



ESO Operational Transparency Forum

03 August 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

- System Events
- Questions from last week
- Demand review
- Costs for last week
- Constraints

Focus Areas

- Balancing Costs: Listening Session – feedback
- Early view of Winter 2022/23 – key messages
- Demand Control via Voltage Reduction tests – deep-dive

Contingency Contracts

Things we hope to answer in the coming weeks

Costs

- When will you be able to provide a forecast of costs?
- How much will the contracts cost?
- How will the contracts work in relation to cash-out?

Dispatch

- Will market be made aware of ESO chooses to warm the plant ahead of dispatch?
- How will it be dispatched?
- What does 'not in the market' mean?
- When will they be dispatched in relation to the Capacity Market?

Other

- What data will the unit be submitting and how will this data be made public?
- How are you considering the units in other analysis?

We will be unable to answer further questions on this at today's forum.

Future deep dive/ response topics

Upcoming soon:

Inertia deep dive – 24th August

ESO Trading on Interconnectors - September

Capacity Market (stress events) – TBC

Items we have taken offline and will come back to this forum on in the future

REMIT obligations on ESO

Feedback welcomed on our identified topics for inclusion

Questions outstanding from previous weeks

Q: There are interconnector trades taken at prices above the VoLL today. What is the reason behind this?

A: We believe this was covered in the presentation of the 20th July on the OTF of the 27th July.

Q: Will the emergency instructions of the interconnectors last week turn up in the II run of the cashout prices?

A: As per our answers last week, we suggest directing this question to Elexon as the party responsible for publishing the Cashout prices. Emergency Instructions are system flagged at point of instruction.

Q: The Ofgem consultation response on CMP360 and CMP361 which both relating to introducing an ex-ante fixed BSUoS tariff is now expected to be announced on 26th August. If approved is it still NG ESO intention for this to be implemented from April 2023?

A: Yes, if the decision by Ofgem is to implement CMP361 for April 23 then we would be able to accommodate that from the preparatory work that we have been doing for this.

Questions outstanding from previous weeks

Q: Can you indicate when you will resume publishing the Daily Reports? Also, is there another data source that contains recent expenditure data? I've been unsighted of initial cost estimates since July 7?

A: We apologise for the delay in publishing the daily reports. The issue has been fixed and we are currently publishing the backlog of daily reports.

Note that we also publish data on the data portal that shows the actual daily billed BSUoS total and the cost per Settlement Period at the metering stage. If the Daily Cost Report is not available, then this data could provide a first view of the costs.

<https://data.nationalgrideso.com/balancing/current-balancing-services-use-of-system-bsuos-data>

Q: At what point do ESO balancing actions across the ICs antagonise the neighbouring TSOs to the point they curtail your ability to do so?

A: We maintain regular communication with European TSOs. We will continue to do so, in order for each SO to understand the issues affecting the other and action we may need to take to resolve.

Q: Which constraint(s) caused the high costs on 20-Jul?

A: The LE1 boundary was the limit which caused trade volumes on 20th July.

Questions outstanding from previous weeks

Q: Were we not exporting to the continent before we realised that we needed the power?

A: The need was due to an increase to the already existing export. NGENSO were exporting to France via IFA/IFA2/ElecLink but importing to GB on BritNed & Nemo. Nemo was due to change to full export at 13:00 which would have breached the existing constraints. Trades we instructed by NGENSO to reduce the export on Nemo however these trades could not be completed. In real-time only Emergency options were available. France was already in an Alert state. Due to the urgent and immediate need to manage the constraint limit an Emergency Instruction to maintain Nemo at a 0MW export was given to secure the network.

Q: The transfer capacity forecasts on the constraint boundaries for this autumn/winter look concerning. What are the ESO actively doing to improve this situation?

A: More info on winter is communicated in our early view of the winter outlook document. We are continually focusing on our boundary requirements and active constraints and review this in a number of timescales for both short and long term views.

Q: Slide 25 referees to ESO liaising with 'Transmission Operators'....have I missed something the ESO is the only Transmission OPERATOR in GB and is this also a single TO (NGET) so why refer on the slide to 'TOs' (plural)?

A: Indeed, there was a typo and this should say "Transmission Owner". We continually work with all TOs to ensure continued safe system operation.

Questions outstanding from previous weeks

Q: Does ESO have any other initiatives in flight to ensure cashout prices are very high this winter?

A: Balancing costs are part of our day-to-day operations as well as ensuring that these are incurred in the most economic order.

Following high cost days last year we initiated the BM Review which was published earlier this month and we will continue to monitor the market to assess what other initiatives may be necessary outside of our existing range of tools and products.

Questions outstanding we are still working on

Q: BMRS Unavailability of Transmission Infrastructure reports: I find a few sparsely detailed submissions under the Off-Shore Grid Infrastructure section but not able to find any under either of the Transmission Grid sections. Is NG not submitting this information for its assets - if not, why?

Q: Regarding the TSO-TSO trade with SEMO, I can't see it in any Disaggregated Balancing Services Adjustment Data (DISBSAD) - where can we see this data? Clarification: Regarding TSO-TSO trade with SEMO - I am interested with trades with Ireland.

Q: On 10th June, during period 32, T_AKGLW-3 had their Offer price (bid undo) accepted at £99,999 /MWh for just over 2 MWh. Please could you provide an explanation for this?

Questions outstanding we are still working on

Q: Leaving the BSU in play for so long resulted in battery operators charging up to full capacity beforehand, making a shortfall more likely prior to the CM notice going live. How much consideration do you put on this considering it could easily be a 1.5GW swing and this will only grow?

Q: Why was the CM notice only cancelled with ten minutes to spare before it became live?

Q: Why was the CMN cancellation format different from historical ones? i.e. 'Message from Electricity System Operator' rather than the standard 'Electricity Capacity Market Notice Cancelled'.

Q: Any lessons learned from Monday that can be shared to this forum? It could happen again this summer so would you do anything different next time?

Q: How much self-dispatch, excluding plant which submits PNs, was ENCC expecting at the commencement of the CMN period on Monday at 8pm, had the CMN not been cancelled? Clarification: the question about self-dispatch was about ESO's estimate of expected volumes of non-PN dispatch that would have arrived at 8pm, if the CMN had remained in force. It wasn't about whether or how much margin or reserve was available.

We will come back next week with more information about CMNs.

Questions outstanding we are still working on

Q: Would a BM offer priced above VoLL (£6k) get accepted?

Q: Practically is there any price at which ENCC would choose to disconnect demand?

Q: This will set an important precedent for upcoming winter... Why is VoLL not the limit on the price the ESO is prepared to pay before enacting demand reduction?

This is an important question which needs further discussion with our key stakeholders, BEIS and Ofgem, taking into account customer views. We hold the listening session last Friday 29th on balancing cost. We welcome any question and feedback through the OTF as well.

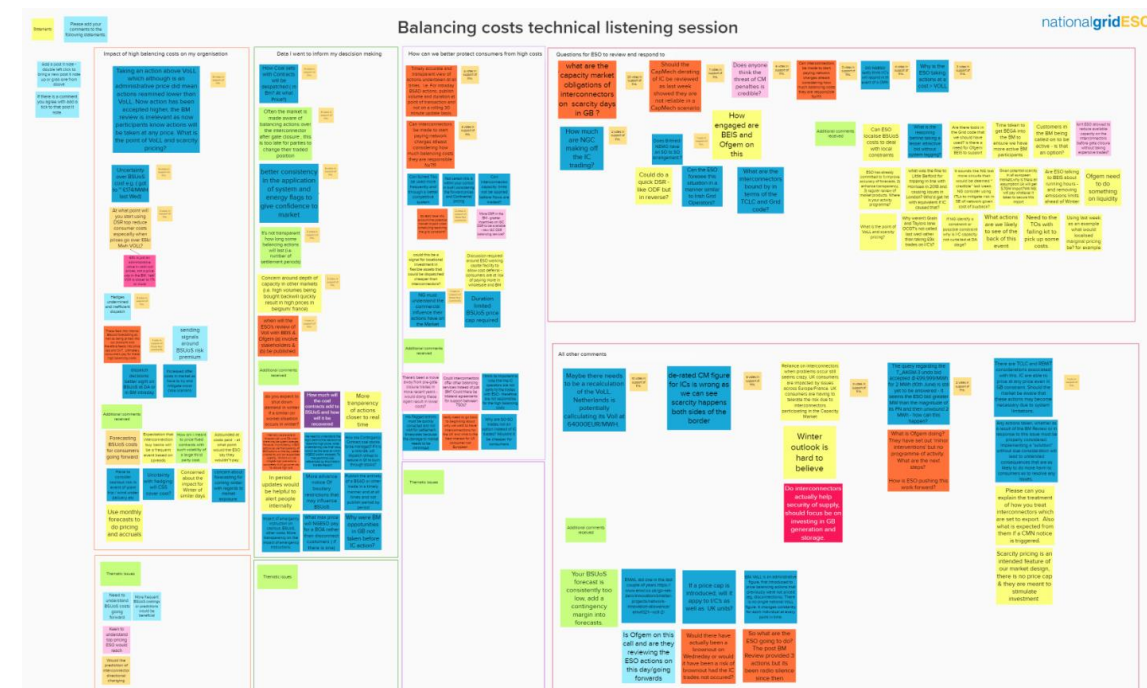
It is worth noting there is a number of definitions and values of VoLL. For instance, VoLL is used to set scarcity pricing but also a different level of VoLL is used to set the reliability standard by government.

We will come back as soon as we have more information.

Balancing Costs: Listening Session

You told us...

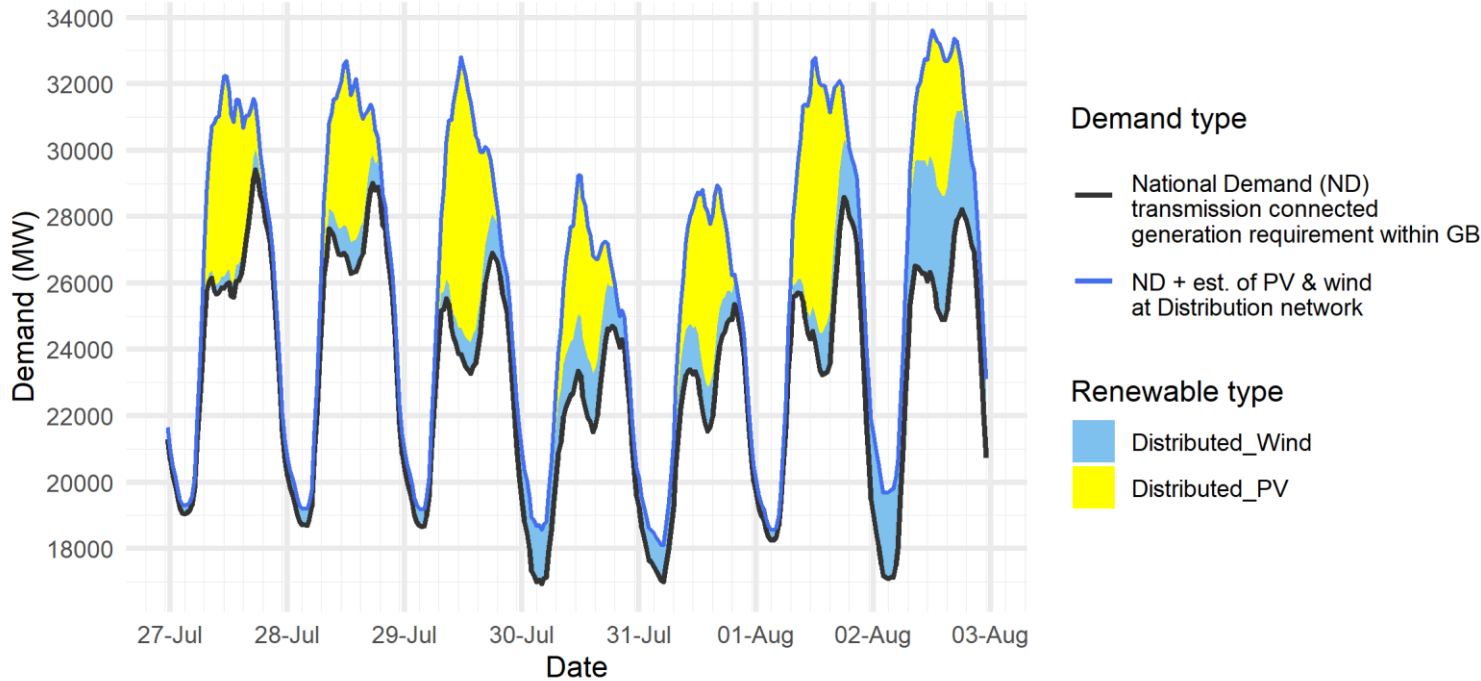
- Taking an action above Value of Lost Load has led to confusion on its purpose and true value, this creates difficulty in identifying appropriate scarcity pricing levels
- Taking high cost actions drives uncertainty in Balancing Services use of System (BSuoS) Charges creating risks for your businesses
- Clarity is needed on coal contracts impact on BSuoS charges
- Some data items are published too late, publication of ESO actions at the point of requirement / agreement will lead to more efficient markets
- You would like clarity on Capacity Market, Transmission Constraint Licence Condition and REMIT obligations
- You are not confident in the assessment of interconnector availability to import this winter



Over 100 ideas, concerns and questions were shared by more than 70 contributors. We commit to distributing this feedback to the relevant teams across the business for review and providing answers to all questions raised

Demand | Last week demand out-turn

ESO National Demand outturn 27 July-02 August 2022



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

ND values **do not include** export on interconnectors or pumping or station load

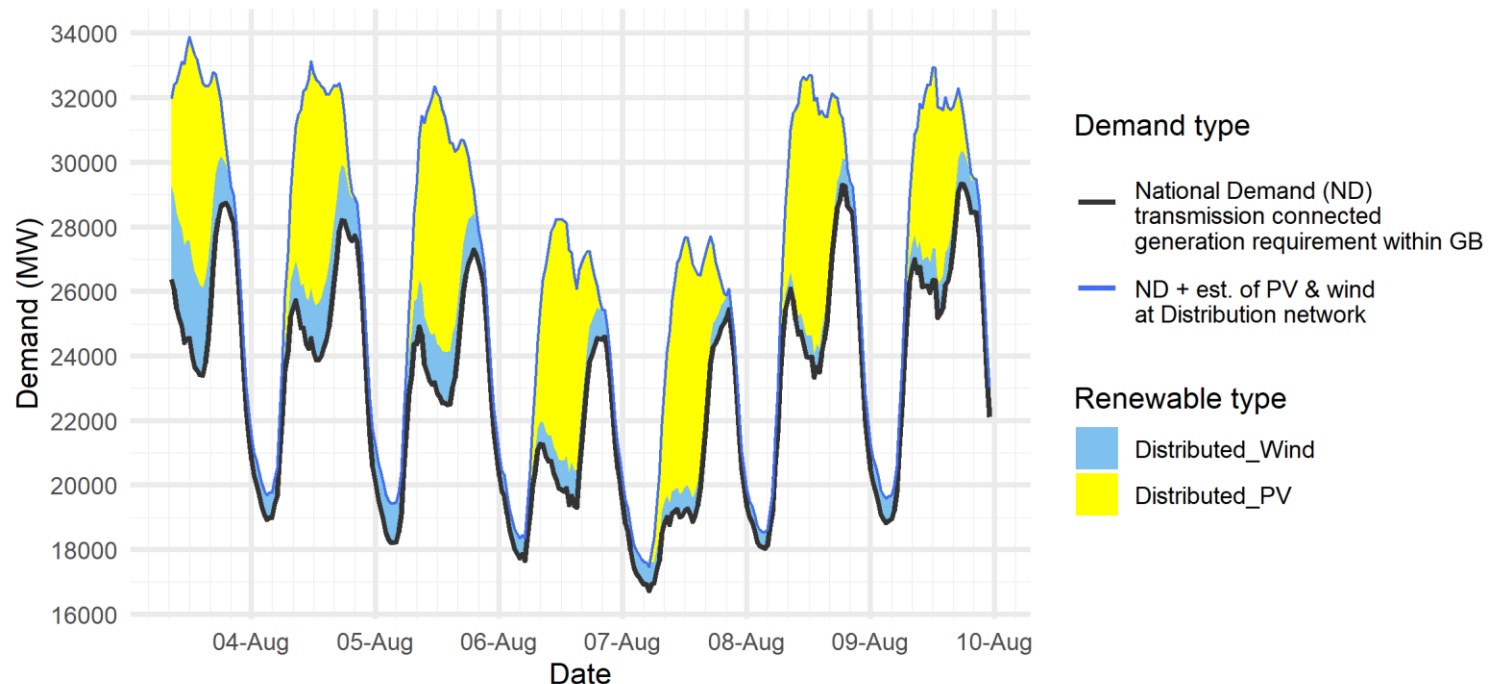
Blue line serves as a proxy for total GB customer demand. It includes demand supplied by the distributed wind and solar sources, but it **does not include** demand supplied by non-weather driven sources at the distributed network for which ESO has no real time data.

Historic out-turn data can be found on the [ESO Data Portal](#) in the following data sets: [Historic Demand Data](#) & [Demand Data Update](#)

Date	Forecasting Point	FORECAST (Wed 27 Jul)			OUTTURN		
		National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
27 Jul	Afternoon Min	26.4	0.5	4.2	25.6	0.4	4.8
28 Jul	Overnight Min	19.1	0.5	0.0	18.7	0.5	0.0
28 Jul	Afternoon Min	26.4	0.9	4.6	26.3	0.9	4.4
29 Jul	Overnight Min	19.1	0.5	0.0	18.7	0.5	0.0
29 Jul	Afternoon Min	22.8	1.4	7.4	23.3	0.9	7.2
30 Jul	Overnight Min	17.4	1.4	0.0	16.9	1.6	0.0
30 Jul	Afternoon Min	20.5	1.5	4.6	21.5	1.8	3.6
31 Jul	Overnight Min	16.8	0.9	0.1	17.0	1.1	0.0
31 Jul	Afternoon Min	20.2	1.6	5.0	21.5	1.3	5.3
01 Aug	Overnight Min	17.9	0.8	0.0	18.2	0.3	0.0
01 Aug	Afternoon Min	24.9	1.0	5.9	23.2	1.2	7.5
02 Aug	Overnight Min	18.7	0.8	0.0	17.1	2.6	0.0
02 Aug	Afternoon Min	25.4	1.2	5.7	24.9	3.8	4.3

Demand | Week Ahead

ESO Demand forecast for 03-09 August 2022



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

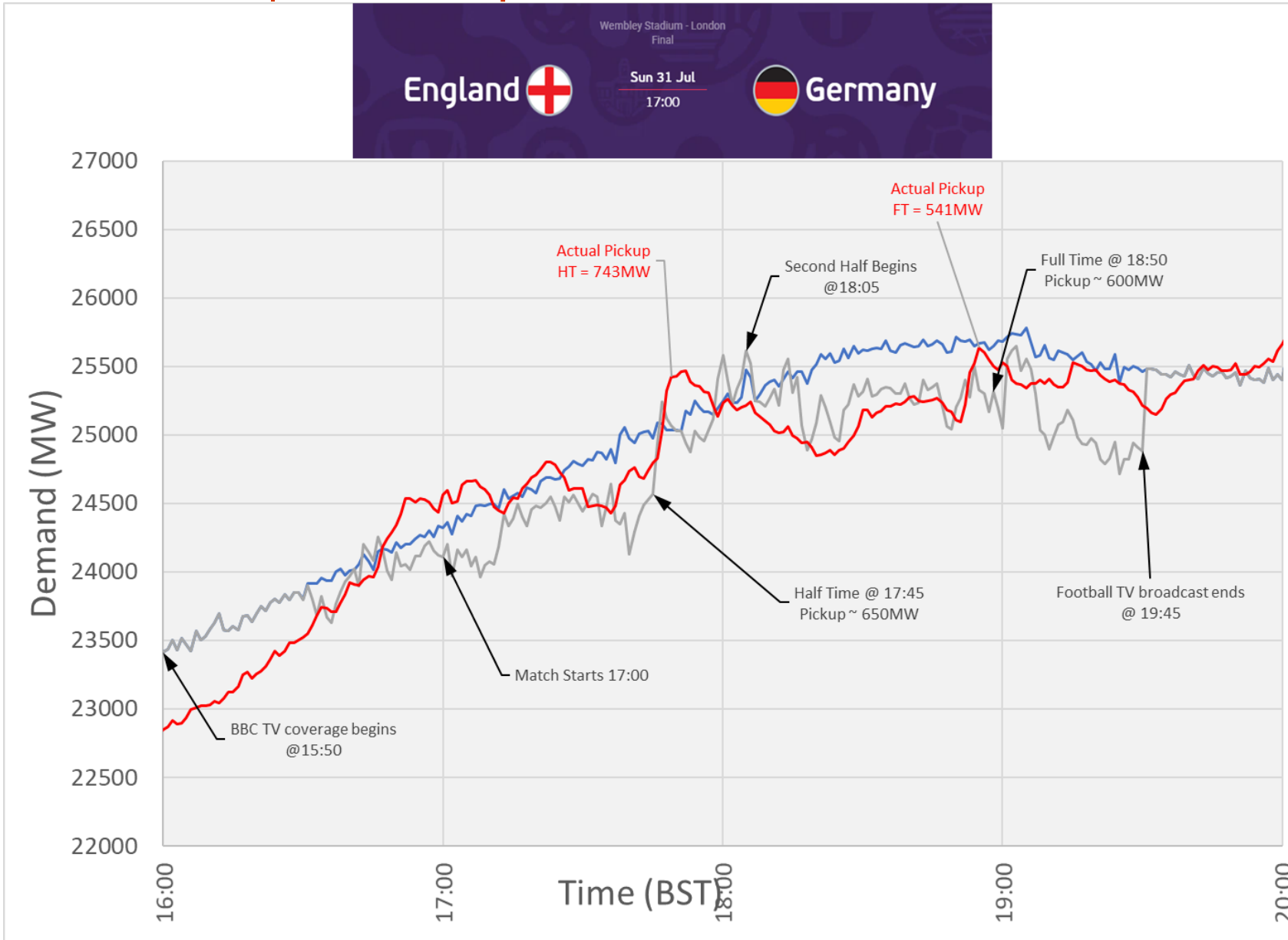
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		FORECAST (Wed 03 Aug)		
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
03 Aug	Afternoon Min	23.4	2.7	6.3
04 Aug	Overnight Min	18.9	0.8	0.0
04 Aug	Afternoon Min	23.9	1.7	7.0
05 Aug	Overnight Min	18.2	1.2	0.0
05 Aug	Afternoon Min	22.5	1.6	6.9
06 Aug	Overnight Min	17.7	0.6	0.1
06 Aug	Afternoon Min	19.3	1.1	5.6
07 Aug	Overnight Min	16.7	0.7	0.1
07 Aug	Afternoon Min	18.9	0.7	7.2
08 Aug	Overnight Min	18.0	0.5	0.0
08 Aug	Afternoon Min	23.3	0.7	7.9
09 Aug	Overnight Min	18.8	0.8	0.0
09 Aug	Afternoon Min	25.2	1.0	5.5

Demand | TV Pickup

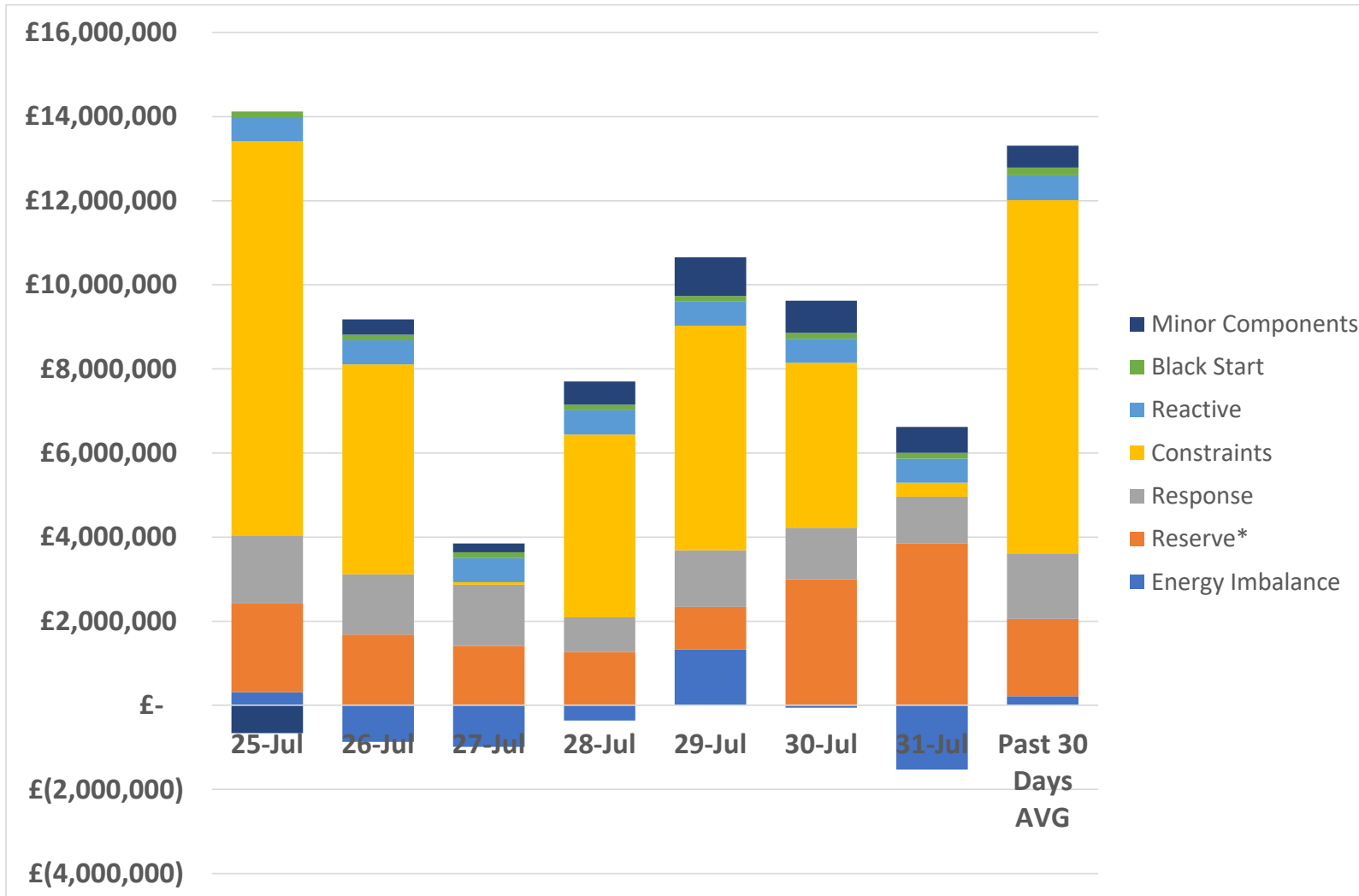


Blue line = Normal demand for a Sunday according to the demand forecast produced on Saturday afternoon and normal demand perturbations on a minute by minute basis.

Grey Line = Demand forecast for the Women's Euro Final England V Germany.

Red Line = Actual GB demand data from the final.

ESO Actions | Category costs breakdown for the last week



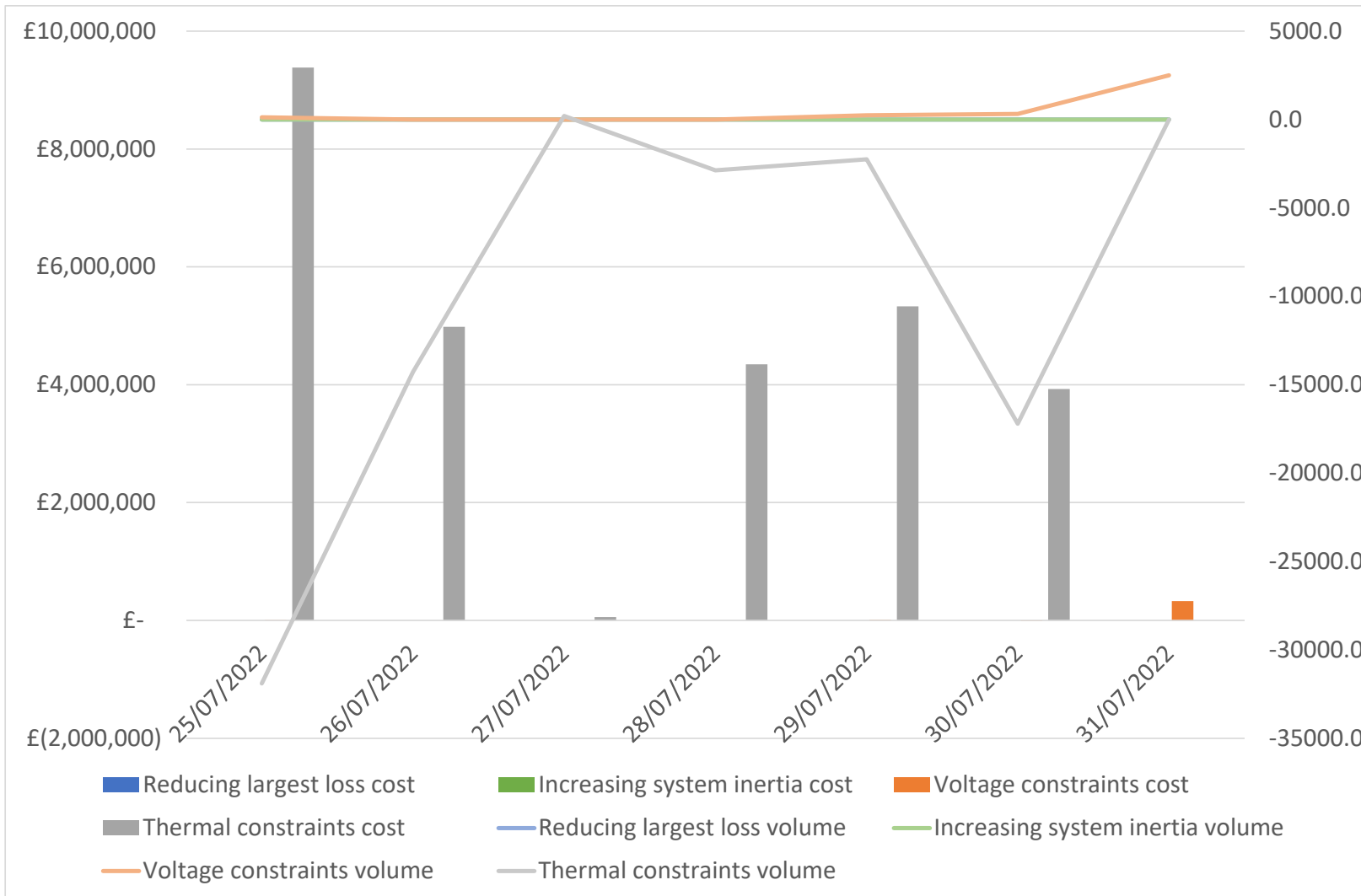
Date	Total (£m)
25/07/2022	13.5
26/07/2022	8.3
27/07/2022	2.9
28/07/2022	7.3
29/07/2022	10.7
30/07/2022	9.6
31/07/2022	5.1
Weekly Total	57.3

Constraint category was the key cost component throughout the week, except Saturday and Sunday when Reserve was the predominant cost.

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

Past 30 Days Average is displayed in the chart

ESO Actions | Constraint Cost Breakdown



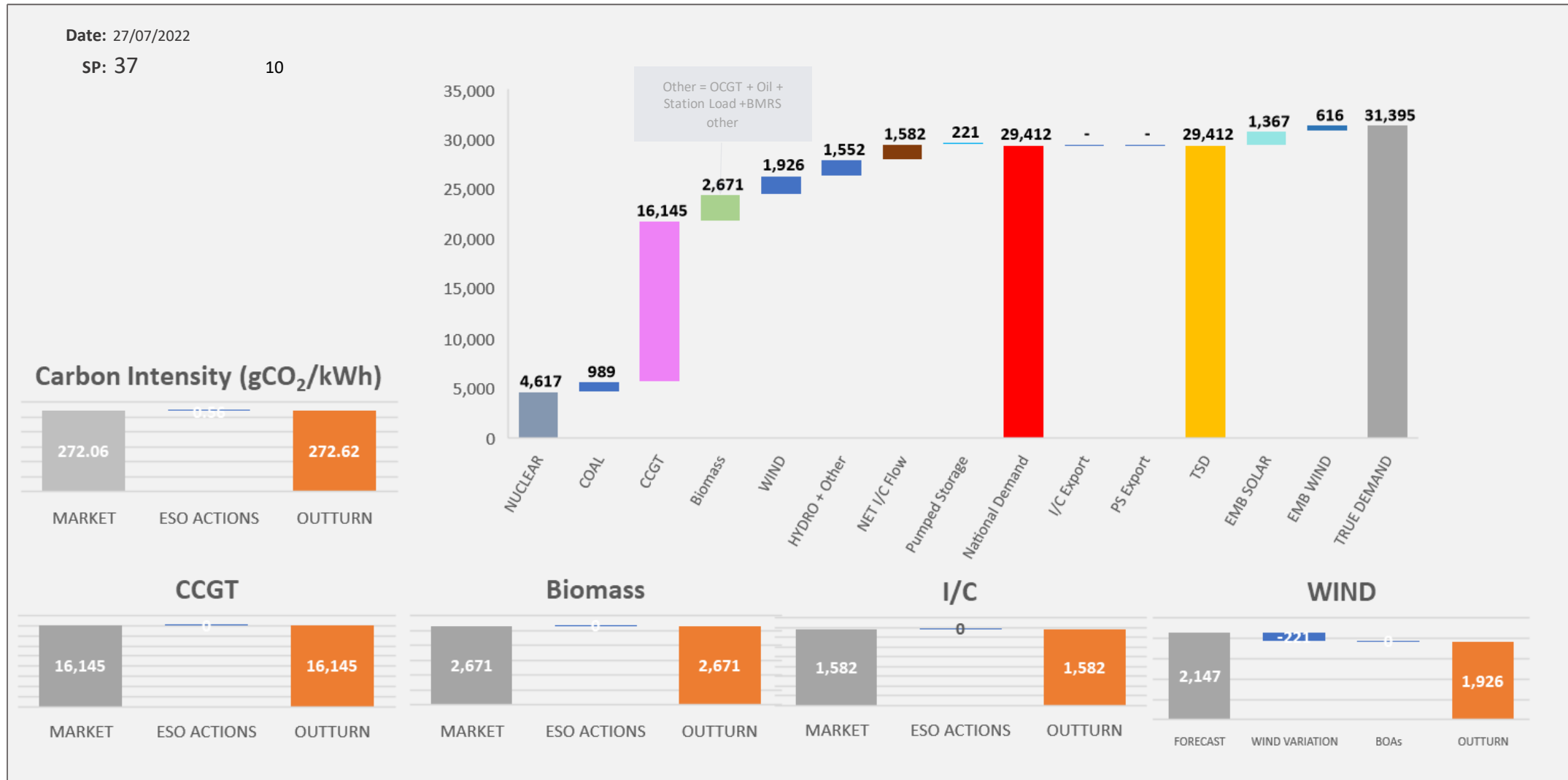
Thermal – network congestion
 Actions required to manage Thermal Constraints throughout the week

Voltage
 Intervention to manage the voltage levels on Sunday.

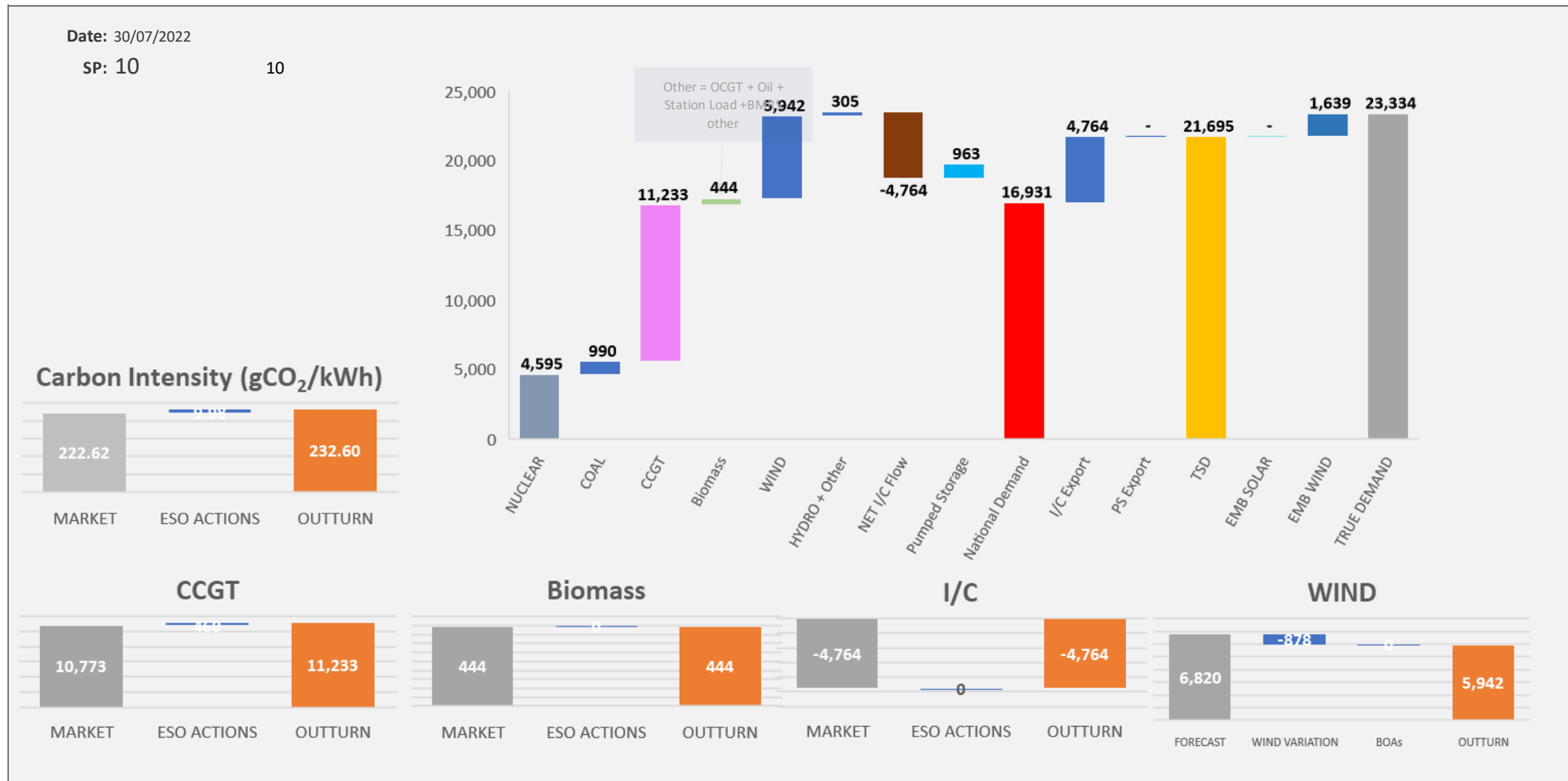
Managing largest loss for RoCoF
 No Intervention required to manage largest loss

Increasing inertia
 No Intervention required to manage Inertia

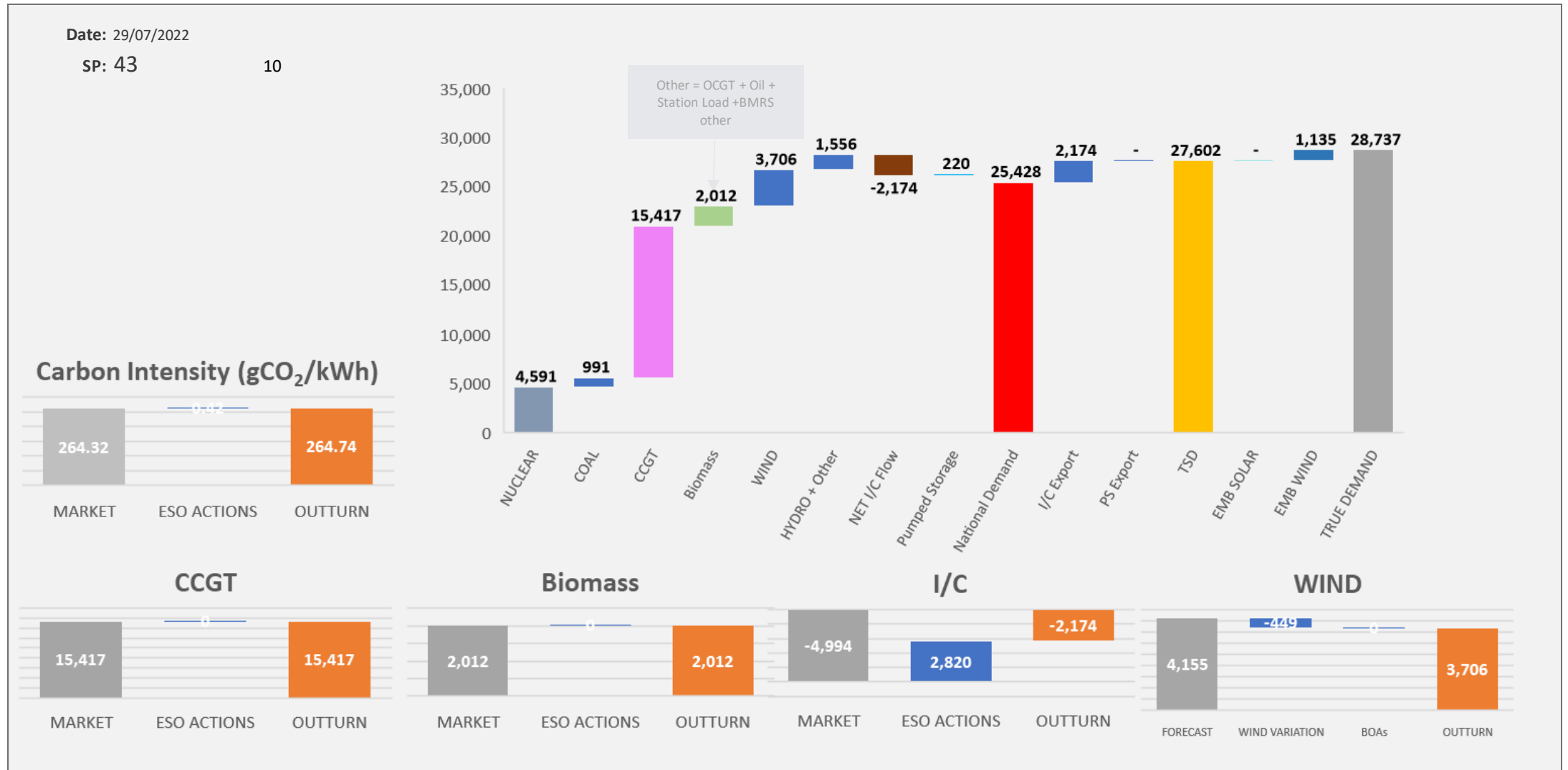
ESO Actions | Wednesday 27 July – Peak Demand – SP spend ~£67k



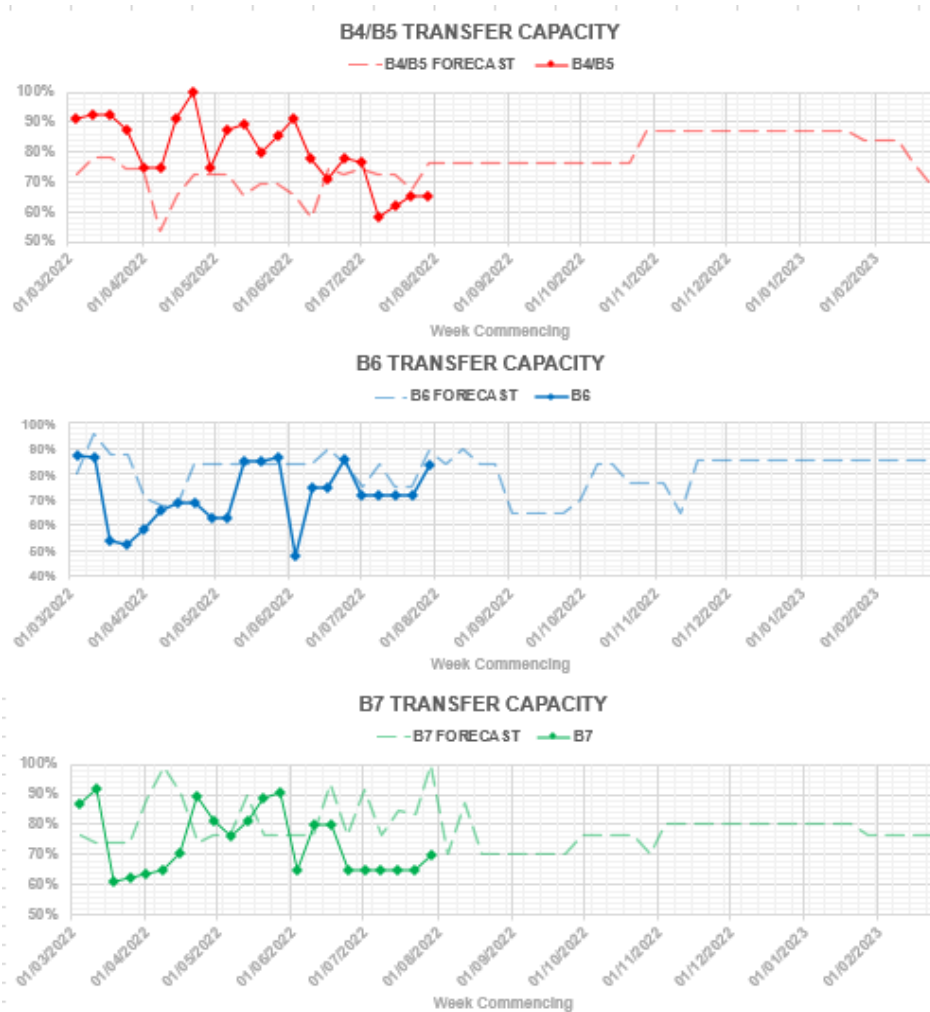
ESO Actions | Saturday 30 July – Minimum Demand – SP Spend £300k



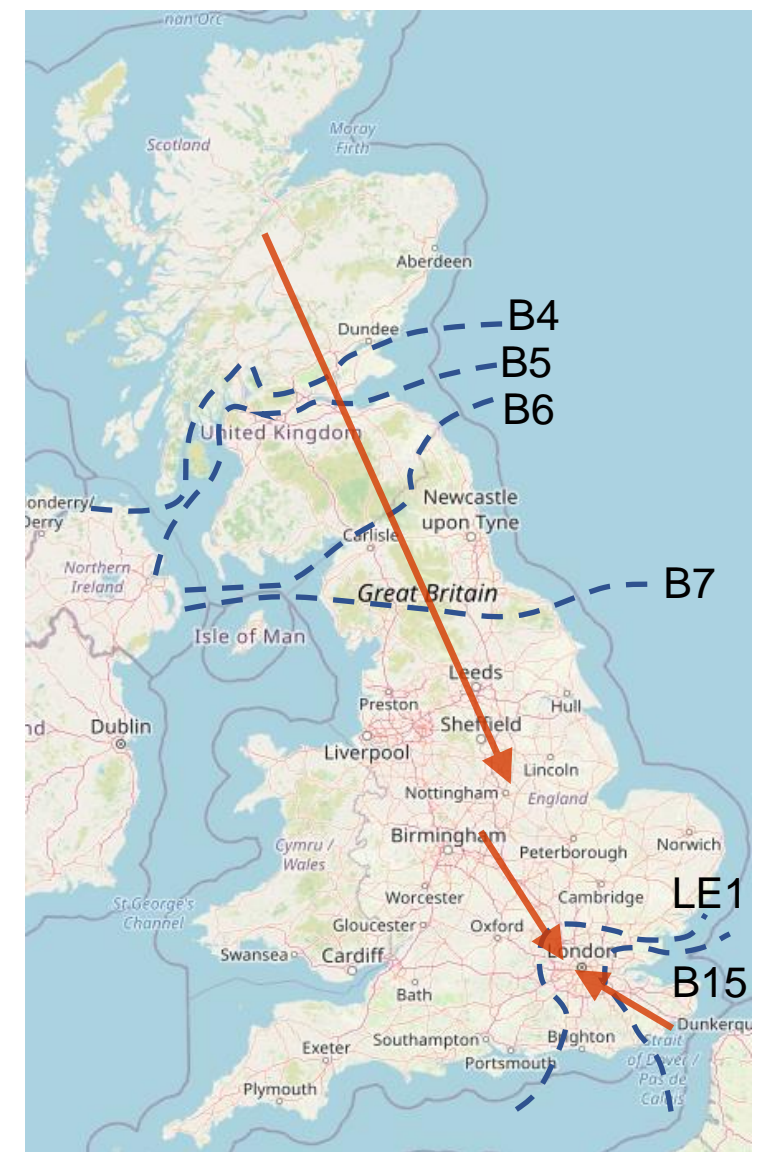
ESO Actions | Friday 25 July - Highest SP Spend ~£500k



Transparency | Network Congestion

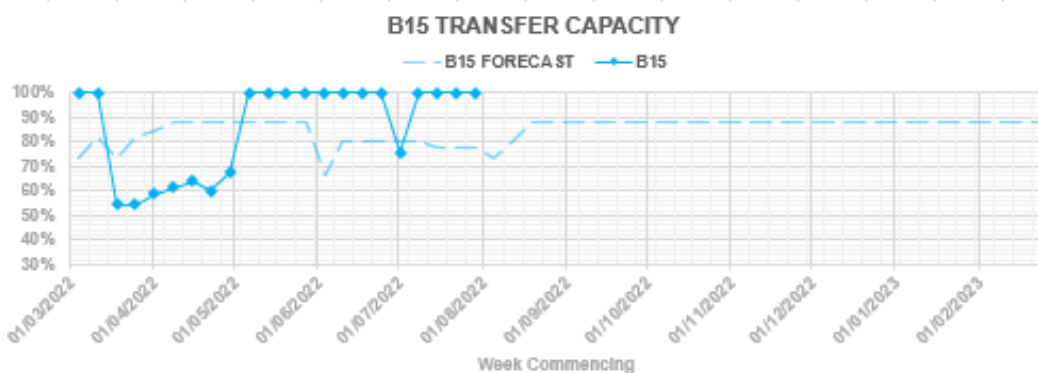


Boundary	Max. Capacity (MW)
B4/B5	2750
B6	5600
B7	8400
LE1	7000
B15	7500

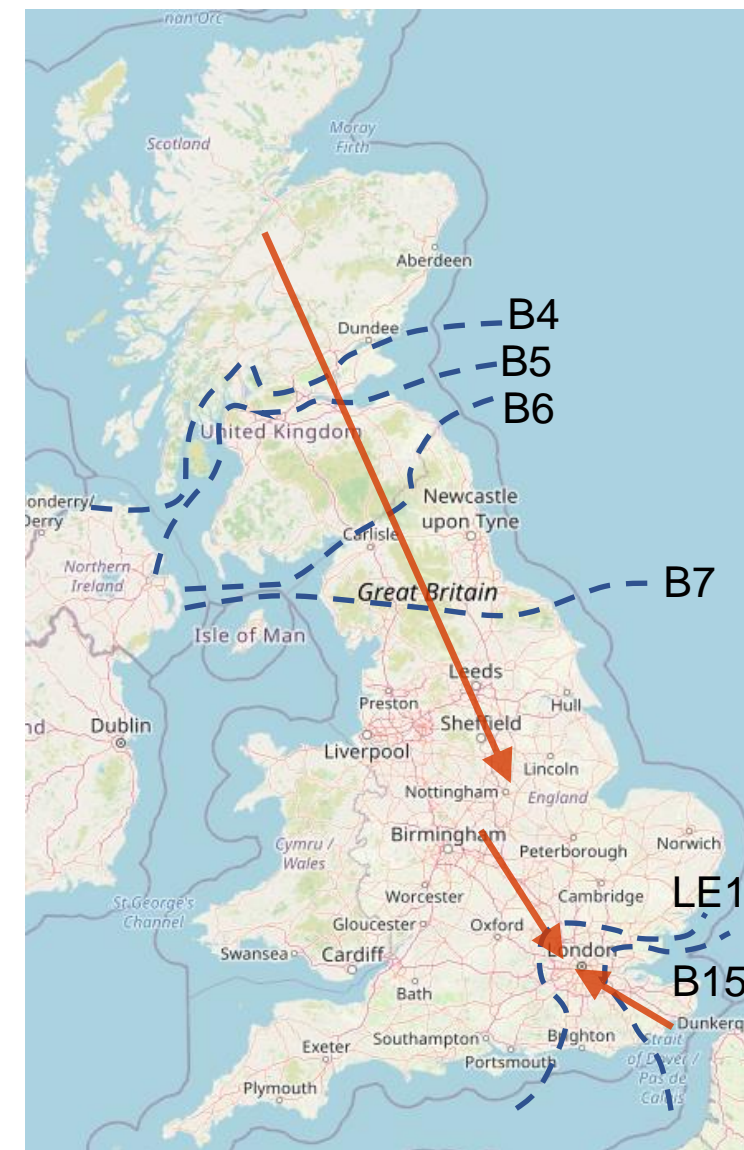


Day ahead flows and limits, and the 24 month constraint limit forecast are published on the ESO Data Portal: <https://data.nationalgrideso.com/data-groups/constraint-management>

Transparency | Network Congestion



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Deep-dive: Demand Control via Voltage Reduction tests

Tests are confidence building measures and performed BAU (with eNAMS booking), ongoing programme

Tests aim to ensure value of demand reduction that we plan to is realistic

Voltage reduction can be used before demand disconnection according to system conditions

Prior to test a system assessment is carried out and then a BMRS message is sent only to raise awareness of imminent voltage reduction test:

National Grid Notification: There will be a short duration localised voltage control test initiated within XX DNO's area, due to commence at hh:mm and it is anticipated demand will reduce by approx. (not greater than 100MVA) and will be fully restored by hh:mm + 30mins

Current assumptions are

- stage 1 voltage reduction 1.5% of DNO demand
- stage 2 voltage reduction following stage 1 a further 1.5% of DNO demand
- stage 1 and 2 voltage reduction 3% of DNO demand

Tests use emergency numbers to ensure as close to operational reality as possible

Once steady we undo the instruction

Results are fed back into model

Deep-dive: Demand Control via Voltage Reduction tests

Key messages to our DNO stakeholders:

Recognise additional workload burden
Reminder can cancel tests for operational reasons
Please respond via emergency number to us (ESO)
Appreciate sharing of data post event (SOFI)

Let us know of any operational difficulties:

That could prevent demand reduction via voltage control
In performing stage 1 *then* stage 2 rather than 1 and 2 together

Let us know of any potential process improvements

Currently voltage instruction limited to entire DNO's area, in future may ask DNOs to consider more generalised voltage reduction across a large (pre-defined) constraint boundary eg LE1 (shown opposite)



Early view of Winter 2022/23 / Key messages

1 Base Case: System margin

Margins are expected to be within the Reliability Standard under normal market conditions

2 Base Case: Operational margins

There may be some tight periods that we expect to be able to manage using our standard operational tools

3 Impact of European gas supply issues

We are taking actions to build our resilience to potential risks and uncertainties due to a possible shortage of gas supply in Europe. This includes extending the life of coal units and exploring market-based demand side response

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Audience Q&A Session

① Start presenting to display the audience questions on this slide.

Feedback

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@nationalgrideso.com

