



ESO Operational Transparency Forum

9 February 2022

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.**

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>

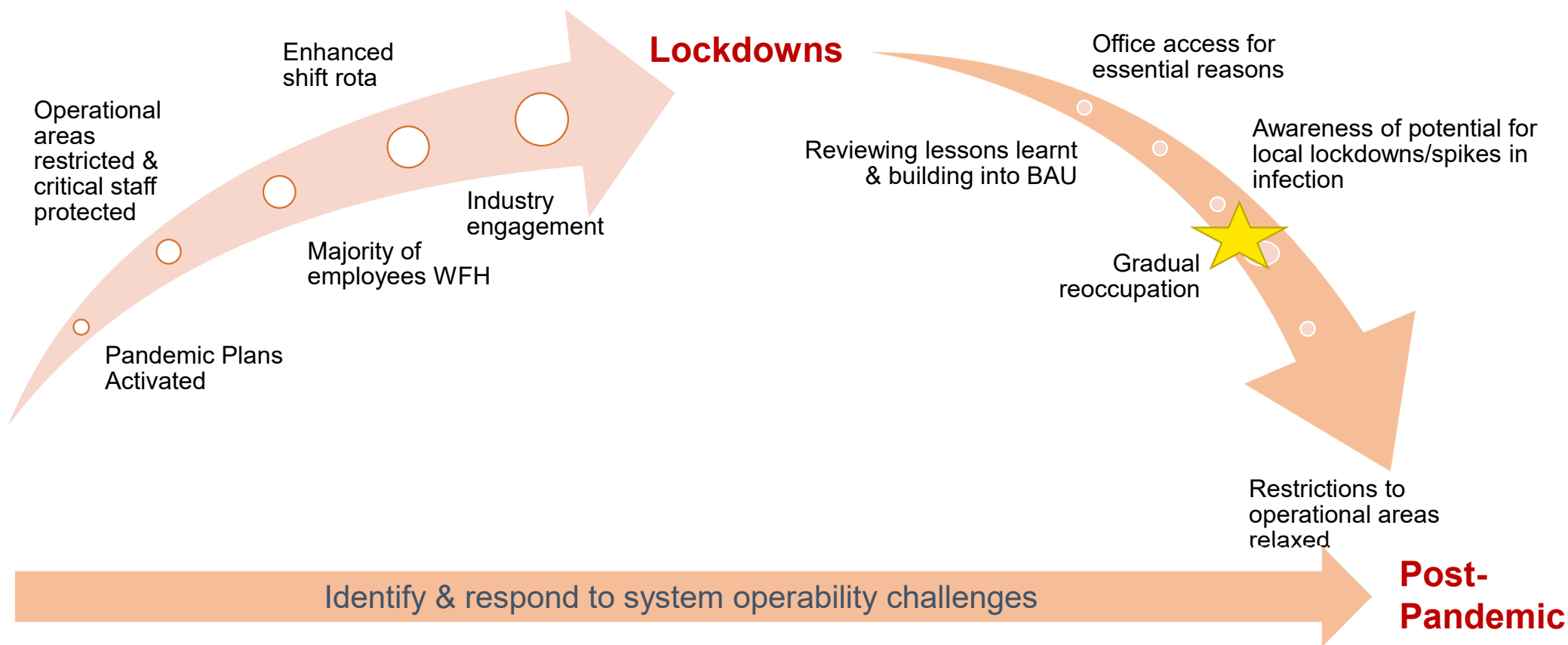
Regular Topics

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

Focus Areas

- Dynamic Moderation & Dynamic Regulation
- Single Markets Platform
- NOA Pennines High Voltage Pathfinder
- B6 Constraint Management Pathfinder Consultation

Protecting critical staff to maintain critical operations



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:

February:

16 Feb: Balancing Services Adjustment Data (BSAD) Overview
 Day in the life of SO-SO Trading

Manifest Error Process Overview

Sterilised Headroom Overview

Questions outstanding from previous weeks

Q: Last Monday there were BSADs reported on the East-West Interconnector at the same time. Were these BSADs related to the SO-SO trades? Will BSADs for other SO-SO trading periods be restarted and why was there no BSADs on the Moyle interconnector on last Monday?

A: Next week (16 February), we will be joined by one of our settlement experts to talk through the BSAD process and the issues we have experienced over the past few months. We have been reviewing all the trades and hope to be in a position where any missing trades have been re-submitted by the end of the week or early next week. Thank you for your patience.

Q: The others interconnectors are visible on ENTSO-E ahead of time

A: CE interconnectors are visible on the ENTSO-E transparency platform (<https://transparency.entsoe.eu/transmission-domain/r2/scheduledCommercialExchangesDayAhead/show>) and information on the Irish I/c are available here (<https://www.semopx.com/market-data/market-results/#4>)

Q: Can you provide some explanation on drivers of the volume of constraint actions taken in the past few months? We saw a 50% fall in system actions in the BM in December, compared to November, despite very similar wind generation across both months

A: Within our [RIIO-2 Incentive Report for Q3](#) published 26 January, we provide some insight into the overriding drivers of cost. As you have referenced, the volume of constraint actions was significantly higher in November than in December. This is due to the difference in network availability between the two months particularly over the B6 boundary.

Q: Can you explain more about ESO policies on cost variability?

A: Operational Policies, such as those referenced within control room timescales, seek to maintain a balance between multiple drivers – system security risks, providing system access to Network operators and economic operation. Policies such as FRCR and our loss of mains programme seek to maintain the correct balance between system security risks and balancing costs whereas in the long-term the NOA seeks to strike a balance between network investment and real time balancing costs.

Q: There was ca.£1m spent in increasing Inertia last week. It would be good to understand which of the Stability Pathfinder Phase 1 projects were running at this time and is this data published and where? If not do you plan to publish this data?

A: The Stability Pathfinder Phase 1 tender results were published in January 2020 and can be found here: <https://www.nationalgrideso.com/document/162091/download>

Questions outstanding from previous weeks

Q: Will you consider making changes to the CM rules to remove spurious CMN's? As previously noted, these cause impacts in the market and don't correctly portray market conditions.

A: We are investigating the reasons for the spurious CMN's and are expecting to make changes to prevent them recurring. These would be changes to our system rather than CM rule changes.

Q: Majority of these massive balancing costs are from managing wind on the system (constraint costs which has cost consumers £.05b/y on top of subsidies) because Transmission capacity and market design hasn't kept up. How much more will this cost increase given NZ targets and the 40GW wind expected by 2030?

A: Constraint costs are a network management tool used by many system operators. Our annual Network Options Assessment process assesses the economic case for construction of transmission against paying constraint costs. This ensures that investment in transmission is undertaken at the right time to deliver value for money for consumers.

Q: Do you have a revised forecasted view of the current month Jan 22?

A: No we have not published a revised forecast view of the current month. At month ahead we publish a rolling 24 month forecast.

Q: Will the latest BSUoS forecast be available in CSV format as normal? I can see it's available in pdf format at the moment but will the latest BSUoS actual rates and forecasted rates be published in CSV format as normal going forwards?

A: The BSUoS forecast in CSV format is now on the data portal. We are looking at the best options for the actual rates as this is included in a number of other areas at different timescales already. If you have comments or feedback on this please send them through to us at box.NC.Customer@nationalgrideso.com

Q: Any comment on the inertia managed on Sat Jan 29th; it still felt quite low? How come there was no need to manage RoCoF?

A: The inertia level on the system on Saturday 29 January was low. Action was required to increase the system inertia so that there would be no wider system implications following a fault from the power system. The RoCoF level and the associated losses on the day were covered by the FRCR framework.

Questions outstanding from previous weeks

Q: The ESO Actions | Saturday 29 January Minimum shows almost 2 GW of CCGT NG ESO Actions (upward, for voltage and inertia constraints) yet only -262 MW of Wind actions (downward). What's missing in the balance between up- and downward actions?

A: The ESO actions for CCGT and Biomass are actually the planned actions from the final System Operating Plan. This means they will usually be very close to what happened in real time. In this instance it seems that there were different actions taken than to those planned. We are looking at how we can produce this from actuals rather than planned data.

Q: On the 12-12 the evening saw down regulations and wind being taken out. From half hour 38 to 39 wind stopped being taken out and down regulations setting the imbalance price. This meant a drop from 148 to - 20. Can you explain this sudden change?

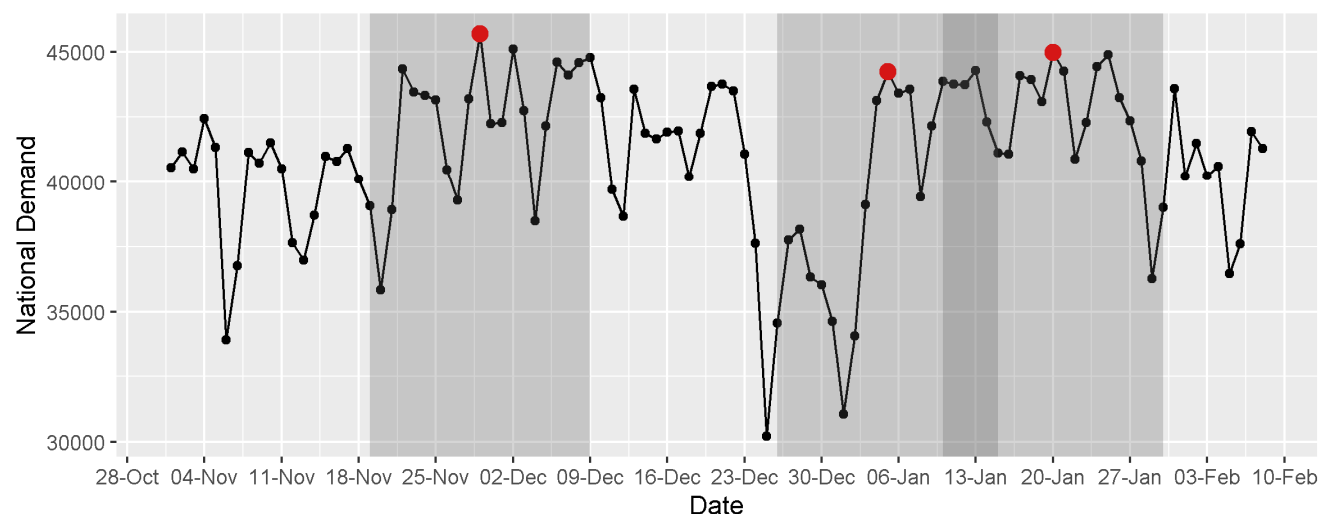
A: We appreciate this response is quite delayed from when you asked the question. We haven't been able to identify anything in particular that would drive this sudden imbalance price change from an operational point of view. It looks as if this is driven by the calculated price rather than the volume so would be down to the variances in prices for actions from one settlement period to another.

Q: Why is the available offers for optional fast reserve not published? There is no transparency compared to BM. Is it possible to provide more information on the decision making in the Optional FR market? Higher priced providers appear to be being used over cheaper alternatives

A: We welcome feedback on the data we publish and are always looking at further transparency across balancing services. We are currently looking at what additional data we can publish for the optional reserve services we dispatch, including data on availability prices, but we first need to ensure consistency with any competing services to ensure we are not disadvantaging any markets. Where we are able to ensure consistency, then we will look to provide further transparency at the earliest opportunity, subject to any IT system constraints. We will look to provide as much insight as possible into the decision making across our reserve and response markets.

Please note that questions asked related to the Octopus Trial have been taken away by the project team to be incorporated into their ongoing work

Demand | Indicative Peak National Demand



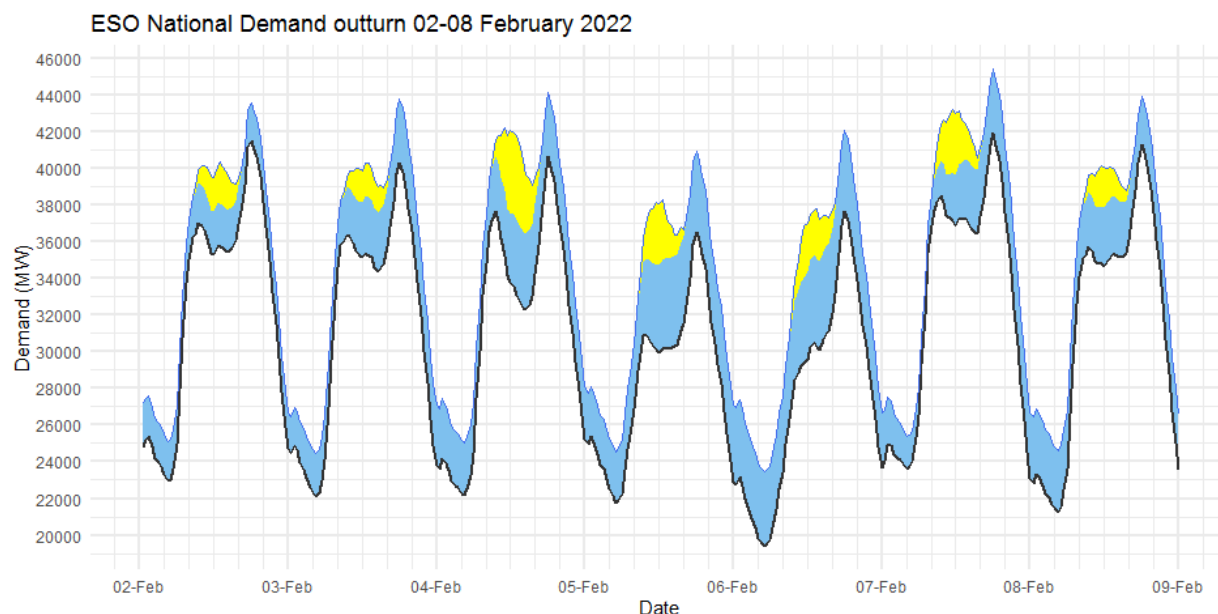
ESO operational metering			
Date	Time (HH ending)	National Demand (MW)	Estimated triad avoidance (HH corresponding with the time of the peak) (MW)
29/11/2021	1730	45679	0
20/01/2022	1730	44977	400
05/01/2022	1800	44245	0

We present National Demand operational metering because triad demand is calculated on the basis of demand excluding interconnector exports. This definition of demand is neither National Demand nor Transmission Demand, but more closely tracked by National Demand.

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 week demand out-turn



Renewable type
 Distributed_PV
 Distributed_Wind

Demand type
 Estimated_Total_Demand
 National

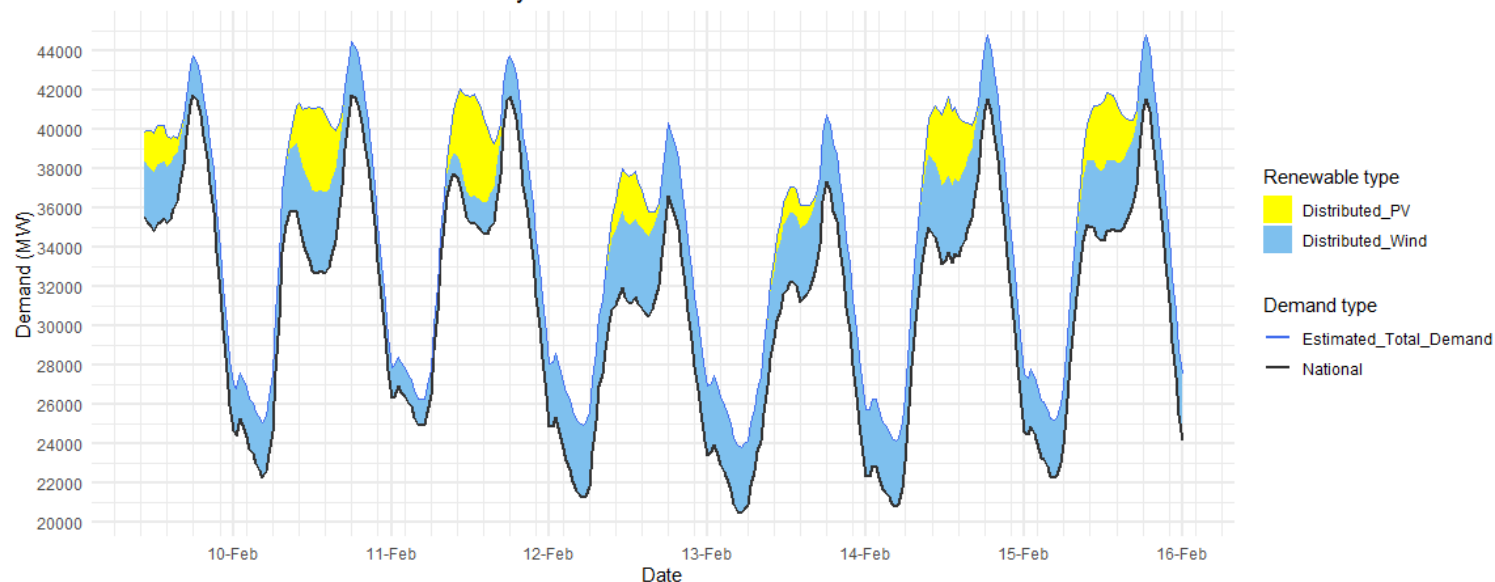
Date	Forecasting Point	FORECAST (Wed 02 Feb)		OUTTURN			
		National Demand (GW)	Dist. wind (GW)	National Demand (GW)	Triad Avoidance est. (GW)	N. Demand adjusted for TA (GW)	Dist. wind (GW)
02 Feb	Evening Peak	41.6	1.9	41.5	0.0	41.5	2.1
03 Feb	Overnight Min	23.0	2.2	22.1	n/a	n/a	2.4
03 Feb	Evening Peak	40.0	3.5	40.3	0.0	40.3	3.5
04 Feb	Overnight Min	21.8	3.4	22.2	n/a	n/a	2.9
04 Feb	Evening Peak	39.9	3.7	40.6	0.0	40.6	3.5
05 Feb	Overnight Min	21.6	3.0	21.7	n/a	n/a	2.8
05 Feb	Evening Peak	35.8	4.1	36.5	0.0	36.5	4.5
06 Feb	Overnight Min	19.5	4.0	19.4	n/a	n/a	4.0
06 Feb	Evening Peak	37.3	3.3	37.6	0.0	37.6	4.5
07 Feb	Overnight Min	20.5	3.4	23.6	n/a	n/a	1.8
07 Feb	Evening Peak	40.2	3.8	41.9	0.0	41.9	3.4
08 Feb	Overnight Min	21.7	2.9	21.3	n/a	n/a	3.4
08 Feb	Evening Peak	41.8	2.3	41.3	0.0	41.3	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

ESO Demand forecast for 09-15 February 2022



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.

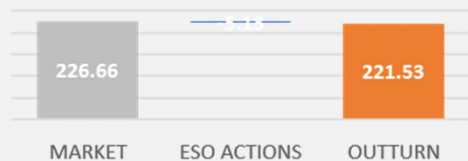
First time ESO shares its Triad Avoidance adjusted **National Demand** forecast is after 21:00 on D-1

		FORECAST (Wed 09 Feb)	
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)
09 Feb 2022	Evening Peak	41.7	2.0
10 Feb 2022	Overnight Min	22.3	2.8
10 Feb 2022	Evening Peak	41.7	2.7
11 Feb 2022	Overnight Min	24.9	1.3
11 Feb 2022	Evening Peak	41.6	2.1
12 Feb 2022	Overnight Min	21.2	3.7
12 Feb 2022	Evening Peak	36.6	3.7
13 Feb 2022	Overnight Min	20.5	3.3
13 Feb 2022	Evening Peak	37.3	3.4
14 Feb 2022	Overnight Min	20.8	3.4
14 Feb 2022	Evening Peak	41.5	3.2
15 Feb 2022	Overnight Min	22.3	3.0
15 Feb 2022	Evening Peak	41.5	3.2

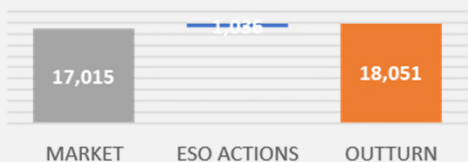
ESO Actions | Monday 31 January Peak

Date: 31/01/2022
SP: 36

Carbon Intensity (gCO₂/kWh)



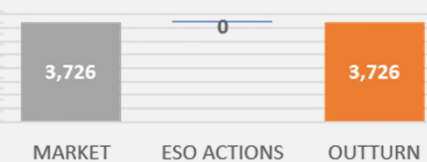
CCGT



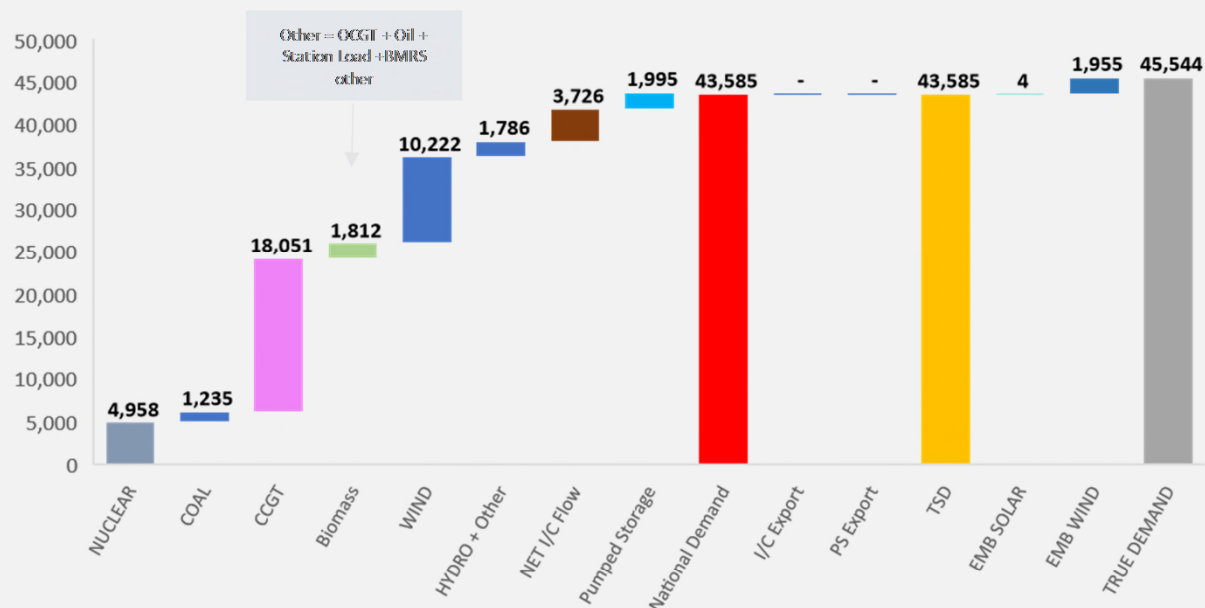
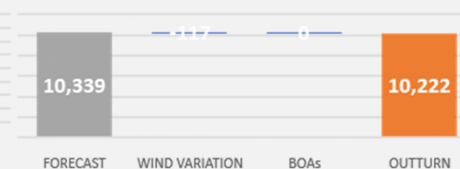
Biomass



I/C



WIND

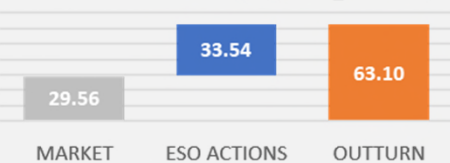


ESO Actions | Sunday 06 February Minimum

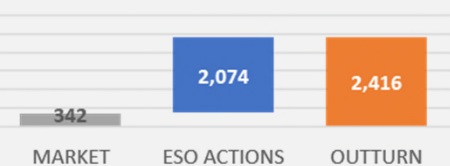
Date: 06/02/2022

SP: 10

Carbon Intensity (gCO₂/kWh)



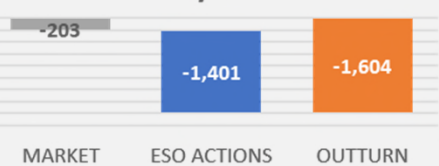
CCGT



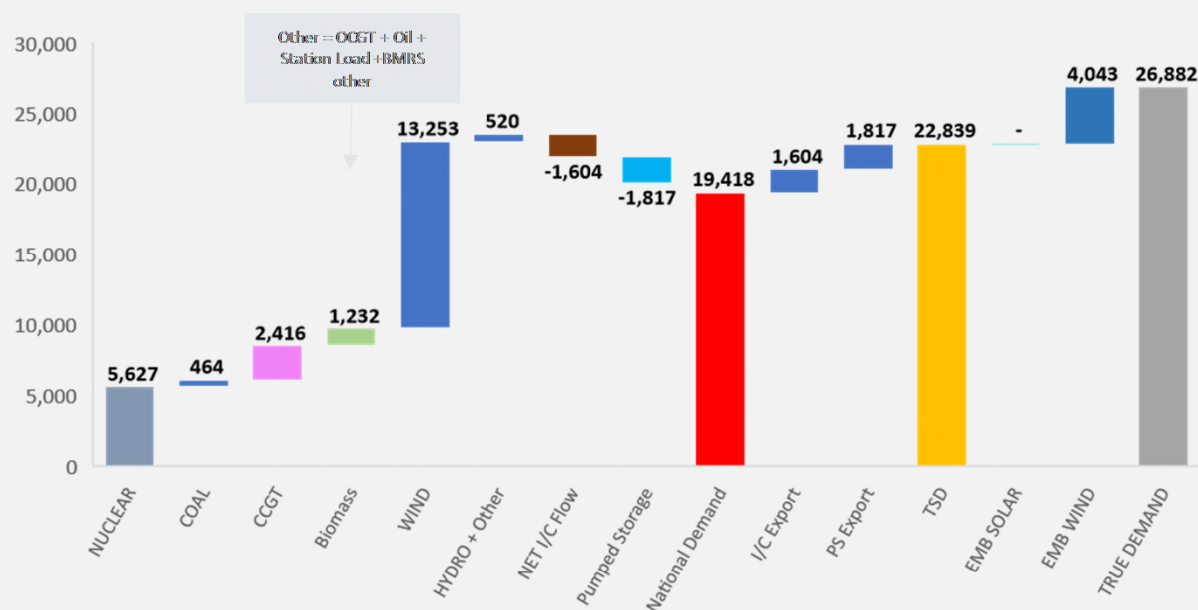
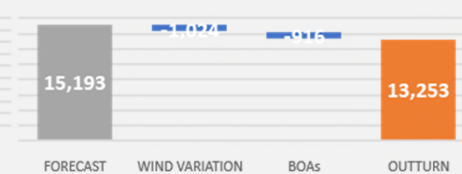
Biomass



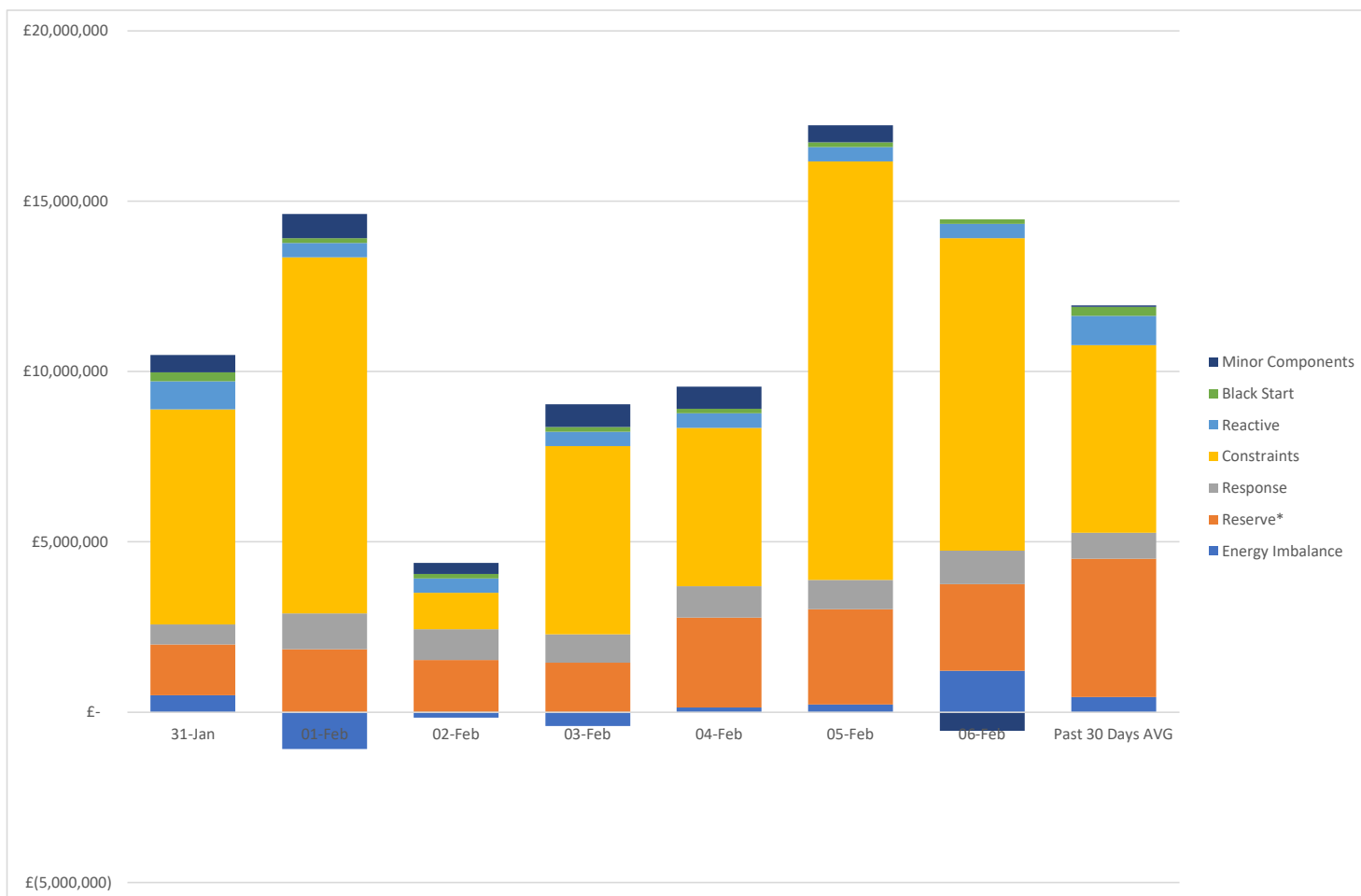
I/C



WIND



Transparency | Costs for the last week

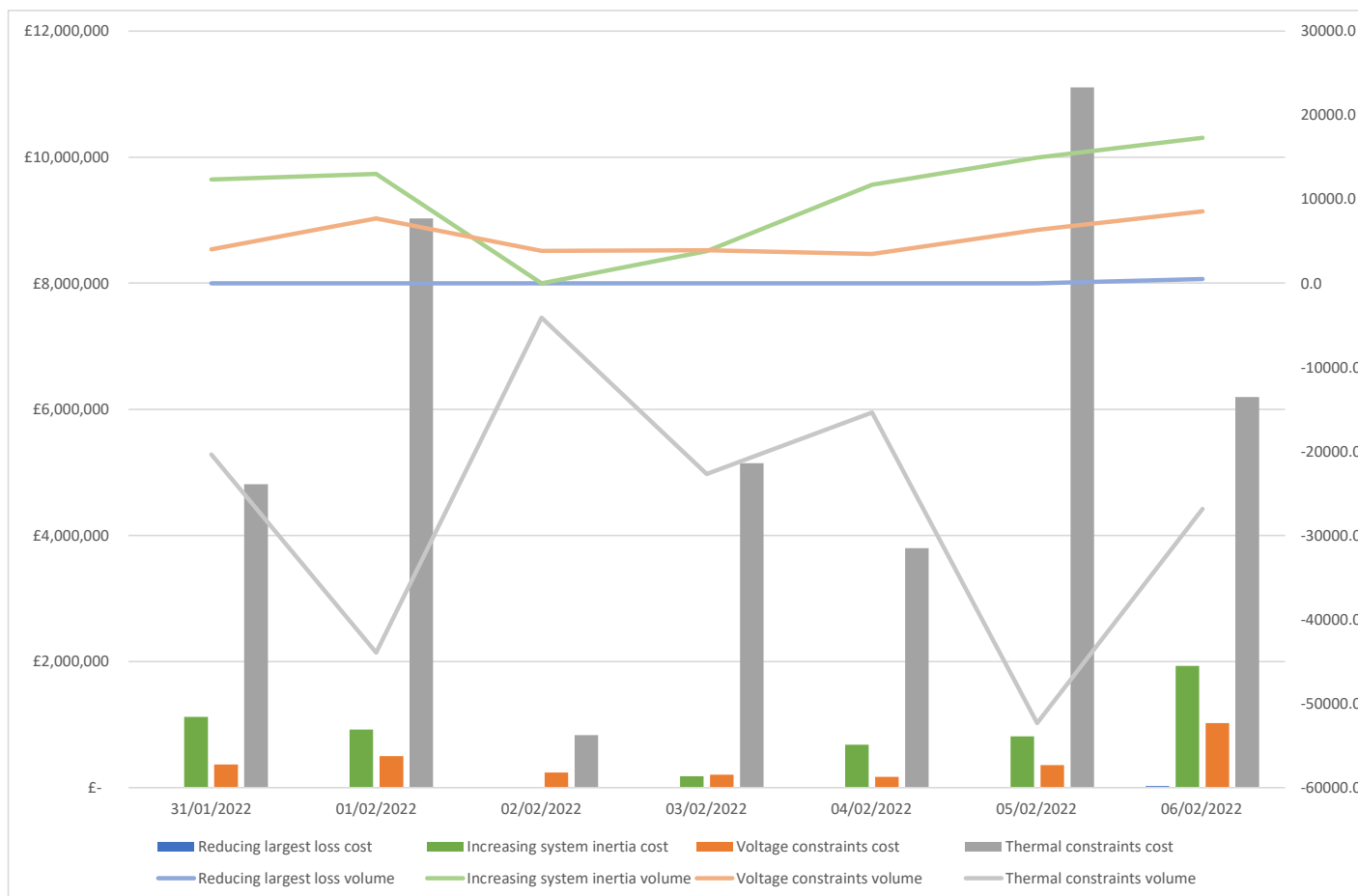


Saturday 5th was the most expensive day with a spend of £17m. Both Tuesday 2nd and Sunday 6th the daily spend was nearly £14m.

The main driver behind the high spend over those days were the costs associated to constraint actions.

Past 30 Days Average added

Transparency | Constraint cost breakdown



Thermal – network congestion

Throughout all days, actions were required to manage thermal constraints, with little intervention on Wednesday.

Voltage

Action taken to synchronise generation to meet voltage requirements were required throughout the week.

Managing largest loss for RoCoF

No intervention required to manage largest loss on interconnectors.

Increasing inertia

intervention required to increase minimum inertia every day except Wednesday.

<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 9 February and is subject to change. It represents a view of what the market is currently intending to provide before we take any actions.

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

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

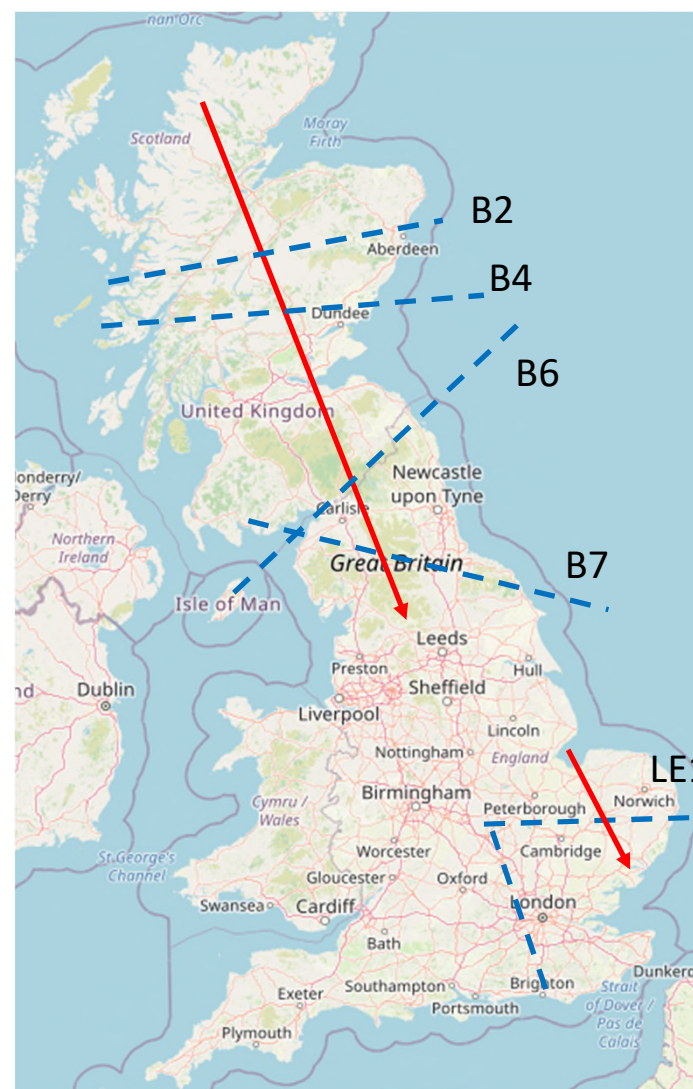
For lower (and potentially negative) surplus values, then this indicates operational margins could be tight and that there is a higher likelihood of the ESO needing to use its tools, such as issuing margins notices. We expect there to be sufficient supply available to respond to these signals to meet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

Margins are adequate for the next seven days.

Day	Date	Notified conventional generation (MW)	Wind (MW)	Interconnector availability (MW)	Peak demand (MW)	Indicative surplus (MW)
Thu	10/02/2022	41952	11003	3900	42964	9625
Fri	11/02/2022	42449	7513	3900	42580	6967
Sat	12/02/2022	41468	13678	3900	37652	16081
Sun	13/02/2022	42122	12826	3900	38342	15602
Mon	14/02/2022	42676	12723	3900	42576	11643
Tue	15/02/2022	42809	13410	3900	41854	13062
Wed	16/02/2022	43844	14063	3900	41160	14653

Transparency | Constraint Capacity

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



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>

Dynamic Moderation and Dynamic Regulation

DR launch dates*

- DR EPEX go live - Thu 24 March at 17:00
- DR first auction - Fri 8 April at 14:30

DM launch dates

- DM EPEX go live - Thu 21 April at 00:00
- DM first auction - Fri 6 May at 14:30

- Onboarding on Single Market Platform – starts this week
- Mock auction opens on 22 Feb
- Information on the systems for BM & non-BM providers can be found on the ESO website
- *Awaiting outcome for DR derogation on Clean Energy Package Article 6(2)

Latest information can be found on [DM](#) and [DR](#) webpages

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

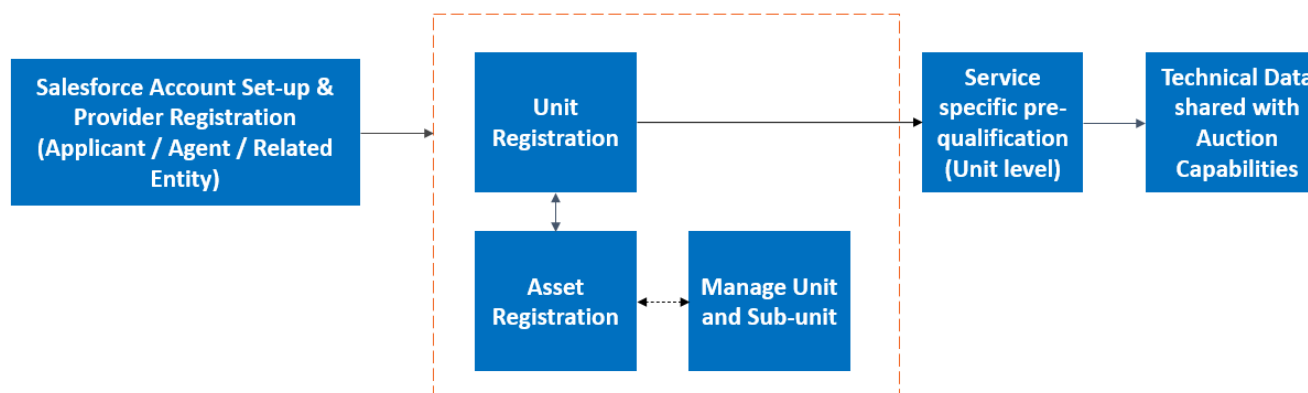
Single Markets Platform Go Live – What you need to know

What is SMP?

- A key deliverable through RIIO-2 to support NGESO in becoming a better buyer of balancing services
- A seamless and consistent user experience to access ESO markets for a diverse range of current and future participants
- Part of a wider strategy to utilise digital ways of working to make it easier to do business with NGESO

What's going live and when?

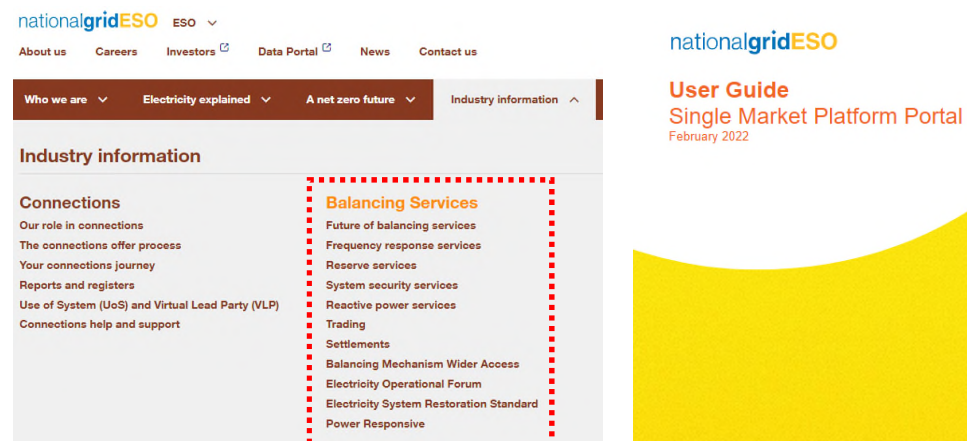
- The foundational release will be going live on 10 February. More releases will follow over time.
- This will support the onboarding of new and enduring day ahead frequency response products
- Dynamic Containment data will be transferred and accounts set up pro-actively within 2 days (please speak to your Account Manager)



Single Markets Platform Go Live – What you need to know

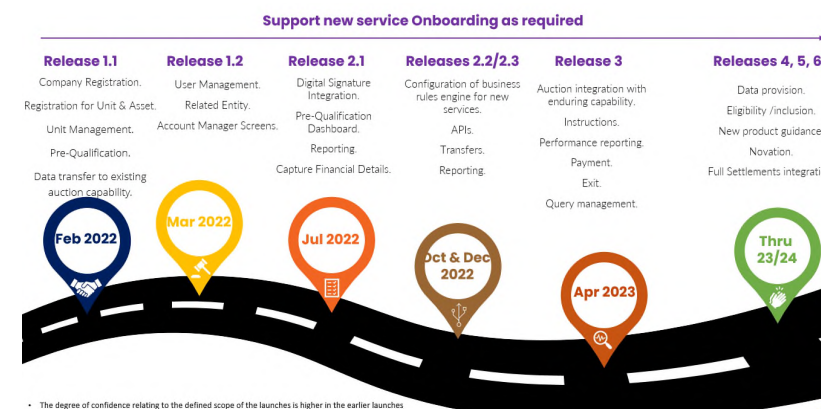
Where can I find the SMP and what support is available?

- There will be links to register on the SMP within the “Frequency response services” and “SMP” webpage (to be launched) within the Balancing Services section of the NGESO website
- A guidance document and video will be available as well as built-in guidance on the platform itself
- Your Balancing Services Account Managers will be able to support you through the process alongside intermittent drop-in sessions with the project team as required



How is SMP being developed and can I get involved?

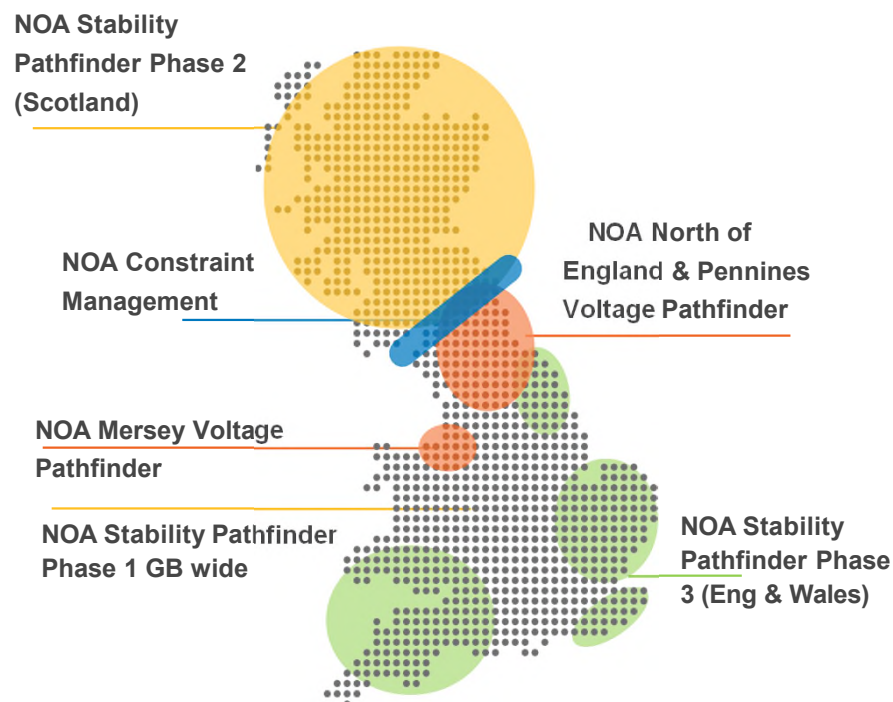
- We have introduced a “product model” for SMP and are developing it in an agile way that will see regular releases over time to enhance functionality, look and feel as well as introducing additional balancing services
- We are seeking genuine industry co-creation and run regular “Show and Listen” working group events that anyone is welcome to attend (see Future of Balancing Services newsletter and SMP webpage to sign up)



NOA Pathfinders & NOA Pennines High Voltage Pathfinder

What are NOA Pathfinders?

Seek solutions to solve specific operability needs (high voltage, stability or constraint management) on the electricity system through a competitive procurement process.



What's happened in NOA Pennines High Voltage Pathfinder?

National Grid ESO ran competitive NOA Pathfinder process to manage voltage for a 10 year period

700 MVAR reactive power capability will be provided by Dogger Bank C's onshore converter station and from National Grid Electricity Transmission

This NOA Pathfinder is worth £22.5m over the contract period with multi million pounds of consumer benefit forecast

More information can be found on our [website](#)

What's next?

We will look to signal future opportunities to the market as early as possible

We are utilising lessons learnt from previous Pathfinder Projects, we are aiming to develop a more standardised approach

Launching the 2024/25 B6 Constraint Management Pathfinder

B6 Constraint Management Pathfinder (2024/25)

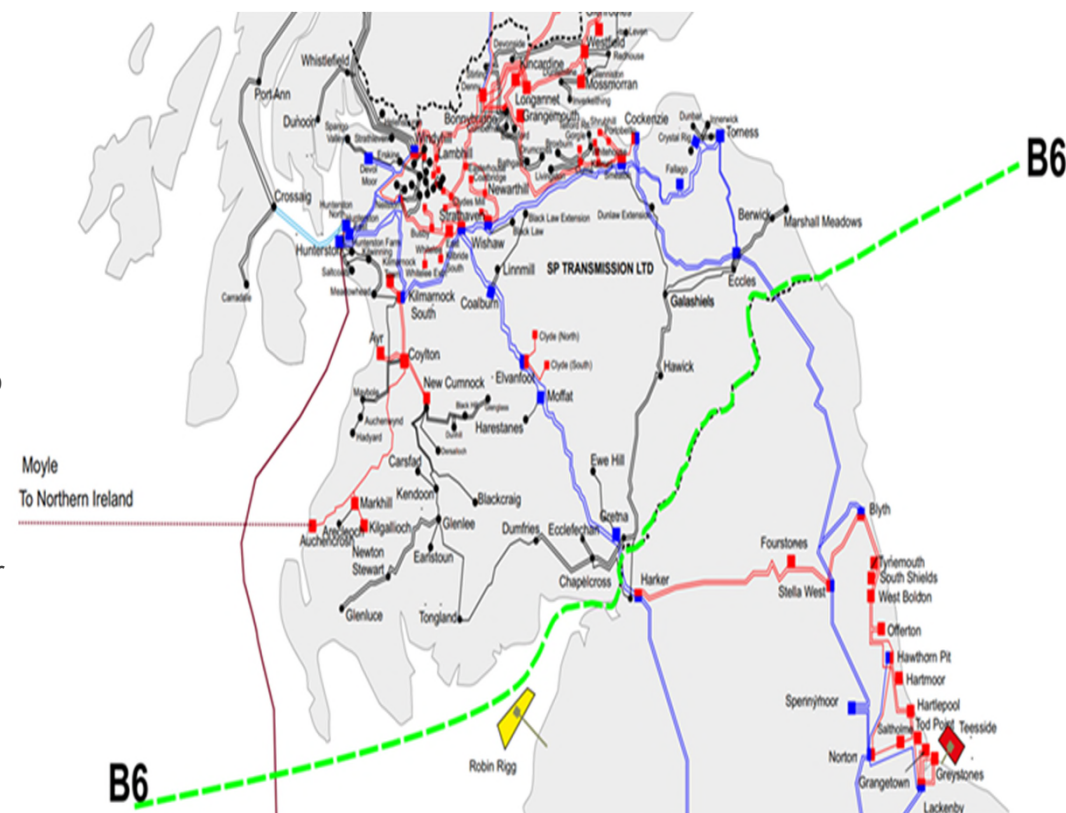
The B6 CMP is looking to procure transmission connected generation within Scotland to provide an intertrip service. Providers must be above the B6 (SCOTEX) boundary to be effective in resolving the constraint.

The service would be to provide the ESO with a commercial intertrip, for expected service delivery from October 2024 through to September 2025.

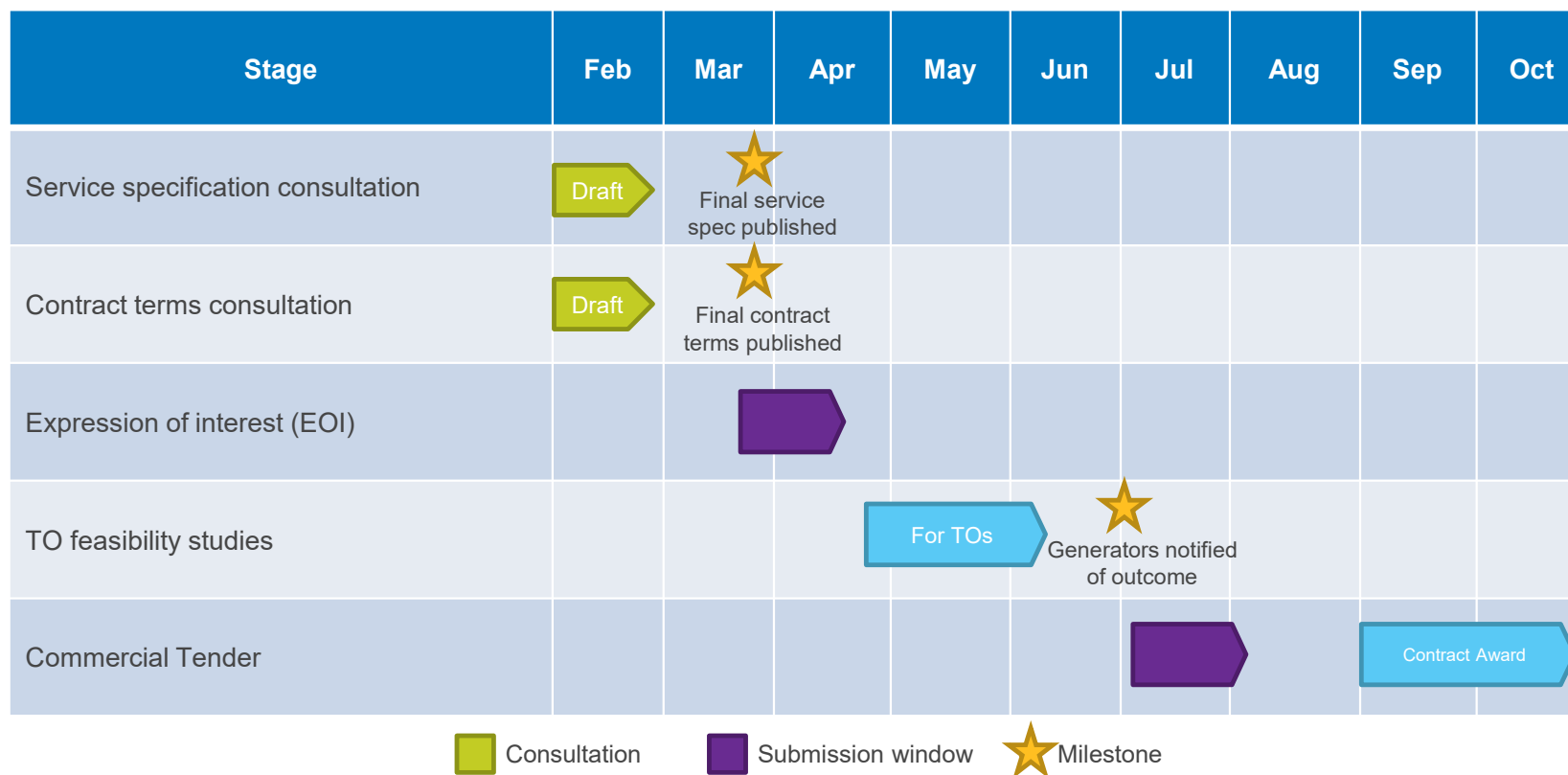
CMP ran a tender in 2021 to procure intertrip services for 2023/24. Following the tender, the ESO has decided to run another tender for the following year.

Successful parties in 2023/24 tender have been awarded contracts.

This year, the ESO will be launching the tender for service delivery in 2024/25.



Timeline



What we need from you?

The B6 Constraint Management Pathfinder (CMP) for 2024/25 launched its consultation for its [Draft Service Specification](#), [Draft Framework Agreement](#), and [Draft Standard Contract Terms](#) on **Monday 07 February 2022** until **17:00 on Friday 25 February 2022**.

The documents can be found on the [ESO's Constraint Management Pathfinder webpage](#)

To provide feedback, please use the [Consultation Feedback Form](#) and email this to box.cmp@nationalgrideso.com before the deadline.

Following this, the ESO shall consider the feedback received when updating the documentation, and thereafter launch an expression of interest towards the **end of March 2022**.

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

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.

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