
|---|---|
| B6 | 5400 |
| B7 | 8250 |
| B2/B4 | 2700 |



# Transparency | 24 month Constraint Limits

- We have published on the ESO data portal Constraint limits for January 2022 to December 2023.
- We will publish monthly, with updated constraint limits for the next 24 months out.
- The limits are based on the current view of the TOs outage plans.
- From these limits we will produce a 24 month constraint cost forecast, which we aim to publish in early 2022.
- The constraint costs will then feed into our monthly BSUoS forecast.



# Dynamic Moderation and Dynamic Regulation

- EBR Article 18 DM & DR Consultation closes on **15 December**
- FAQ document updated
- Consultation webinar content & Service Terms video
- Performance Monitoring CSV template
- Testing Analysis Tool & user guide

Latest information can be found on DM and DR webpages

Contact the team at: box.futureofbalancingservices@nationalgrideso.com

# 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.

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slido

# Audience Q&A Session

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

# Q&A

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