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# NESO Operational Transparency Forum

16 April 2025

NESO
National Energy System Operator

# Introduction | Sli.do code #OTF



**To ask questions live & give us post event feedback go to Sli.do event code #OTF**

- **Ask your questions as early as possible** as our experts may need time to ensure a correct answer can be given live.
- **Please provide your name or organisation**. This is an operational forum for industry participants therefore questions from unidentified parties will not be answered live. If you have reasons to remain anonymous to the wider forum, please use the advance question or email options below.
- **The OTF is not the place to challenge the actions of individual parties** (other than the NESO), and we will not comment on these challenges. This type of concern can be reported to the Market Monitoring team at: marketreporting@nationalenergyso.com
- **Questions will be answered in the upvoted order whenever possible**. We will take questions from further down the list when: the answer is not ready; we need to take the question away or the topic is outside of the scope of the OTF.
- **Sli.do will remain open until 12:00**, even when the call closes earlier, to provide the maximum opportunity for you to ask questions. After that please use the advance questions or email options below.
- **All questions will be recorded and published.** Questions which are not answered on the day will be included, with answers, in the slide pack for the next OTF.
- **Ask questions in advance** (before 12:00 on Monday) at: https://forms.office.com/r/k0AEfKnai3
- **Ask questions anytime** whether for inclusion in the forum or individual response at: box.nc.customer@nationalenergyso.com

**Stay up to date on our webpage:** https://www.neso.energy/what-we-do/systems-operations/operational-transparency-forum (OTF Q&A is published with slide packs)

Note: to access previous OTF webinars from Slido click on the three lines to the left of forum title

# Future deep dive / focus topics

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**Today's Focus Topics/deep dives**

Summer Outlook

March Balancing Costs

**Future**

There will be **no OTF on 23 April** (next week)

Introduction to contracts for Difference (CfD) – 30 April

April Balancing Costs – 21 May

If you have questions/suggestions of areas to cover during above presentations or ideas for deep dives or focus topics you would like us to consider, please send them to us at: box.nc.customer@nationalenergyso.com



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# Publication of Long-Term Forecasts for DC/DM/DR Requirements

- The monthly forecast for DC/DM/DR requirements for the next 12 months has been published since 14 April on NESO's data portal (Long-Term Forecasts for DC, DM and DR Requirements | National Energy System Operator).
- The long-term DC forecast model is an enhancement of the existing day-ahead DC forecasting model. It incorporates forecasted demand, inertia, and response volumes, along with an analysis of the largest potential losses in the system, to estimate DC requirements.
- A dashboard for visualising these results will be available soon.



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# Balancing Reserve – Feedback on Dispatch Flexibility Rules

Ahead of our upcoming Balancing Reserve Article 18 consultation and following on from work presented in our November Reserve webinar, we would like to seek feedback from current and prospective providers of Balancing Reserve around the Dispatch Flexibility Parameters for the service.

Currently the Balancing Reserve Service Terms require a Minimum Activation Period of 1 minute, and the contracted quantity must be able to be dispatched in 1 MW increments.

If a change in these parameters to a 5-minute Minimum Activation Time and 25MW Dispatch Rule took place, would this affect your participation and volumes in Balancing Reserve.

Share your views

# Future Event Summary

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| Event | Date & Time | Link |
|---|---|---|
| Long-term 2029 tender – consultation and expression of interest | Consultation feedback deadline: 17th April<br>Expression of interest deadline: 28th April | Further details |
| Balancing Programme Technology Stakeholder Focus Group | 28th April (11:30-13:00) | Register here |
| Markets Forum Q&A Webinar | 28th April (15:00-16:00) | Register here |
| Skip Rate In-Person Forum | 1st May (09:30-15:00)<br>**Registration closes 22nd April** | Register here |
| Balancing Programme Event | 24th June (09:00-17:30) | Register here |

Check out the NESO Events Calendar for more...

**Reminder:**

There is still time to submit consultation feedback about the Long-term 2029 tender by **5pm on Thursday 17 April 2025**

If you would like to provide reactive power services, stability services or restoration services across Great Britain from 2029 onwards: **Express your Interest by 28 April 2025 to take part**

To find out more, you can watch our pre-recorded webinar videos, available here

Long-term 2029 webinars

**Note:** Yesterday, 15 April 2025, NESO published an additional document as part of the EOI Pack about the potential opportunity for project-specific reservation.

LT2029 Project-Specific Reservation Proforma

If you have any questions, please email box.voltage@nationalenergyso.com or box.stability@nationalenergyso.com

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# Markets Forum Q&A 28th April 2025

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Join our live Q&A webinar on **28 April** at **3pm** where the NESO Markets Team will be available to answer your questions. We'll share a pre-read of our latest updates with you by the 21 April, which will cover topics such as the Markets Roadmap, Routes to Market and REMA.

If you have any questions ahead of the webinar, you can submit them on Sli.do using the code #MFAPR25. Alternatively, you can email your questions to us here - box.marketsengagement@nationalenergyso.com

**Sign up here**

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# Balancing Programme Event

Register here

Slido code #OTF

**Date:** 24 June 2025

**Time:** 09:00 – 17:30

**Location:** The Clermont Hotel, London, Charing Cross, WC2N 5HX

Secure your place at our in-person Balancing Programme Engagement Event on 24 June in London, to hear the latest from the programme, how it supports the transition to clean power and is delivering consumer value.

You'll hear updates on activity to transform our balancing and forecasting capabilities and we'll discuss a range of topics you told us were important. Back by popular demand is the day in the life of a control room engineer (covering a different time period from our previous session). Our team will be on hand to answer your questions.

A detailed agenda and slide pack will be sent out ahead of the event.

Please note that although this event has reached capacity, we are running a wait list and hope to release some spaces over the coming weeks.

If you have any questions, please contact the team at:
**box.balancingprogramme@nationalenergyso.com**

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# Summer Outlook
## 2025

Slido code #OTF

www.neso.energy/publications/summer-outlook

marketoutlook@nationalenergyso.com

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# Summer Outlook 2025 at a Glance

1

## Security of supply

We expect there to be sufficient supply to meet demand – and our reserve requirements – at all times this summer.

We also expect to be able to support exports to interconnected countries if needed and will continue the close working and coordinated support with our neighbouring transmission system operators (TSOs).

2

## Managing low demand

We are confident we have the tools in place to reliably operate the system.

We expect the changing nature of low demand periods, along with the reduced availability of pumped storage this summer, to increase the number of everyday actions required to balance supply, demand and system needs.

There may be periods when we need to use our full range of operational tools, including issuing a Negative Reserve Active Power Margin (NRAPM) notice, an explanation of which is provided later in this report.

3

## Electricity markets

Prices indicate that Great Britain is likely to be a significant net importer of electricity this summer.

High forecast generation availability in continental Europe has resulted in lower wholesale prices in key interconnected markets. These price differences have been reflected in interconnector capacity auctions, with import capacity pricing significantly above export capacity.

The growth in renewable generation in continental Europe suggests the potential for oversupply in solar-peak hours in key interconnected markets.

4

## Operations and resilience

We continue to innovate and adapt to efficiently operate a rapidly changing electricity system. The systems, tools and services developed in support of our zero carbon ambition will reduce costs, cut carbon and support reliable operations this summer.

In line with our expanded responsibilities, we are working closely with Government, Ofgem, National Gas and the wider industry to build resilience to potential risks facing the energy system, and to ensure readiness for the season ahead.

# Operational surplus

**We expect to have a sufficient operational surplus throughout the summer when considering natural variations in demand, wind and solar generation and generator availability.**

Our analysis shows peak demand – and our reserve requirement – can be met throughout summer. Figure 1 shows the central forecast and a range of credible outcomes for the daily margin. To derive this range, we assess the daily surplus under typical conditions using average weather conditions for demand, wind and solar generation, and scheduled availability for conventional generation. We then simulate 30,000 variations around this central view, using multiple scenarios for weather, demand, conventional generation availability, wind generation, solar PV output and interconnector availability. This provides us with a forecast range (the pink plume in Figure 1 shows the 90% confidence range of this forecast, while the dashed line in Figure 1 shows the 98% confidence range).

While there may be some days where the surplus falls below this range, current data suggests that large revisions to generator availability would be required for the operational surplus to approach our reserve requirement. Scheduled generator outages follow the pattern of peak demand forecast across the season, leading to a broadly flat operational surplus. Variation in the peak demand forecasts is shown on page 7, while planned availability is detailed on page 8 and in the accompanying data workbook.

Our analysis also indicates that we will be able to export to neighbouring countries if required. However, power prices and capacity auction results suggest that Great Britain will, in aggregate, be a significant net importer across the summer.

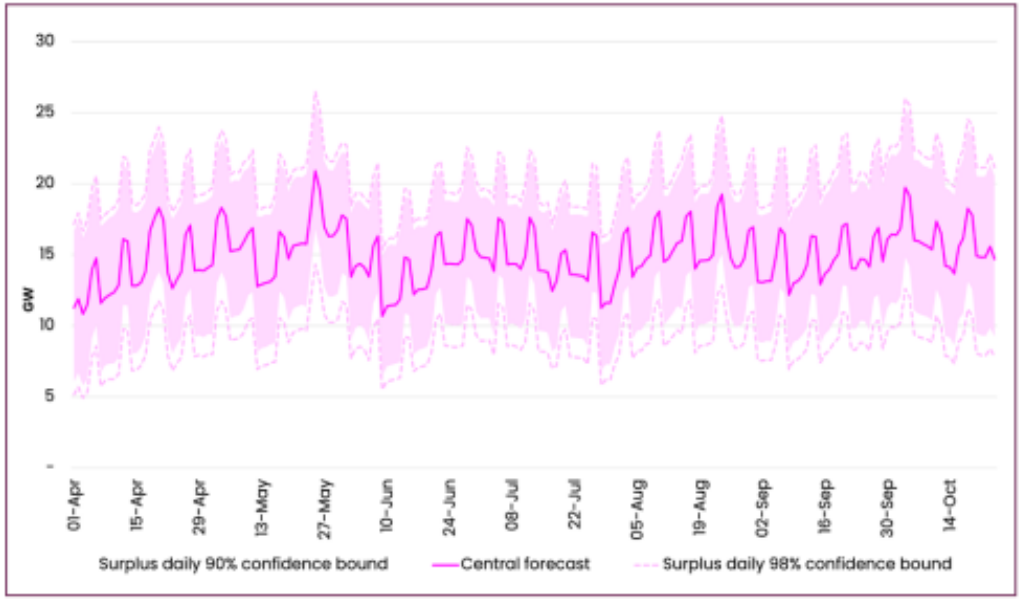


Figure 1: Range of outcomes for the daily operational surplus under different supply and demand conditions

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# Minimum demand variability

**Embedded renewable generation is increasing demand variability and broadening the range of weather patterns that can result in low demand.**

Figure 4 shows the variation in demand that can occur – at a 1 in 10-year risk level – due to weather alone. The late May bank holiday has the greatest probability of extremely low demand (14 GW or below). However, the lowest demand day could credibly occur on any weekend between early May and late August.

Figure 5 shows the potential range of minimum demand during overnight and afternoon periods. Year on year, there is a growing probability that the lowest daily demand will occur in the afternoon. This occurred 12 times during 2024 and has already been observed 6 times in March 2025. The wider range of weather patterns that result in low demand has increased the probability (to ~50%) that we will observe a new record low National Demand (below 13.4 GW) this summer.

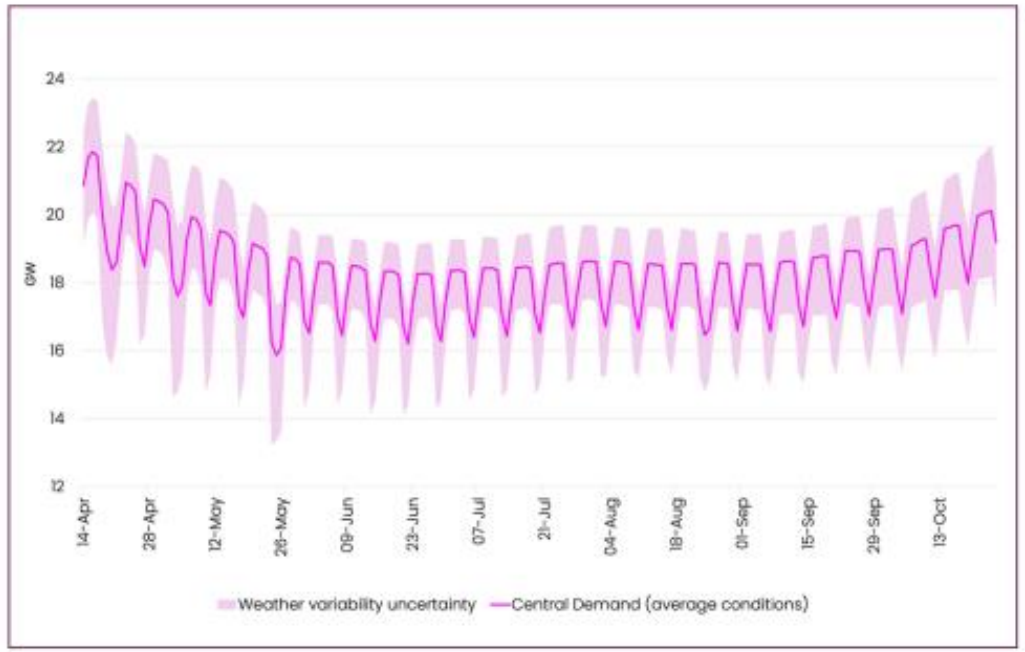


Figure 4: Daily minimum National Demand for our central scenario and the impact of weather variation (80% confidence range)

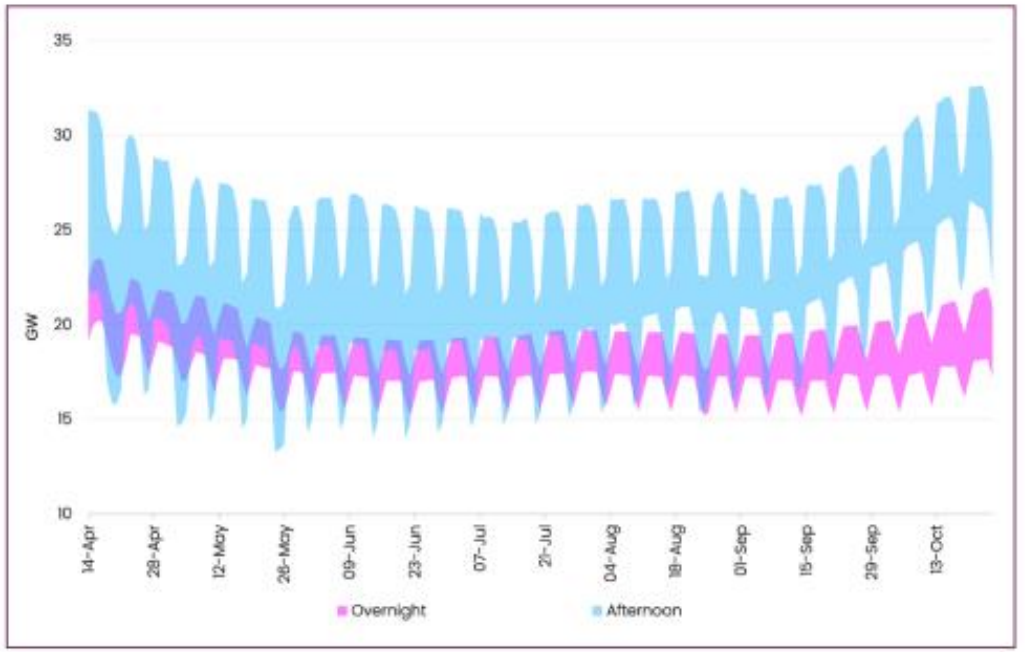


Figure 5: Daily minimum demand forecast range (80% confidence range) by time of day

Slido code #OTF

# Operating the system at low demand

**We are confident we have the right tools to enable the safe, reliable and efficient operation of the system.**

To balance supply, demand and system needs, we must take action when demand is low. We have a range of tools at our disposal, including balancing services, interconnector trading and the balancing mechanism.

This summer, we forecast periods where inflexible generation, units meeting system requirements, and wind output will exceed demand. Figure 6 shows the lower bound of the forecast demand range against illustrative high wind output, interconnector imports, scheduled inflexible generation, and a high requirement for additional units to provide system stability or reactive power.

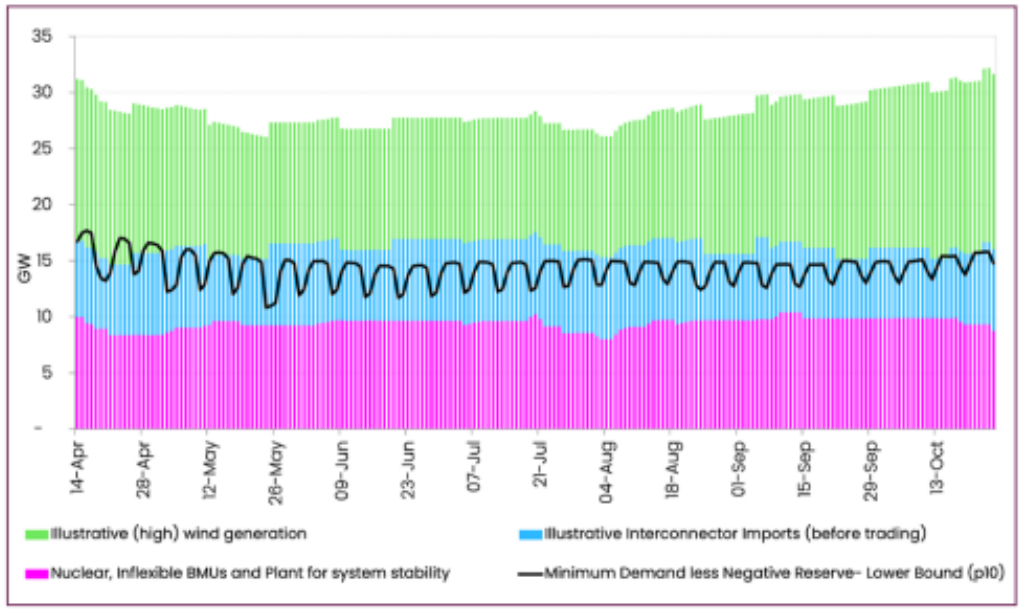


Figure 6: The lower bound of the forecast minimum demand range shown against inflexible generation, units providing system stability and wind output at the 70th percentile for each day. While it is not credible to expect the 1-in-10-year level to occur every day over summer, it may occur on individual days across the period.

In these situations, the ability to shift energy across time (using battery or pumped storage) or between markets (via interconnectors) is key to balancing demand and supply on the transmission system.

Between April and September, there are several outages at pumped storage stations, which will limit the ability to create transmission system demand – by approximately 1 GW compared to summer 2024. This reduced flexibility could lead to an increase in the number of everyday actions required to operate the system.

There may be isolated days this summer when we need to use our full range of operational tools, including the use of a Negative Reserve Active Power Margin (NRAPM) notice.

## What is a Negative Reserve Active Power Margin (NRAPM) notice?

At times of low demand, or in periods where generation connected directly to distribution networks makes up more of the supply, we might identify that we need some additional flexibility on the system. If our forecasts indicate that matching supply and demand through the normal mechanisms may not be possible, we will issue a message to the electricity market to signal that additional flexibility is required. This message is referred to as an NRAPM and is part of a range of system notices available to us. System notices are standard operational tools and do not indicate that supply, or the system, is at risk.

NRAPM notices are rare – to date only a small number of local NRAPMs have been issued and none at the national level.

- A **local NRAPM** would be issued if we forecast that the combination of demand and inflexible generation within a constraint group will exceed the constraint limit on that portion of the network.
- A **national NRAPM** would be issued if we forecast insufficient flexibility to ensure that generation can match demand across the system.

# Interconnected markets overview

**We will continue to work closely with our neighbours in Europe, adopting a coordinated approach, providing reciprocal support, and ensuring that interconnectors remain mutually beneficial.**

Electricity flows across interconnectors are primarily driven by price differentials between neighbouring markets. Baseload electricity prices in Great Britain for summer 2025 are £15–£40/MWh higher than in continental Europe. An explanation of the fundamental factors driving this premium are detailed on pages 15–16. We expect to see strong net imports into Great Britain. Figure 8 shows how this premium has been reflected in interconnector capacity auction results, with import prices clearing significantly higher than export prices and above summer 2024 levels. While actual interconnector flows will be determined by prevailing conditions on the day, the capacity auction results indicate the premium that market participants are willing to pay for the right to flow power to Great Britain, on average, across the season.

Our operational surplus analysis suggests there will be spare capacity on the system this summer. We are therefore well equipped for potential uncertainty over interconnector imports and exports. We will maintain a close and coordinated approach with our neighbouring TSOs to offer reciprocal support where required. Current prices suggest a typical pattern of exports from Great Britain to Ireland and Northern Ireland.

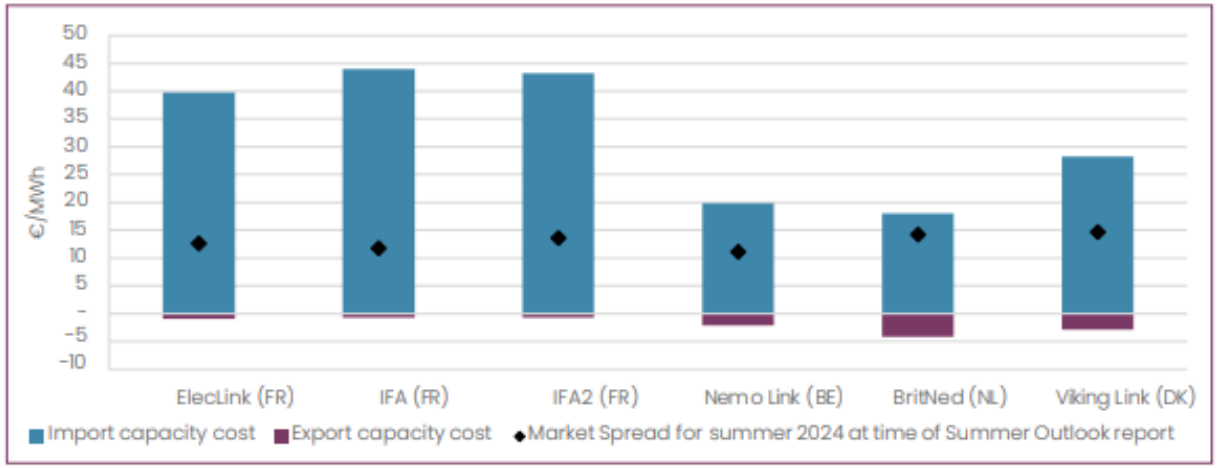


Figure 8: Summer 2025 interconnection capacity auction prices for interconnectors that hold long-term auctions (source: JAO)

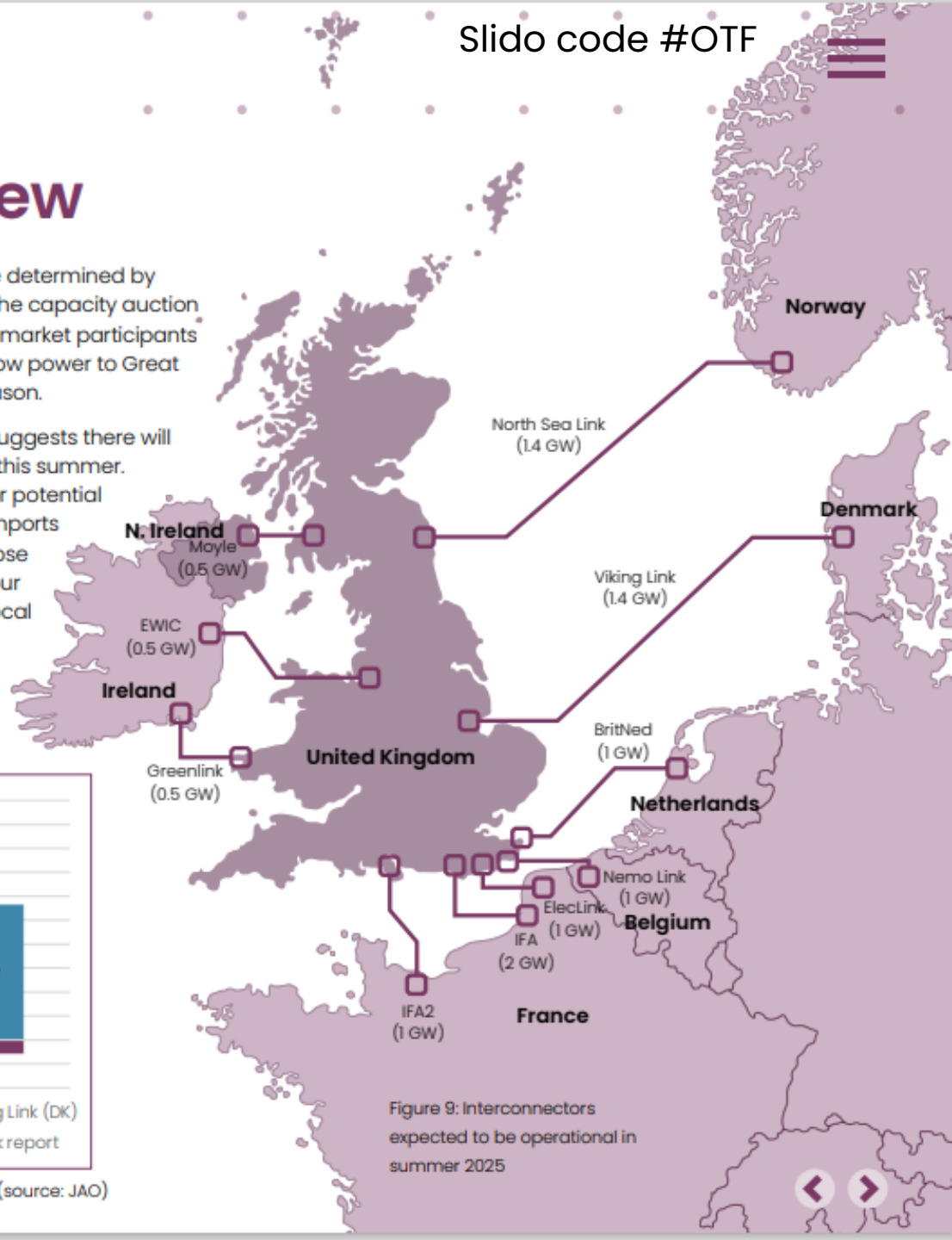


Figure 9: Interconnectors expected to be operational in summer 2025

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# Monthly Balancing Cost Update

## March 2025

Balancing Costs Team

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# Monthly Cost Summary

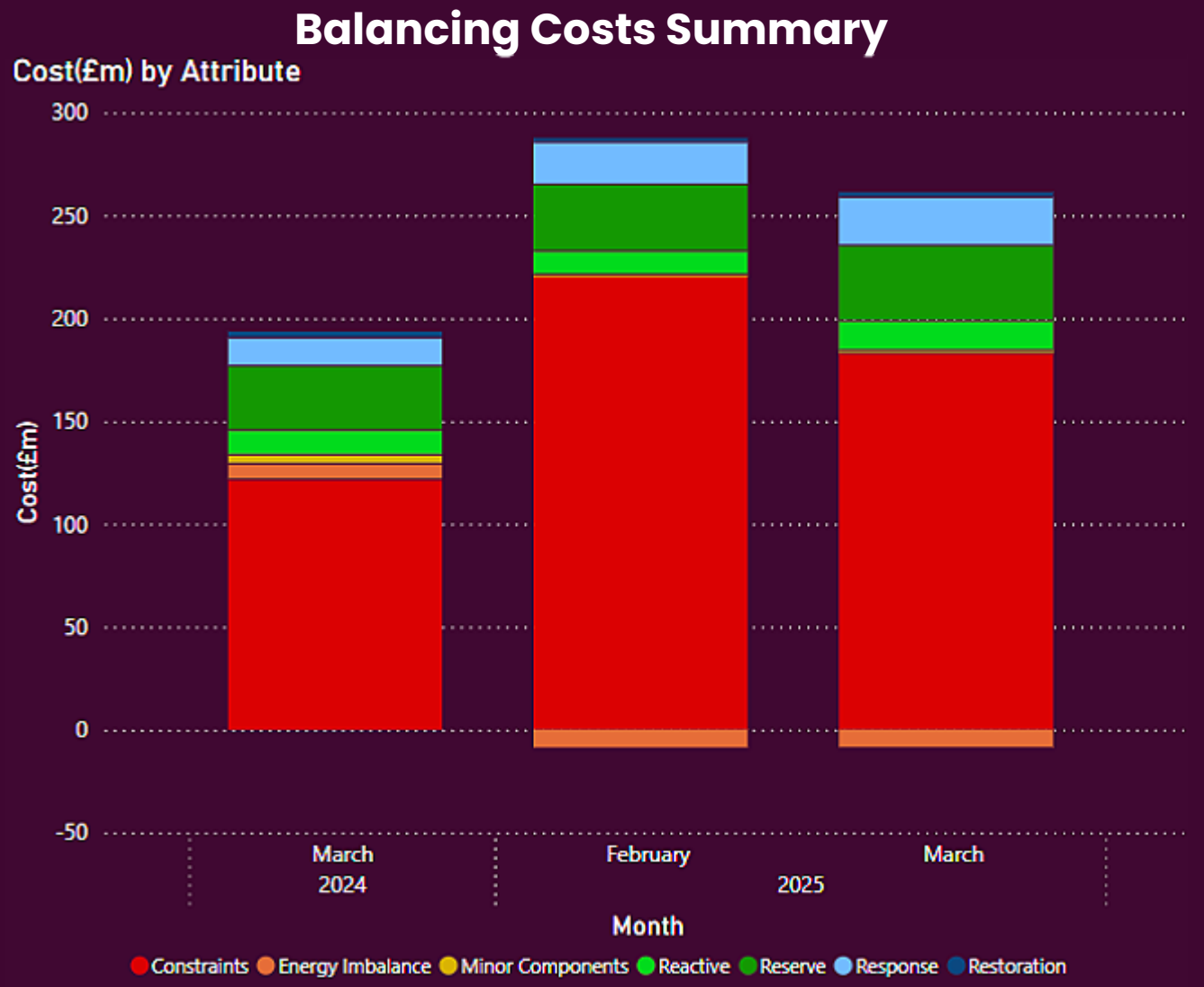
**Balancing Costs in March 2025 were £253m.**

This a decrease of £26m from February 2025 and an increase of £59m from March 2024

March saw predominantly settled weather for much of the month, which contributed to a reduction in costs compared to February.

Thermal constraints in Scotland continued to dominate costs in March. This is due to high curtailment volumes required to manage transfer limits in Scotland (B4, B5, B6) and Cheviot (B7). These costs, as has been common in recent months, have been exacerbated by multi-stage reinforcement works in the Scottish boundaries (taken as planned outages).

Restrictions on the Western Link also contributed to higher costs for constraints.



# System Conditions

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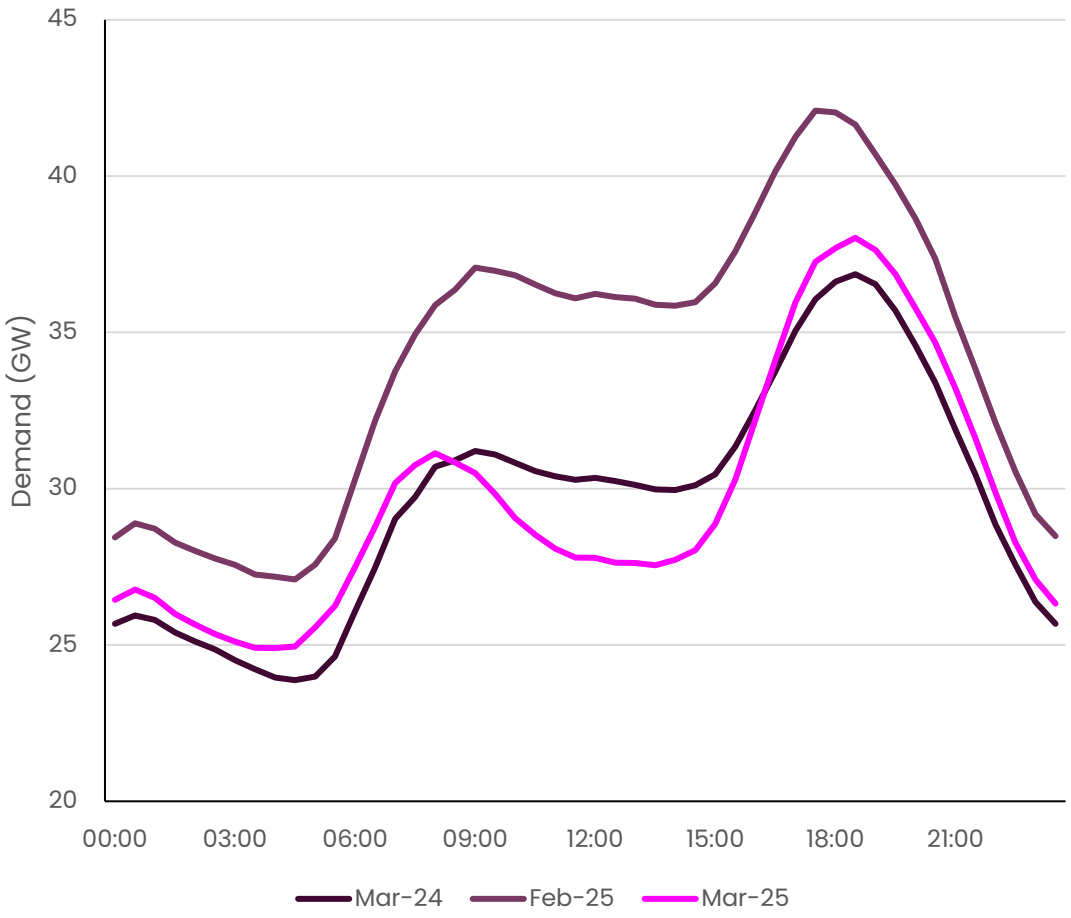
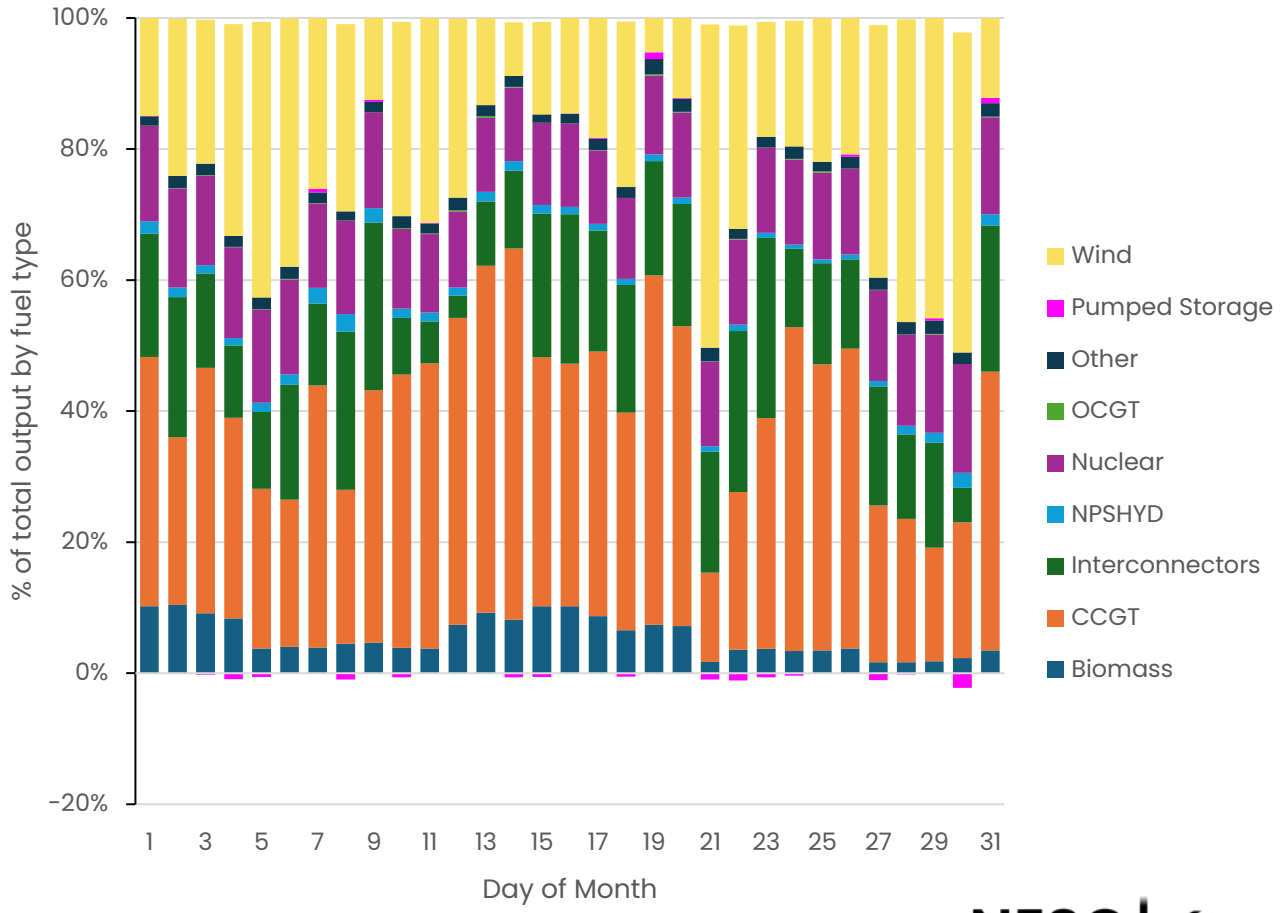
## Average Transmission System Demand (GW) - March 25




## Daily Generation by Fuel Type

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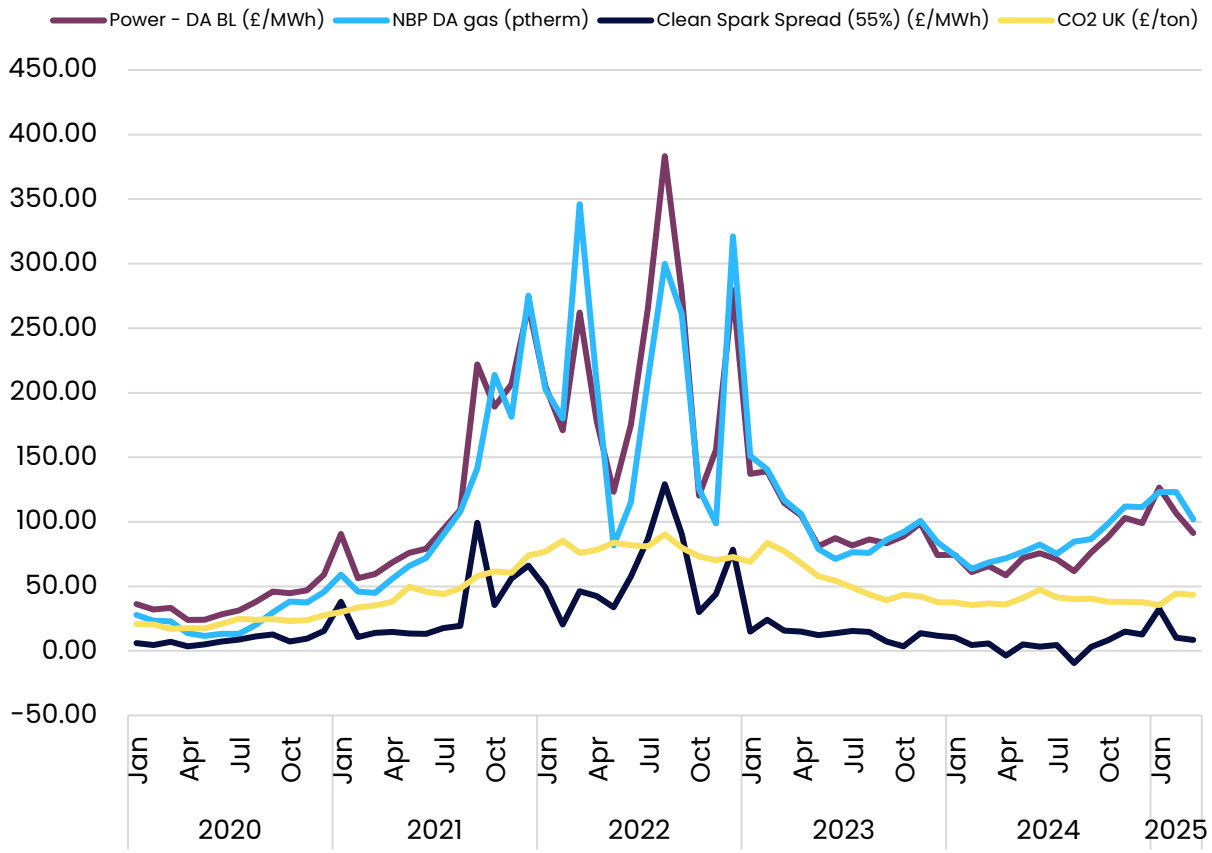
# Market Conditions

| | DA Power Price | VWA offer price | VWA bid price |
|---|---|---|---|
| Month-on-month change | -£15/MWh | -£11/MWh | +£2/MWh |
| Year-on-year change | +£26/MWh | +£24/MWh | +£7/MWh |

## Day Ahead market trends (2020 - 2025)




## Monthly VWA bid and offer prices


VWA: Volume Weighted Average

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# Daily Costs and Volumes

Daily average cost:
**£8.4m**

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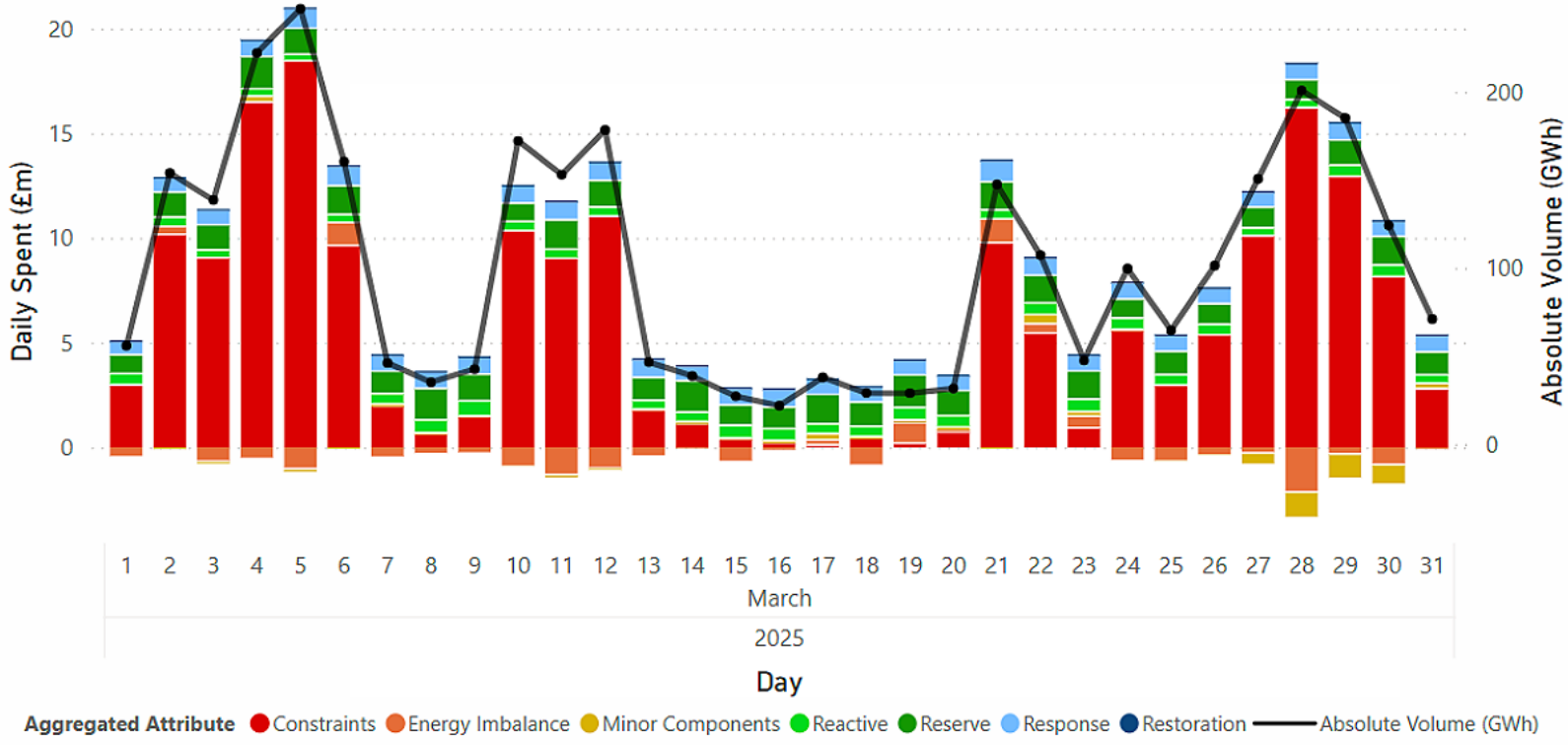
The high cost day was 5th March with a total spend of £19.9m. This day saw the highest volume of wind curtailment during the month. This was brought about by windy conditions in Scotland.

The daily average cost was £8.4m, down £1.4m on the previous month.

## Key trends from previous month:

| | Constraint | Non-constraint |
|---|---|---|
| **Cost** | ↓ 16% | ↑ 17% |
| **Volume** | ↓ 8% | ↑ 17% |

**Daily cost and volume by action type**

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Monthly wind curtailment %:

**16%**

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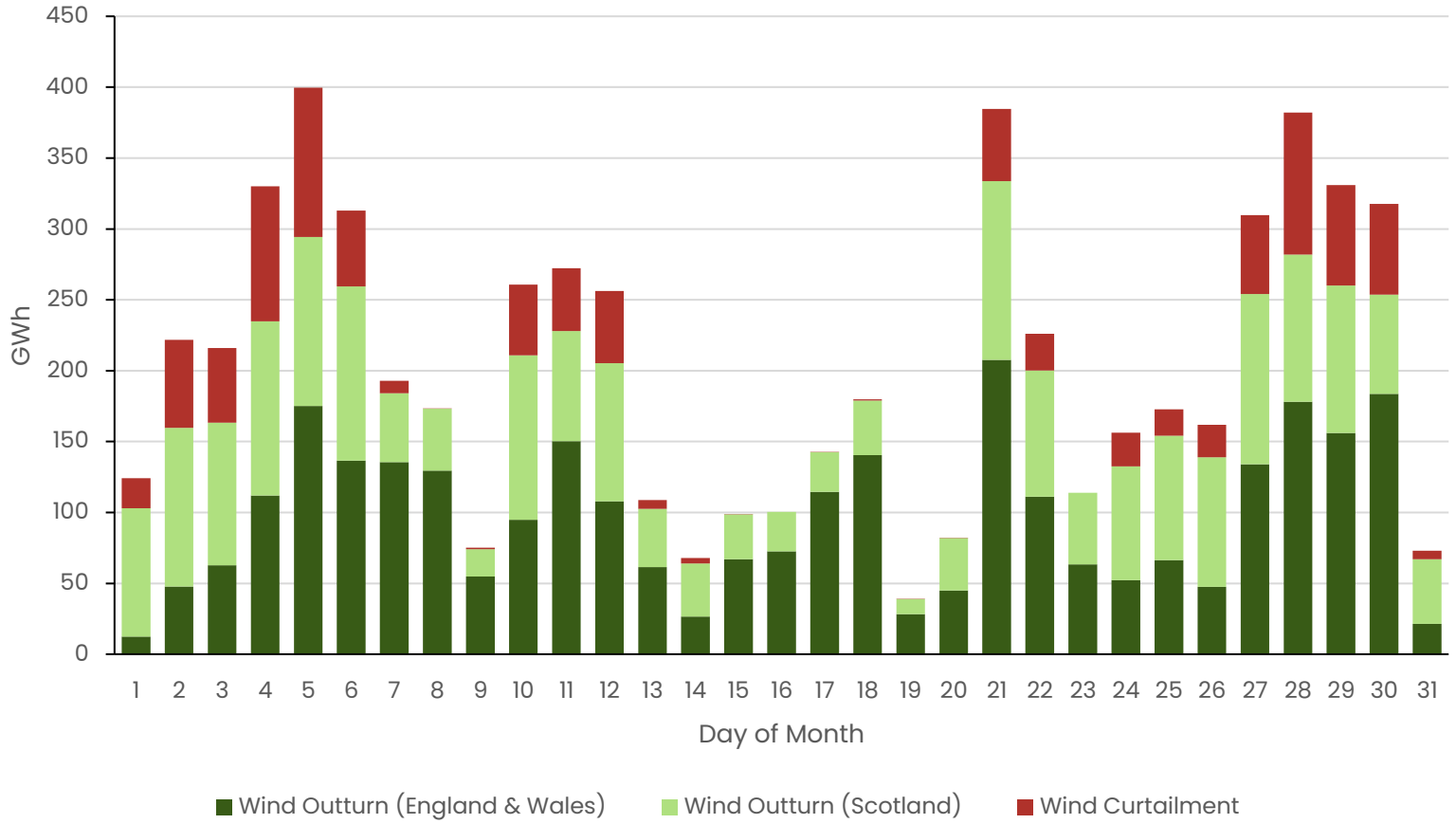
# Wind Outturn

Overall wind outturn in March decreased compared to the previous month, from 6.4 TWh in February to 5.3 TWh in March.

The highest wind curtailment for the month was seen on 5 March at 105 GWh, representing 26% of the hypothetical outturn. This reflects active constraints at the Scottish boundaries.

| | Total | England & Wales | Scotland |
|---|---|---|---|
| **Wind Outturn (TWh)** | **5.3** | **3.0** | **2.3** |

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# 30 March Case Study

On 30 March demand minimum outturned at 14.5GW in the afternoon compared to the overnight minimum demand of 17.8GW. Solar generation outturned at 11.8GW.

System operations on this day were characterised by challenging weather conditions including low temperatures, very high solar generation and variable wind output.

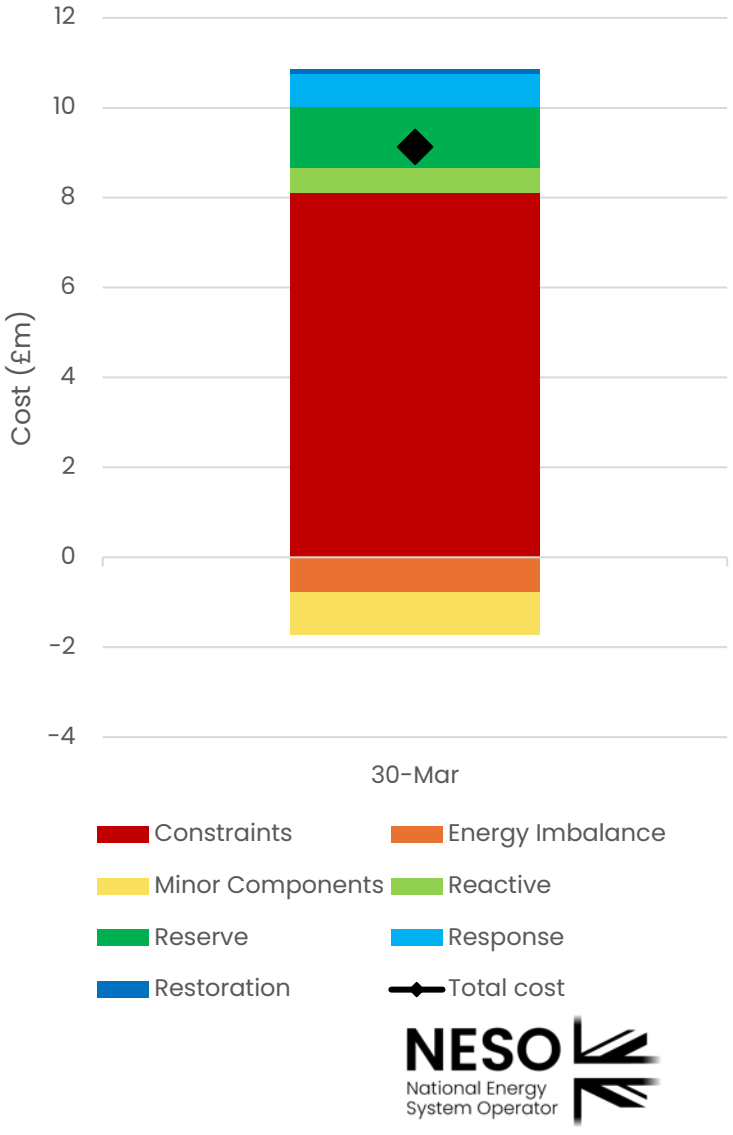
Downwards margin across the midday demand trough was managed via trades.

Min Transmission System Demand
18.1GW

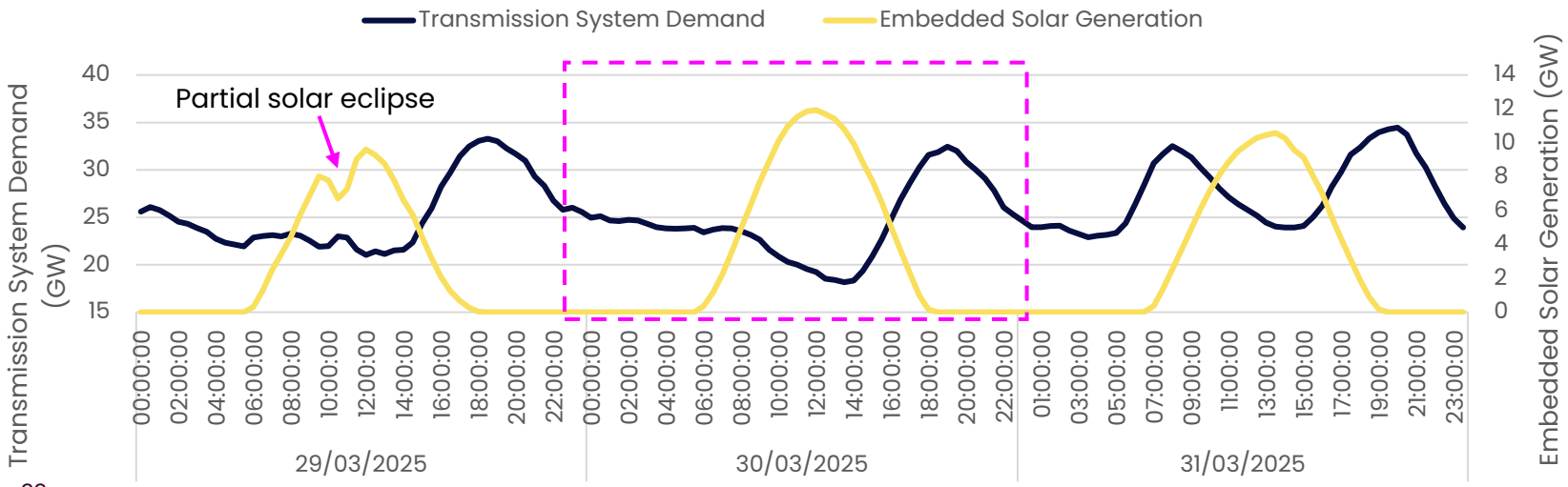
Min National Demand
14.5GW

Total balancing costs
£9.1m

## Balancing Costs - 30 March




## Transmission System Demand and Embedded Solar Generation

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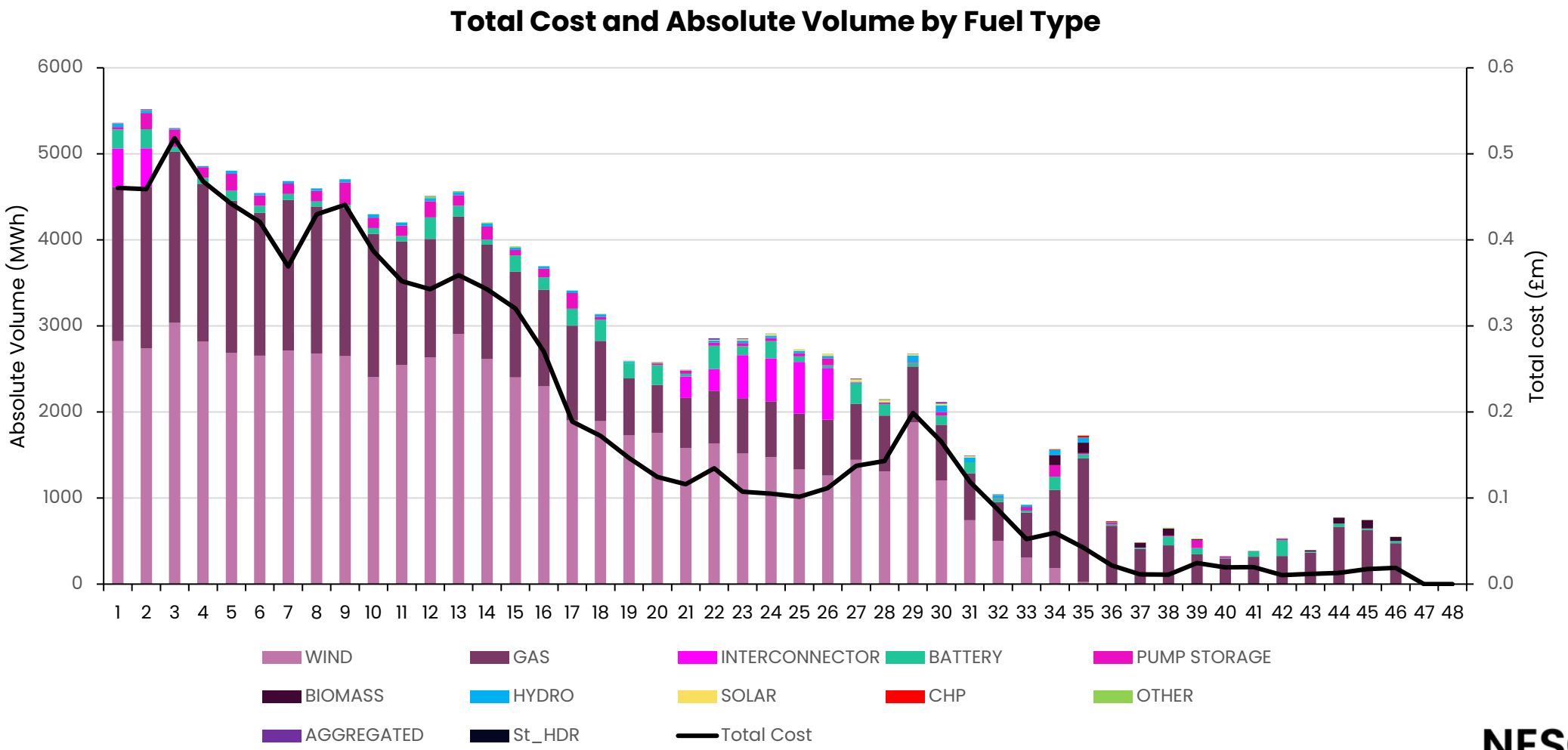
# 30 March Case Study

Slido code #OTF



# Demand | Last week demand out-turn

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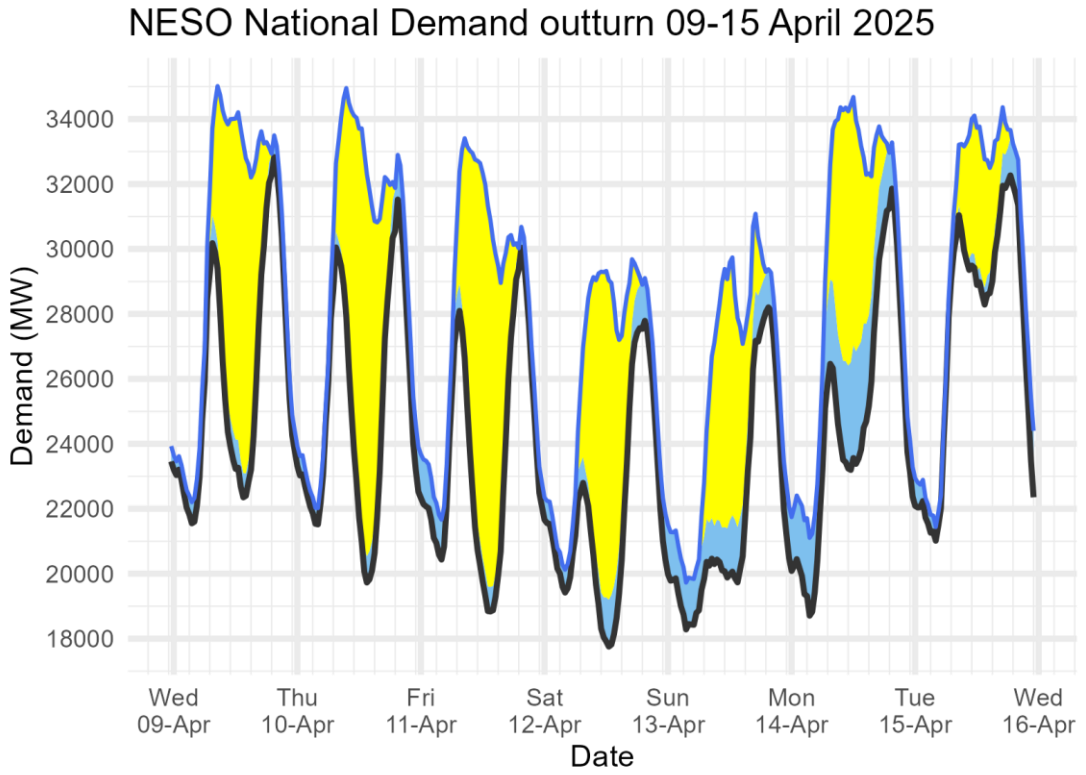


**Distributed generation**

Peak values by day

| Date | OUTTURN | |
|---|---|---|
| | Daily Max Dist. PV (GW) | Daily Max Dist. Wind (GW) |
| 09 Apr 2025 | 10.2 | 1.0 |
| 10 Apr 2025 | 12.2 | 1.5 |
| 11 Apr 2025 | 11.9 | 1.4 |
| 12 Apr 2025 | 10.1 | 1.5 |
| 13 Apr 2025 | 7.9 | 1.8 |
| 14 Apr 2025 | 7.9 | 3.5 |
| 15 Apr 2025 | 4.4 | 2.0 |

**National Demand**

Minimum Demands

| Date | Forecasting Point | FORECAST (Wed 09 Apr) | | | OUTTURN | | |
|---|---|---|---|---|---|---|---|
| | | National Demand (GW) | Dist. wind (GW) | Dist. PV (GW) | National Demand (GW) | Dist. wind (GW) | Dist. PV (GW) |
| 09 Apr 2025 | Afternoon Min | 21.4 | 0.8 | 9.4 | 22.4 | 0.7 | 10.1 |
| 10 Apr 2025 | Overnight Min | 21.5 | 0.5 | 0.0 | 21.5 | 0.5 | 0.0 |
| 10 Apr 2025 | Afternoon Min | 21.6 | 0.8 | 10.4 | 19.7 | 0.8 | 11.8 |
| 11 Apr 2025 | Overnight Min | 20.1 | 1.5 | 0.0 | 20.4 | 1.2 | 0.0 |
| 11 Apr 2025 | Afternoon Min | 18.5 | 0.8 | 10.4 | 18.8 | 0.8 | 11.3 |
| 12 Apr 2025 | Overnight Min | 19.2 | 0.6 | 0.0 | 19.4 | 0.7 | 0.0 |
| 12 Apr 2025 | Afternoon Min | 16.2 | 1.2 | 9.2 | 17.8 | 1.4 | 9.8 |
| 13 Apr 2025 | Overnight Min | 17.7 | 1.2 | 0.0 | 18.3 | 1.4 | 0.0 |
| 13 Apr 2025 | Afternoon Min | 18.8 | 1.5 | 6.6 | 19.7 | 1.7 | 6.4 |
| 14 Apr 2025 | Overnight Min | 18.9 | 1.3 | 0.0 | 18.7 | 2.4 | 0.0 |
| 14 Apr 2025 | Afternoon Min | 23.4 | 2.0 | 7.6 | 23.4 | 3.5 | 7.1 |
| 15 Apr 2025 | Overnight Min | 20.2 | 1.2 | 0.0 | 21.0 | 0.4 | 0.0 |
| 15 Apr 2025 | Afternoon Min | 23.9 | 1.5 | 7.6 | 28.3 | 0.5 | 3.9 |

**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 NESO has no real time data.**

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

# Demand | Week Ahead

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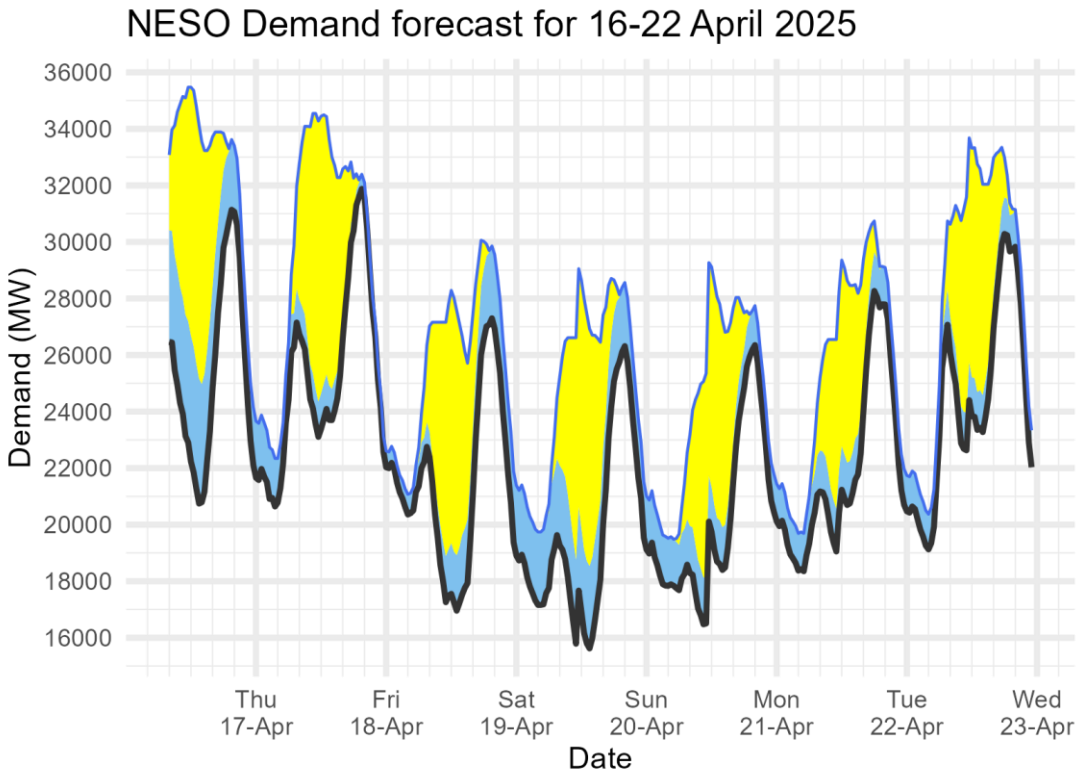


Demand type

National Demand (ND) transmission connected generation requirement within GB

ND + est. of PV & wind at Distribution network

Renewable type

Distributed_PV

Distributed_Wind

**National Demand**

Minimum Demands

| | | FORECAST (Wed 16 Apr) | | |
|---|---|---|---|---|
| Date | Forecasting Point | National Demand (GW) | Dist. wind (GW) | Dist. PV (GW) |
| 16 Apr 2025 | Afternoon Min | 20.7 | 4.4 | 9.0 |
| 17 Apr 2025 | Overnight Min | 20.6 | 1.7 | 0.0 |
| 17 Apr 2025 | Afternoon Min | 23.7 | 1.1 | 8.2 |
| 18 Apr 2025 | Overnight Min | 20.4 | 0.7 | 0.0 |
| 18 Apr 2025 | Afternoon Min | 17.0 | 2.0 | 8.7 |
| 19 Apr 2025 | Overnight Min | 17.2 | 2.6 | 0.0 |
| 19 Apr 2025 | Afternoon Min | 15.6 | 2.9 | 8.4 |
| 20 Apr 2025 | Overnight Min | 17.7 | 1.6 | 0.4 |
| 20 Apr 2025 | Afternoon Min | 18.4 | 1.5 | 7.3 |
| 21 Apr 2025 | Overnight Min | 18.4 | 1.3 | 0.0 |
| 21 Apr 2025 | Afternoon Min | 20.7 | 1.5 | 6.4 |
| 22 Apr 2025 | Overnight Min | 19.1 | 1.2 | 0.0 |
| 22 Apr 2025 | Afternoon Min | 23.3 | 1.3 | 7.5 |

**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 NESO has no real time data.**

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

# Operational Margins | Week Ahead

Slido code #OTF

## 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 NESO as of the day these slides are being published 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 NESO needing to use its operational tools.

For higher surplus values, margins are expected to be adequate and there is a low likelihood of the NESO 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 NESO needing to use its tools, such as interconnector trading and 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.

| Day | Date | Notified Generation (MW) | Wind (MW) | IC Flows* (MW) | Peak demand (MW) | Indicative surplus (MW) |
|---|---|---|---|---|---|---|
| Thu | 17/04/2025 | 39317 | 2260 | 5240 | 32050 | 10810 |
| Fri | 18/04/2025 | 39186 | 8810 | 5240 | 28600 | 19950 |
| Sat | 19/04/2025 | 38968 | 9670 | 4740 | 26870 | 21510 |
| Sun | 20/04/2025 | 39897 | 6340 | 4740 | 26300 | 20540 |
| Mon | 21/04/2025 | 39892 | 6860 | 4740 | 27520 | 19950 |
| Tue | 22/04/2025 | 38780 | 5950 | 4740 | 29940 | 15550 |
| Wed | 23/04/2025 | 38835 | 8010 | 4740 | 30520 | 16720 |

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

Margins do not include NESO enhanced or emergency actions

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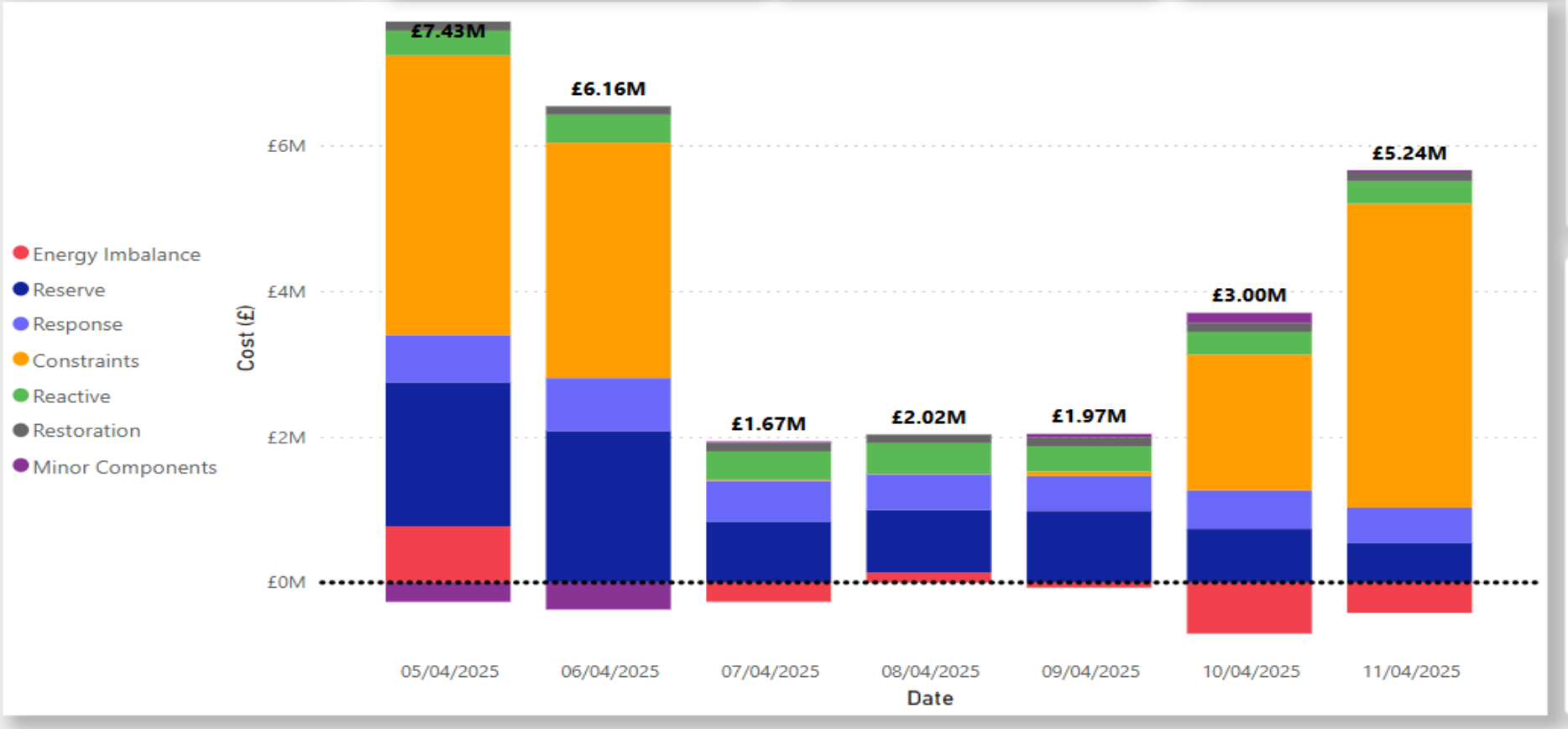
# NESO Actions | Category Cost Breakdown

Slido code #OTF

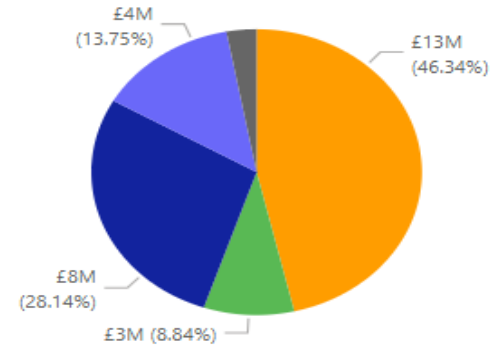
**Date**
05/04/2025 11/04/2025

| Weekly Total Costs (£) | Last Week Total Costs (£) | Past 30-Day Average Costs (£) |
|---|---|---|
| £27.5M | £58.1M | £6.2M |




| Date | Total Outturn Cost |
|---|---|
| 05/04/2025 | £7,431,120 |
| 06/04/2025 | £6,164,701 |
| 07/04/2025 | £1,669,070 |
| 08/04/2025 | £2,024,215 |
| 09/04/2025 | £1,967,005 |
| 10/04/2025 | £2,997,433 |
| 11/04/2025 | £5,237,205 |
| Total | £27,490,749 |

**Weekly Cost (£) and Share (%)**




January 2025 MBSS report update: please note this has now been published

# NESO Actions | Constraint Cost Breakdown

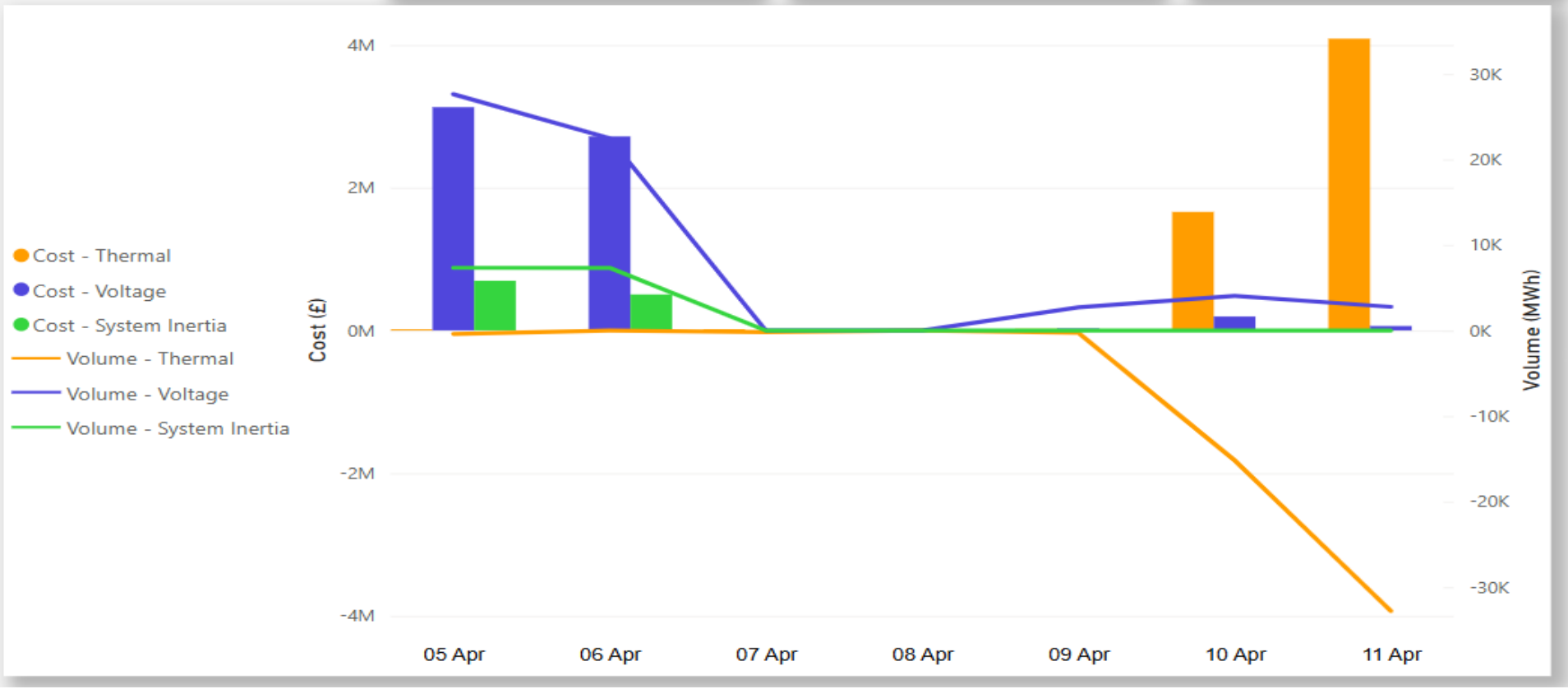
Slido code #OTF

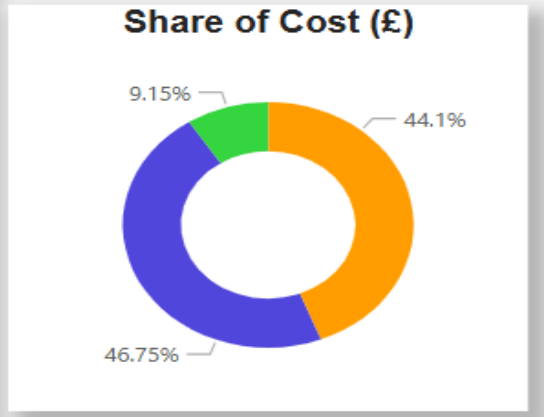
**Date**
05/04/2025 11/04/2025

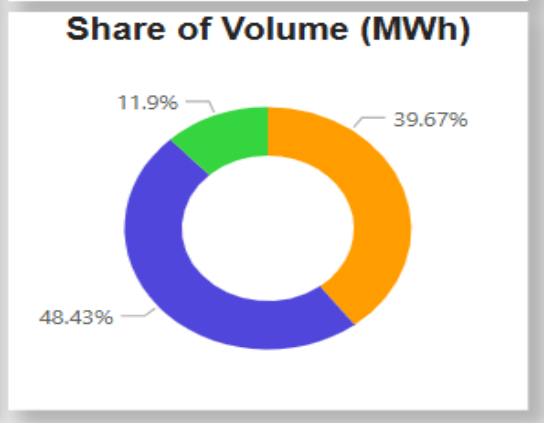
| Thermal Constraints | |
|---|---|
| Costs (£) | Vol (MWh) |
| 5.79M | 48.82K |

| Voltage Constraints | |
|---|---|
| Costs (£) | Vol (MWh) |
| 6.14M | 59.61K |

| System Inertia | |
|---|---|
| Costs (£) | Vol (MWh) |
| 1.20M | 14.65K |

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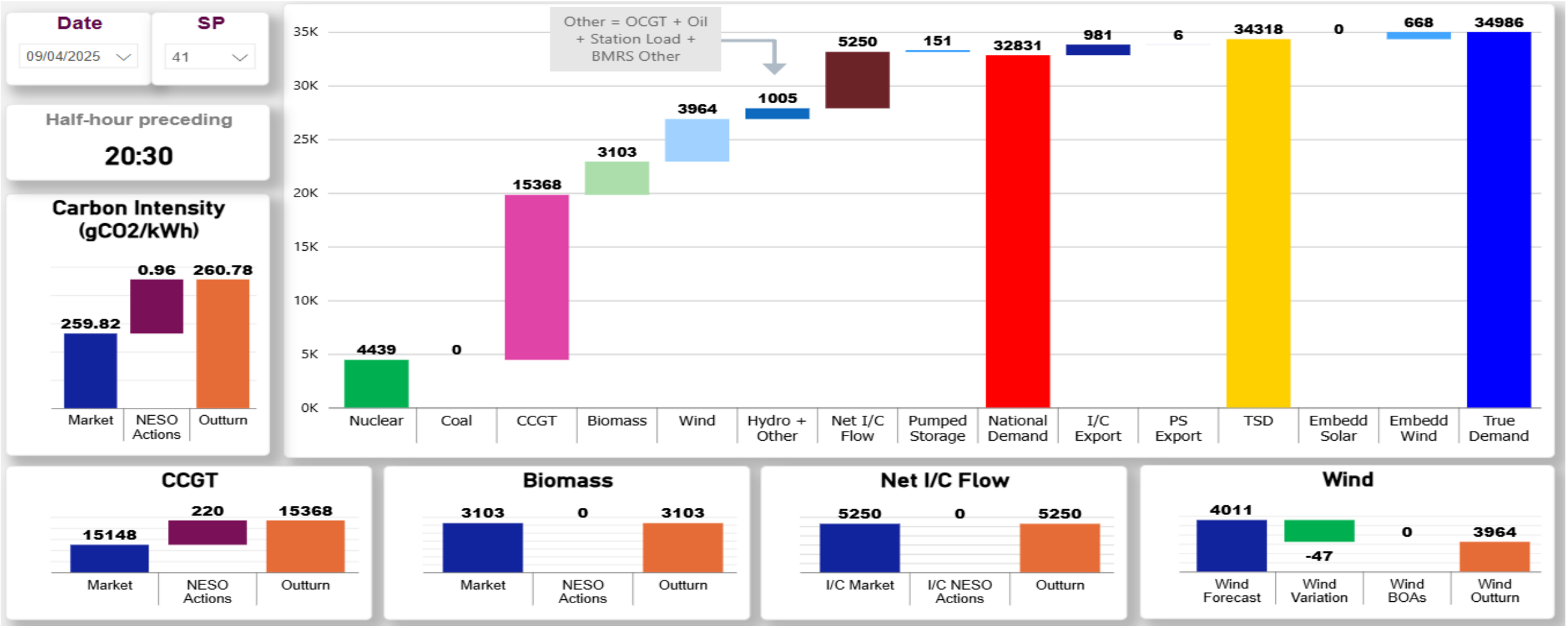
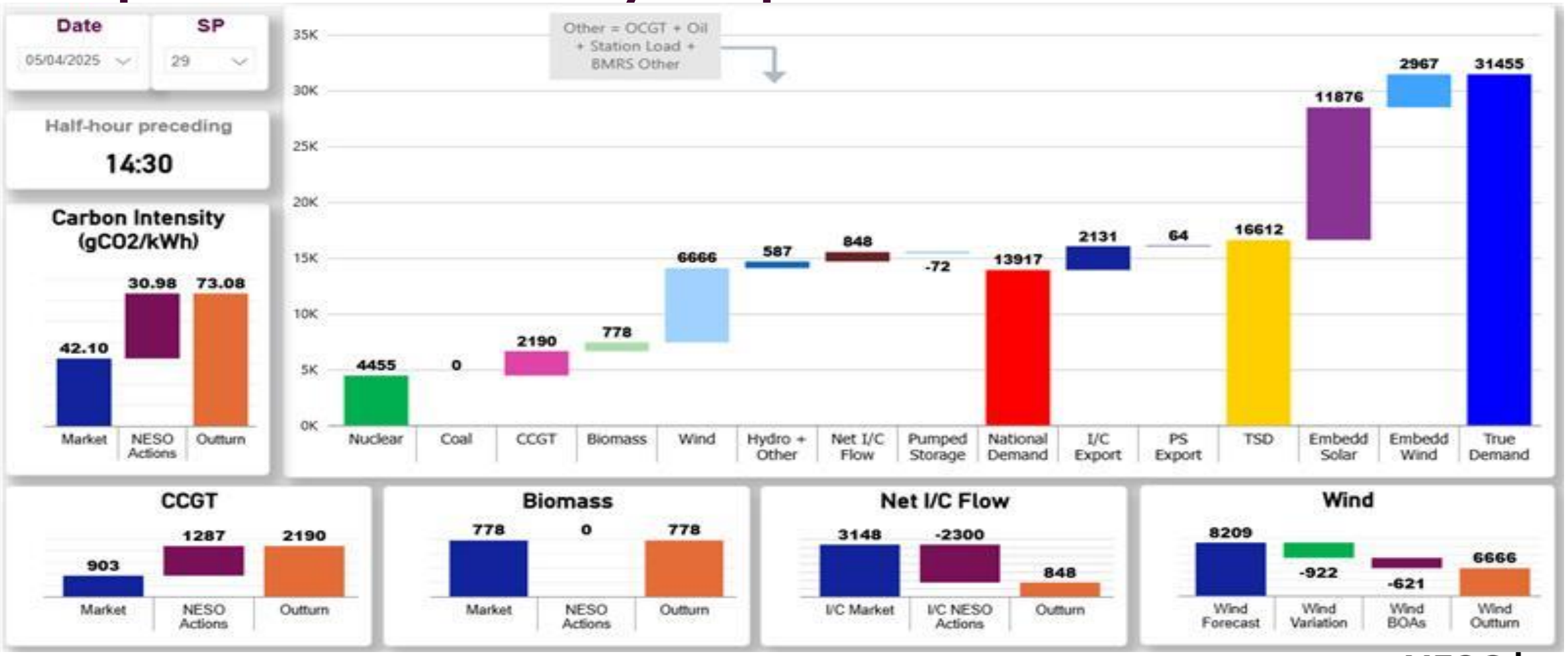
# NESO Actions | Peak Demand – SP spend ~ £12k
# Wednesday 9th April

Slido code #OTF

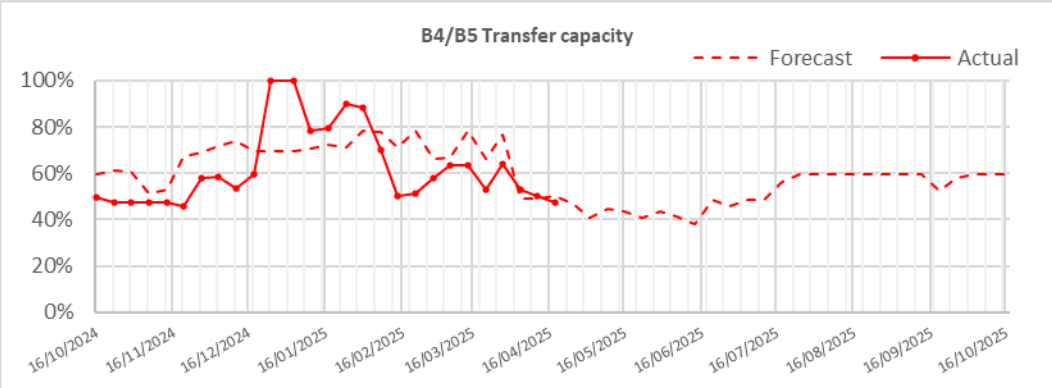


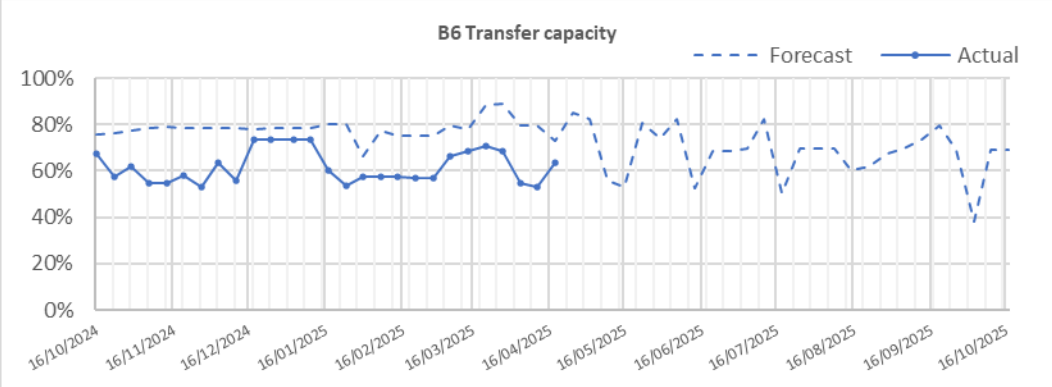
Slido code #OTF

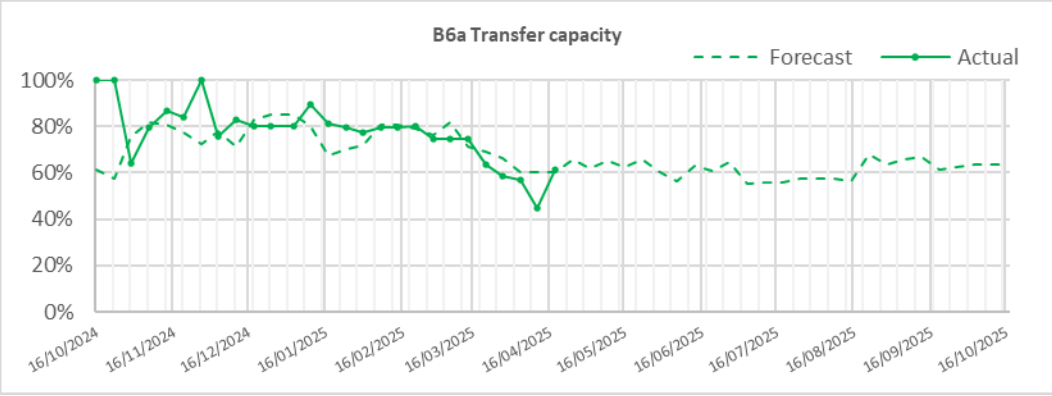
# NESO Actions | Minimum Demand & Highest SP– SP spend ~ £254k Saturday 5th April



# Transparency | Network Congestion

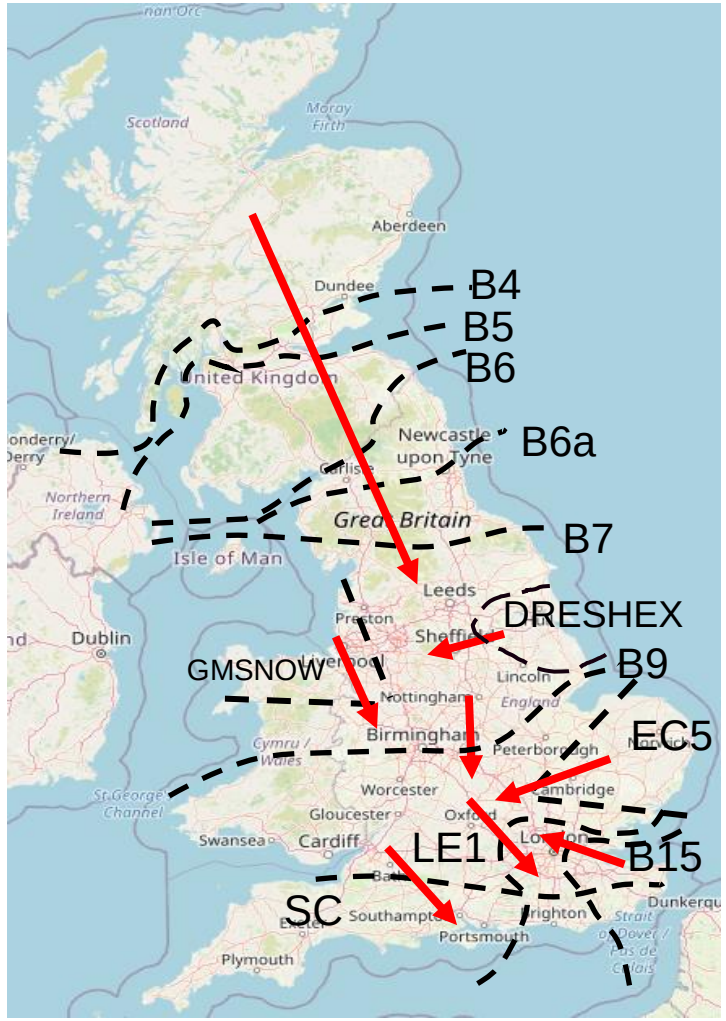



| Boundary | Max. Capacity (MW) | Current Capacity (%) |
|---|---|---|
| B4/B5 | 3400 | 47% |
| B6 (SCOTEX) | 6800 | 63% |
| B6a | 8000 | 61% |
| B7 (SSHARN) | 9850 | 74% |
| GMSNOW | 5800 | 49% |
| FLOWSTH (B9) | 12700 | 80% |
| DRESHEX | 9675 | 84% |
| EC5 | 5000 | 52% |
| LE1 (SEIMP) | 8750 | 56% |
| B15 (ESTEX) | 7500 | 88% |
| SC1 | 7300 | 56% |

Slido code #OTF



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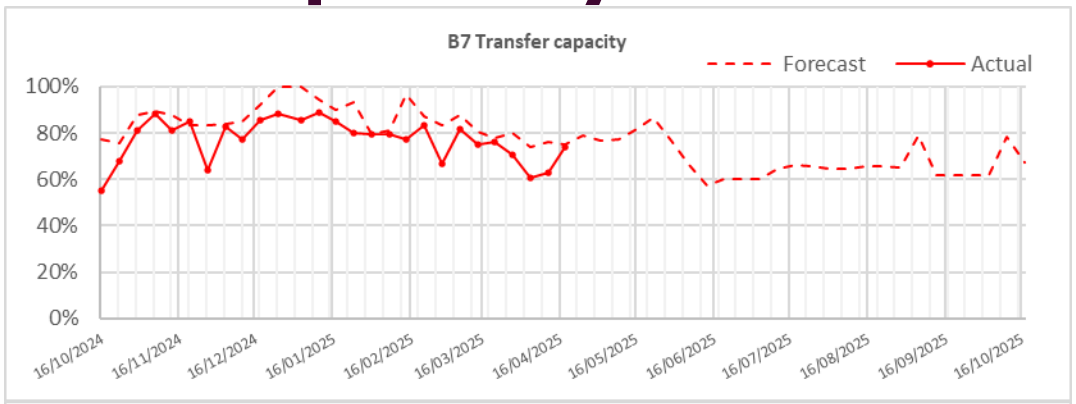


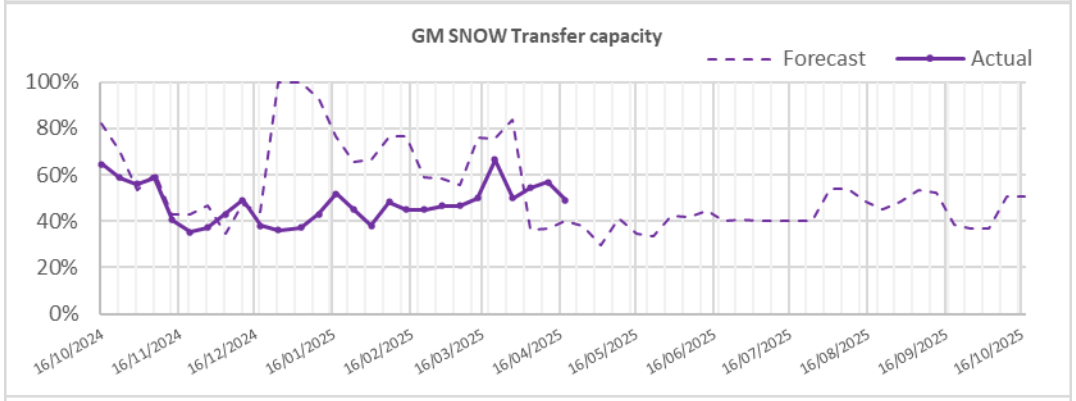


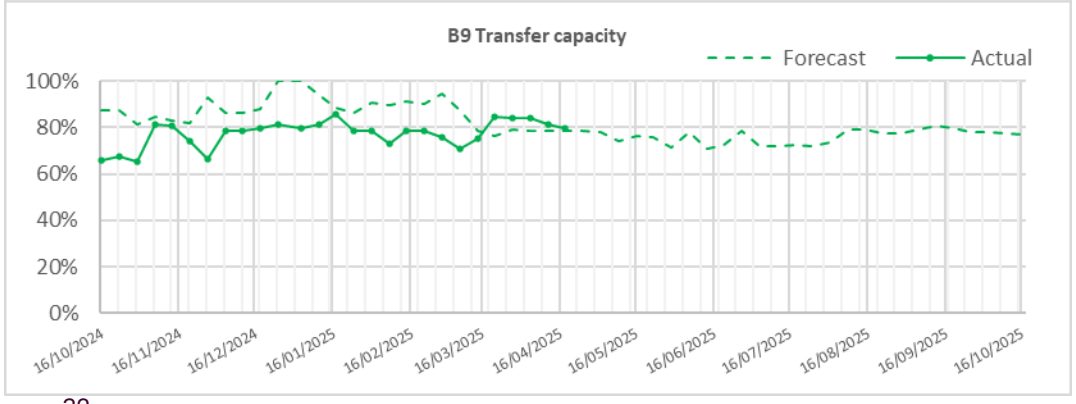


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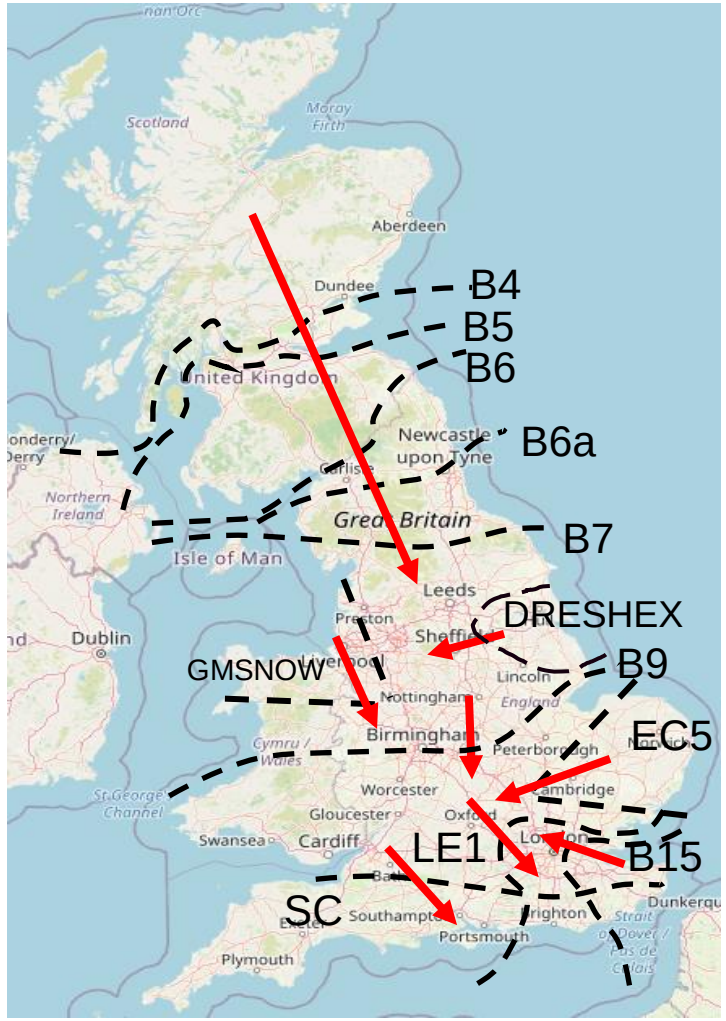


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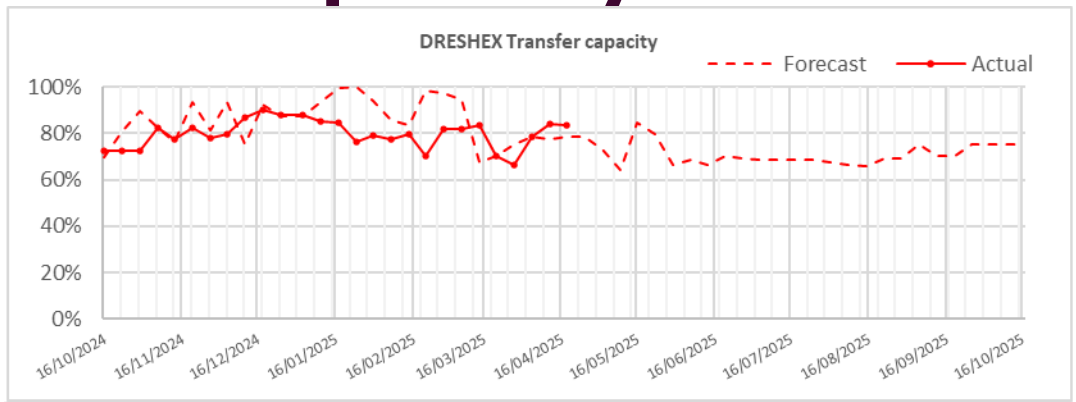
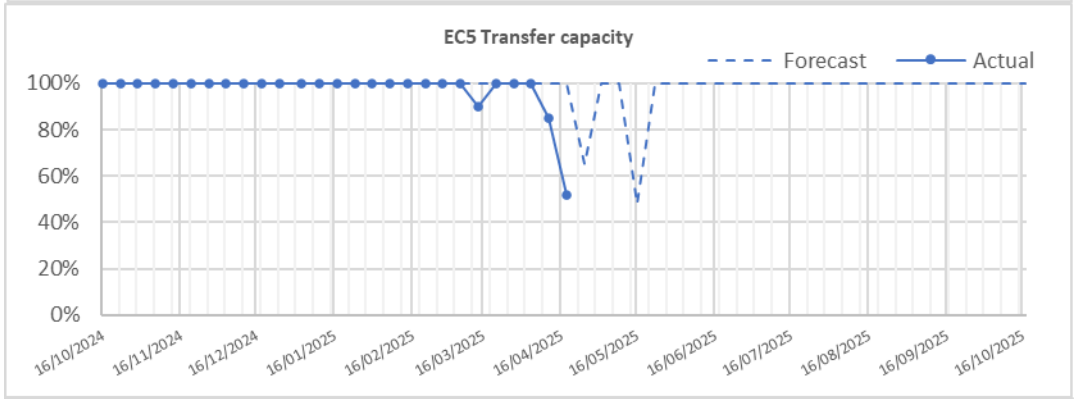
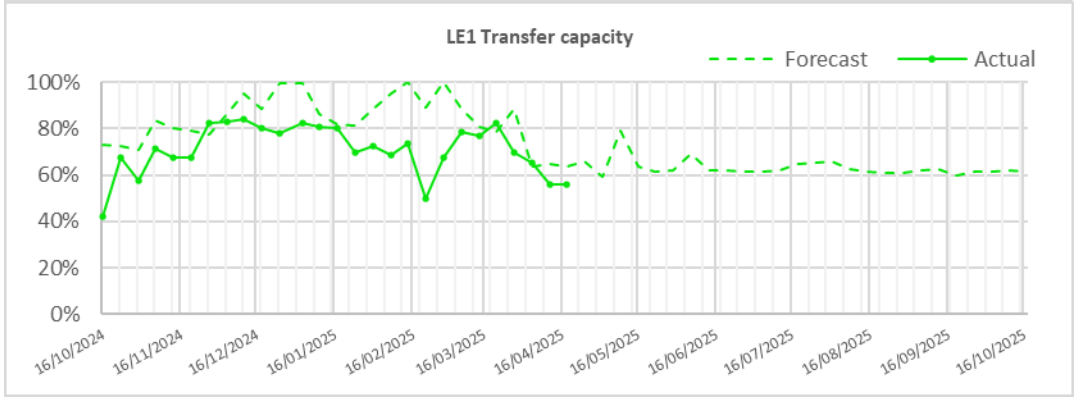
# Transparency | Network Congestion

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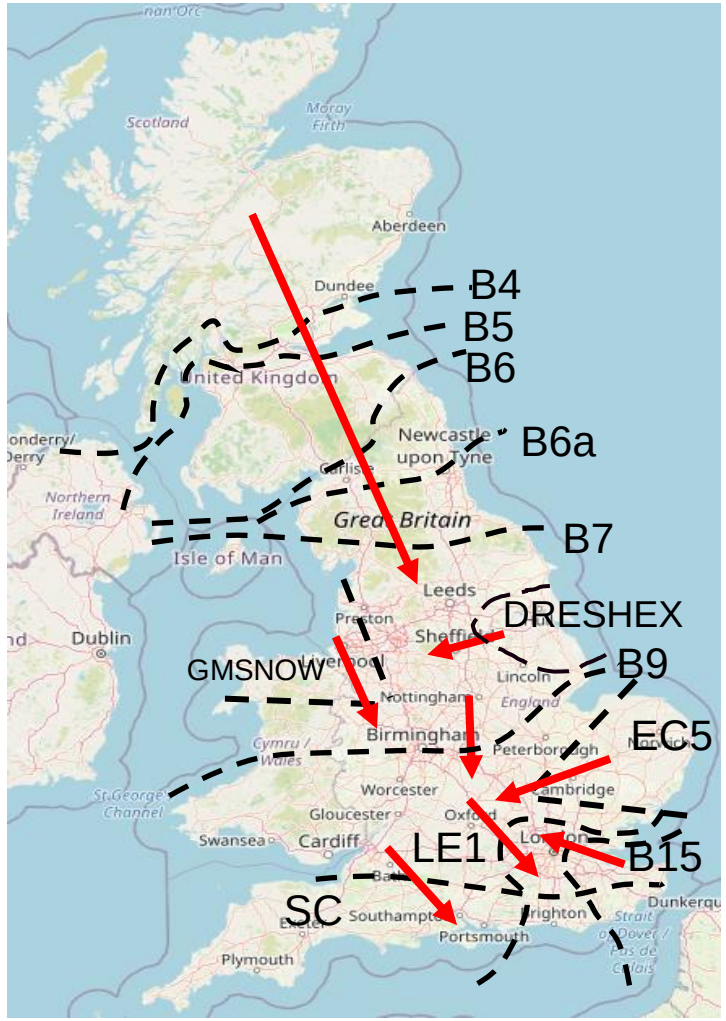

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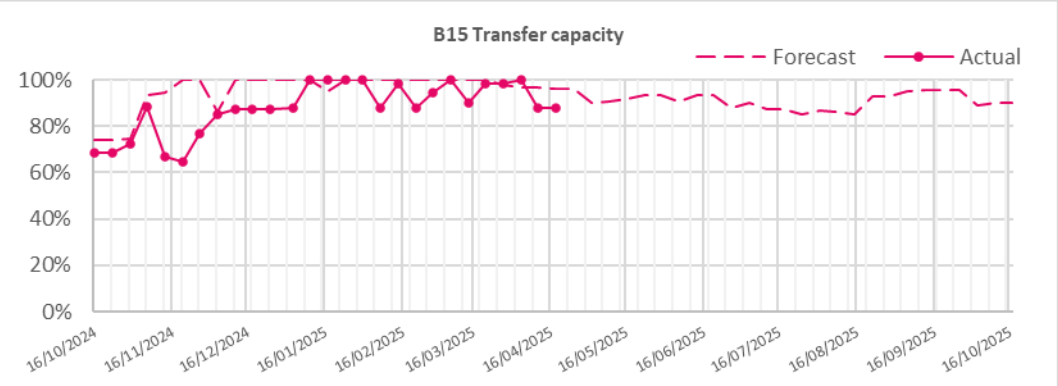


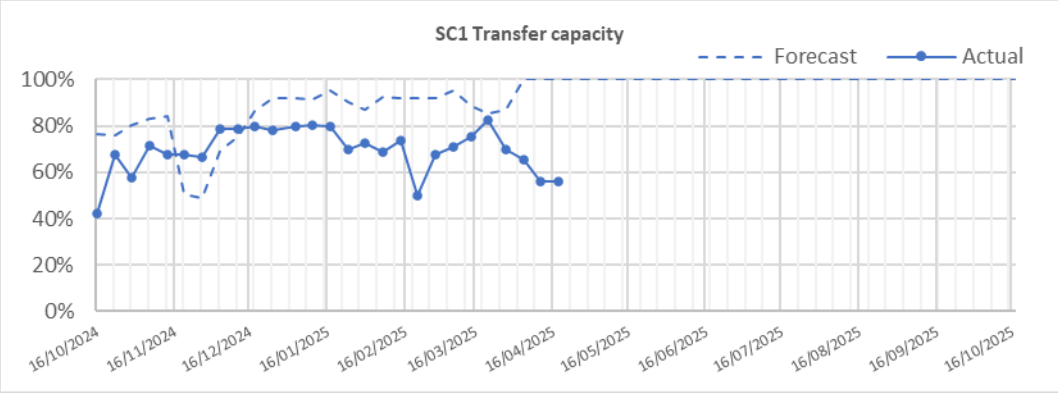


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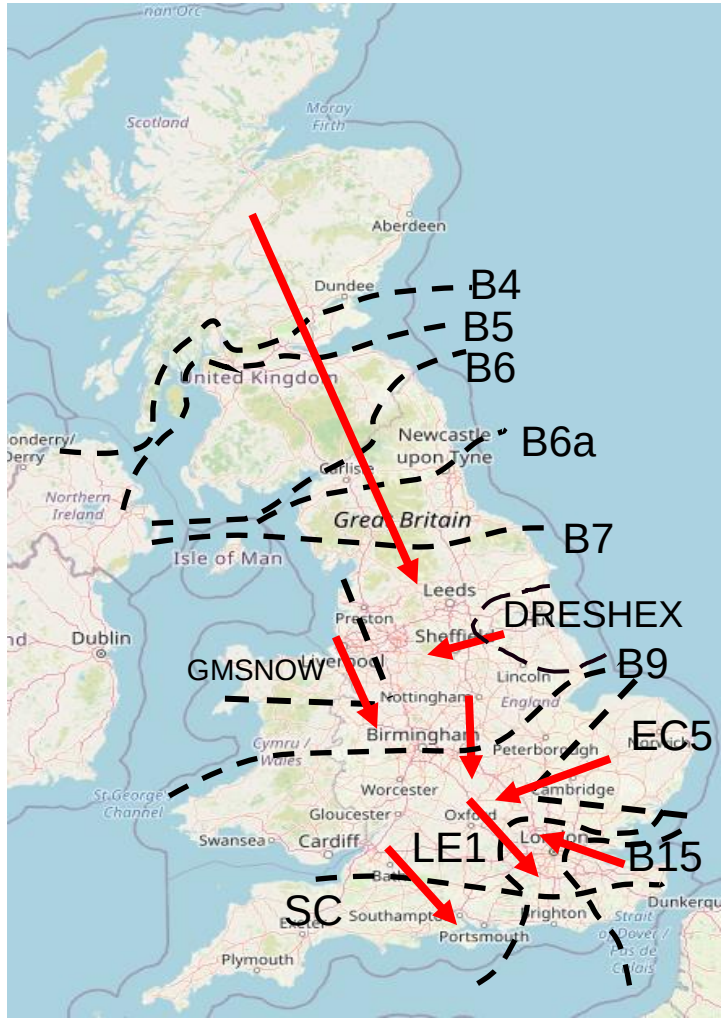


Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal: Constraints Management

(The forecast and day ahead limits may vary due to changes in the outage plan. The plan is reviewed periodically throughout the year to ensure we are optimising system conditions, whilst managing any necessary outage plan changes)



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# Skip Rates

**Interconnectors:** There has been significant interest in the inclusion of interconnectors. Whilst there is no immediate plan to include them in the skip rate methodology, we are planning a wider dispatch process review which will include interconnectors.

Slido code #OTF

We are now sharing the summary skip rate data on a rolling 4-week basis. We welcome your comments on if you find this valuable and feedback on how we present this data.

| Weekly Average w/e | Offers - All BM | Offers - PSA | Bids - All BM | Bids - PSA |
|---|---|---|---|---|
| 23/03 | 15% | 35% | 20% | 51% |
| 30/03 | 14% | 29% | 5% | 48% |
| 06/04 | 8% | 43% | 21% | 45% |
| 13/04 | 13% | 41% | 27% | 41% |

| Monthly Average | Offers - All BM | Offers - PSA | Bids - All BM | Bids - PSA |
|---|---|---|---|---|
| January | 18% | 34% | 11% | 53% |
| February | 15% | 33% | 5% | 49% |
| March | 15% | 29% | 7% | 47% |
| April (MTD) | 9% | 41% | 24% | 43% |



**7th/8th April:** Very few systems actions (bids or offers) so PSA & All BM almost equal for both bids and offers

**Note: due to size issues, both 'In Merit' datasets now have a separate file for each month.** Based on feedback we intend to maintain this method of publishing the data. We endeavour to publish by 5pm each day.

box.SkipRates@nationalenergyso.com

Skip rate data and more info on skip rates and battery storage including methodology.

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PSA: Post System Action

# Previously Asked Questions

Slido code #OTF

**Q:** (09/04/25) Given increasing voltage control challenges during periods of high solar generation, low transmission demand have NESO considered routes to access the underutilised reactive power capability from distributed connected generation, rather than new dedicated assets via the LT2029 tender?

**A:** We are working with distribution network owners and operators to explore new ways to efficiently manage voltage on both distribution and transmission networks. This could involve the use of distribution connected assets where appropriate and beneficial.

We have previously explored the use of distribution connected assets in our Mersey Pathfinder. We found that the majority of embedded assets were ineffective at meeting transmission voltage needs and were therefore more costly.

We also have an innovation project which is investigating the decline in reactive power demand and will develop a new forecasting methodology. This will improve our understanding of the reactive power transfer between electricity networks and our ability to forecast and plan future voltage management.

**Q:** (09/04/25) Why are the forecast boundary flow forecasts  materially different to actual flows?

**A:** Forecast boundary flows are initially calculated during the year-ahead (YA) timescale and are updated again in the medium-term (MT). However, during the delivery timescales, changes in asset outages compared to the YA plan can impact these boundary flows. As a result,  the actual boundary flows could be higher or lower than the forecasts, and you might sometimes notice that the actual flows are higher than the YA limits.

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# Previously Asked Questions

Slido code #OTF

**Q:** (09/04/25) If NESO is actively monitoring all generators as Georgia just said, why historically have we seen IC FPN discrepancies vs actual flow for a extended number of settlement periods (Irish IC - noming system issues)?

**A:** Market monitoring are aware of a number of historic incidents where interconnector FPNs have not aligned with their outputs. Often this is explained through NTC, ITL or fault conditions that are appropriately identified across other data sources but not as transparent to the market as a result of the FPN submissions being distributed across the nominating interconnector parties rather than MEL capping the expectation of output.

We will continue to identify any FPN discrepancies across all units and discuss with the responsible parties where appropriate or consider alternative approaches if required.

Specifically on interconnector transparency NESO are working to understand where any further information could be published.

For more information about Interconnectors see the Interconnector Special refresh at the OTF on 5 March 2025
IC – Interconnector
FPN – Final Physical Notification
NTC – Net Transfer Capacity
ITL – Intraday Trading Limits
MEL – Maximum Export Limit (from energy supplier into the GB Transmission Network)

# Previously Asked Questions



**Q:** (09/04/25) There is quite a lot of NIV chasing from BESS, sometimes making constraint situation worse. Have you considered applying Information Imbalance Charge to controllable/dispatchable assets?

**A:** Net Imbalance Volume Chasing (NIV) is not specifically addressed through the information imbalance charge as it relates to the difference in market sold position compared to delivered volumes whereas information imbalance is the difference between delivered energy and generation data but it would encourage the submission of more accurate data which is critical for operational security.

Changes to the information imbalance charge would require a BSC (Balancing and Settlement Code) modification and therefore is not a unilateral NESO decision to make. NESO presently view data accuracy as a minimum Grid Code compliance issue rather than a commercial factor but may consider this option in the future.

**Q:** (02/04/25) thanks for the updated ("wind only") FPN performance over the last year compared to last - its worth stating "wind " in the title and there is a marked improvement but a more appropriate snap shot would be last 6 or 3 months perhaps when new guidance was provided etc to understand improvements.

**A:** Thankyou for the feedback. We continually review what data we present to outline what changes we see, we publish all data monthly and can consider presenting different resolutions/windows of data moving forwards.

# Previously Asked Questions

Slido code #OTF

**Q:** (09/04/25) Wind generation was quite high last week (over 10GW for large parts of Wednesday to Friday), yet curtailed volume via BM bids seemed very low especially compared to the week before. Could you please help explain why?

**A:** In general, high wind generation in Scotland, along with planned and rescheduled network outages and faults, influences the need for wind curtailment to protect and support the grid. Our objective is to minimise curtailment actions and implement them only when there is a significant risk to the system.

To confirm, the total wind generation from 24 March to 30 March was 1.48 TWh, with Scotland contributing 660 GWh and England and Wales generating 820 GWh. During this period, wind curtailment was approximately 360 GWh. Conversely, from 31 March to 6 April, wind generation totalled 1.37 TWh, with 410 GWh from Scotland and 970 GWh from England and Wales. Wind curtailment during this time was approximately 100 GWh.

The observed difference in wind curtailment between these two periods is attributed to fewer network outages and a reduction of around 38% in wind output in Scotland.

**Q:** (09/04/25) Partial solar eclipse 29th March seemed to pass without any problems following ENTSO-e planning. What was the GB experience? Interconnectors involved? Possible subject for a deep dive? https://www.entsoe.eu/news/2025/03/28/solar-eclipse-event-underscores-importance-of-a-resilient-power-system/

**A:** Thank you for the suggestion, we will consider this for a future deep dive. If this would be of interest, please let us know via the email box box.nc.customer@nationalenergyso.com .

NESO National Energy System Operator

# Previously Asked Questions



**Q:** (19/03/25) Cashout prices are published incorrectly within-day seemingly all the time these days due to not including non-bm stor in the niv calculation until D+1. This never used to be a problem but nowadays it happens daily. Do you know why and if something can be done?

**Q:** (19/03/25) Is the procurement of more services from non-BM providers not just going to increase the issue highlighted by Celyn earlier regards publication of incorrect imbalance prices. Do NESO consider this before contracting more services or just say 'it's an Elexon issue' ?

**A:** We are continuing to work with Elexon and are meeting with them on a fortnightly basis to discuss any ongoing issues/operational queries. We can assure you there is a process for both BM (Balancing Mechanism) and NBM (Non-Balancing Mechanism) services. Elexon have informed us they will be publishing information in the next couple of weeks which should provide clarity on how indicative cashout is calculated both within day and D+1, based on the information and timing of files received from NESO.

**Q:** (19/03/25) Why is ABSVD data taking so long to be published? Does NESO not have an obligation on timing? Further on ABSVD: This can have significant credit cover impacts for parties when data is missed from the II run. What is NESO doing to ensure data is delivered on time in line with ABSVD methodology +BSC? When can we expect to see an improvement.

**A:** Following an initial investigation with Elexon, we have discovered that there was a gap in a process regarding dynamic services where the data was being collated in batches and sent daily, rather than being sent as it was ready - this has since been corrected. We are continuing to work closely with Elexon to put mitigating controls in place.

# Advance Questions

Slido code #OTF

**Q:** (09/04/2025) IOLC only penalizes generators that reduce their FPN during the operational day. This means that generators are free to withhold power on tight days and price excessively in the BM, to capture possible offer acceptances at extreme prices. What's the benefit for NESO? These units will provide turn-on a margin, but that should be procured via BR anyways.

**A:** IOLC (Inflexible Offer Licence Condition) was introduced following a pattern of behaviour identified in winter 2021/2022 where regularly with several minutes notice on gate closure GigaWatts of Physical Notifications would be withdrawn and BM prices also changed to be extremely high (see balancing market review).

The most appropriate way to prohibit this behaviour was consulted on with Ofgem introducing the IOLC as a result.

While this does not prohibit a day ahead strategy to capture high priced acceptances in the Balancing Mechanism (BM), all available alternative options can be considered rather than lost due to short notice changes and lead times of those alternative actions ie. Synchronising a new machine, Interconnector trading or emergency return to service of circuits.

Economic withholding is still prohibited under REMIT (Regulation on Wholesale Energy Market Integrity and Transparency), as is artificial pricing and these rules apply to the Balancing mechanism and prohibit 'excessive pricing'. Not all high pricing is excessive.

Additionally, OFGEM noted that they would keep open the option to expand IOLC to capture other types of events if behaviours similar to those seen in winter 2021/2022 re-occurred.

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# Outstanding Questions

Slido code #OTF

**Q:** (29/01/25) NESO only send IPs to the BMU – this is a limitation of EDL - was this not meant to be resolved in the EBS1 2010 system refresh parties paid for?

**Q:** (02/04/25) When you do an emergency return to service why do you not notify the market of what is returning? It would be useful to know at least the impacted region - gencos need to manage TCLC obligations.

**Q:** (09/04/25) What was the reason for several fast reserve bids being accepted at over £3000/MWh in March? (22nd SPs 1-3, 31st SP48, plus a few other occasions).

**Q:** (09/04/25) We noticed several periods last week (e.g. SP23 on 06/04) where many of the wind bids were not SO-flagged. From what we can tell, they seemed to be taken for system reasons. Could you please clarify whether they were taken for system reasons or not? and if we can expect this behaviour to continue?

# Reminder about answering questions at the NESO OTF

Slido code #OTF

- **Questions from unidentified parties will not be answered live**. If you have reasons to remain anonymous to the wider forum, please use the advance question or email options. Details in the appendix to the pack.
- **The OTF is not the place to challenge the actions of individual parties** (other than the NESO), and we will not comment on these challenges. This type of concern can be reported to the Market Monitoring team at: marketreporting@nationalenergyso.com
- **Questions will be answered in the upvoted order whenever possible**. We will take questions from further down the list when: the answer is not ready; we need to take the question away or the topic is outside of the scope of the OTF.
- **Slido will remain open until 12:00**, even when the call closes earlier, to provide the maximum opportunity for you to ask questions.
- **All questions will be recorded and published** All questions asked through Sli.do will be recorded and published, with answers, in the Operational Transparency Forum Q&A on the webpage: https://www.neso.energy/what-we-do/systems-operations/operational-transparency-forum
- **Takeaway questions** – these questions will be included in the pack for the next OTF, we may ask you to contact us by email in order to clarify or confirm details for the question.
- **Out of scope questions** will be forwarded to the appropriate NESO expert or team for a direct response. We may ask you to contact us by email to ensure we have the correct contact details for the response. These questions will not be managed through the OTF, and we are unable to forward questions without correct contact details. Information about the OTF purpose and scope can be found in the appendix of this slide pack

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slido

# Audience Q&A

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

# Feedback

Slido code #OTF

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@nationalenergyso.com



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# Appendix

# Purpose and scope of the NESO Operational Transparency Forum

Slido code #OTF

**Purpose:**

The Operational Transparency Forum runs once a week to provide updated information on and insight into the operational challenges faced by the control room in the recent past (1-2 weeks) and short-term future (1-2 weeks). The OTF will also signpost other NESO events, provide deep dives into focus topics, and allow industry to ask questions.

**Scope:**

Aligns with purpose, see examples below:

**In Scope of OTF**

Material presented i.e.: regular content, deep dives, focus topics
NESO operational approach & challenges
NESO published data

**Out of Scope of OTF**

Data owned and/or published by other parties
e.g.: BMRS is published by Elexon
Processes including consultations operated by other parties e.g.: Elexon, Ofgem, DESNZ
Data owned by other parties
Details of NESO Control Room actions & decision making
Activities & operations of particular market participants
NESO policy & strategic decision making
Formal consultations e.g.: Code Changes, Business Planning, Market development

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# Managing questions at the NESO Operational Transparency Forum

Slido code #OTF

- OTF participants can ask questions in the following ways:
  - Live via Slido code #OTF
  - In advance (before 12:00 on Monday) at https://forms.office.com/r/k0AEfKnai3
  - At any time to box.nc.customer@nationalenergyso.com

- **All questions asked through Sli.do** will be recorded and published, with answers, in the Operational Transparency Forum Q&A on the webpage: Operational Transparency Forum | NESO
- **Advance questions** will be included, with answers, in the slide pack for the next OTF and published in the OTF Q&A as above.
- **Email questions** which specifically request inclusion in the OTF will be treated as Advance questions, otherwise we will only reply direct to the sender.
- **Takeaway questions** – we may ask you to contact us by email in order to clarify or confirm details for the question.
- **Out of scope questions** will be forwarded to the appropriate NESO expert or team for a direct response. We may ask you to contact us by email to ensure we have the correct contact details for the response. These questions will not be managed through the OTF, and we are unable to forward questions without correct contact details. Information about the OTF purpose and scope can be found in the appendix of this slide pack.



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# Skip Rates – 'In Merit' datasets



**We recognise that these datasets aren't as intuitive as they could be – specifically the column headings. Please be reassured that we are looking at ways to improve this - we will update the documentation to include this information and will also discuss the datasets in more detail at the webinar on 27th February.**

We will use 'accepted' and 'instructed' differently in this context, even though they are normally the same.

These datasets show the units that should have been instructed if decisions were solely based on price, rather than all units that were instructed. Therefore this dataset does not match the total accepted volume datasets in Elexon.

In Merit Volume = Accepted Volume + Skipped Volume

In Merit Volume
- This is the recreated in merit stack showing the lowest cost units that were available to meet the requirement, where the requirement is based on the volume of units that were actually instructed
- Therefore this is the volume that should have been accepted if decisions were solely based on price
- The sum of this column is the total instructed volume in the 5 minute period (subject to the relevant exclusions)

Accepted Volume
- This is the volume that was accepted in merit, as a subset of the 'In Merit Volume' column – i.e. how much volume was accepted in merit
- The sum of this column will be less than the sum of the 'In Merit Volume' column, unless there is no skipped volume
- Note: this column does not list all instructed units

Skipped Volume
- This is the volume that was skipped, as a subset of the 'In Merit Volume' column – i.e. of the volume that we should have instructed, how much was skipped

It's possible that the list of units increases, decreases, or stays the same between stages, but the total 'In Merit Volume' will always remain the same (or no volume is excluded) or decrease (due to exclusions).