A landscape photograph featuring snow-capped mountains in the background and a valley in the foreground. Several bright, glowing yellow light trails curve across the valley floor, suggesting a long-exposure shot of a light source moving through the scene. The sky is filled with dramatic, golden-hued clouds, indicating a sunrise or sunset.

ESO Operational Transparency Forum

20 July 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

- Operational Update from the week
- Signpost for Balancing Market Review

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:

Demand control test deep dive – 3rd August

Inertia deep dive – 3rd August

ESO Trading on Interconnectors - September

Items that we have planned for a deep dive

Early view of Winter Operability

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

Record breaking temperatures for the UK

The UK Met Office has issued a red 'Extreme Heat' warning. The Red Extreme heat national severe weather warning covered Monday and Tuesday (18 and 19 July) for parts of central, northern, eastern and southeastern England.

On Tuesday, for the first time on record temperatures in the UK have exceeded 40°C.

A provisional temperature of 40.3°C was recorded at Coningsby at 15:12 yesterday (19 July) which, if confirmed, will beat the previous record of 38.7°C set in 2019 by 1.5°C.

Highest ever temperatures in UK nations



*2022 figures are provisional

Source: Met Office, 19 July 2022 (17:18 BST)

<https://www.bbc.co.uk/news/world-europe-62224157>

BBC

Preparation & Defensive Measures in advance of the Red Weather Warning

- Communication established with onshore Transmission Owners, DNOs and other System Operators
- Additional checks on plant and an increase in scheduled regulating reserve for temperature and to cover STOR shortfall.
- Additional studies (N-2) studies carried out due to a heightened risk of fire under circuit routes.
- Additional control room resources put in place within ENCC.
- Incident management preparation undertaken and key people identified to support it.

Events on Monday 18th July 2022

Events on the Day:

- Tighter than usual margins due to heat (reduced CCGT MELs, increased demand, etc) and a large export to France. Two CMNs issued for 19:00 hours and 20:00 hours (discussed later).
- Cancellation of planned outages and recalling of circuit on outage to maximise available capacity.
- European TSO Liaison to ensure secure system operation and energy balance in GB, Ireland & Northern Ireland, Continental Europe SAs and to support trading strategy.
- Close contact with BEIS & Ofgem throughout the day
- Plant & Interconnection redeclarations due to heat
- Fires with risks to multiple areas, leading to some circuit trips and further system analysis

Events on Tuesday 19th July 2022

Events on the Day:

- At 14:28 an interconnector tripped whilst exporting 1024MW from GB. Frequency rose to 50.308Hz. Frequency returned to operational limits within 4 minutes.
- Several transmission circuit faults in the South-East of GB throughout the afternoon.
- At 19:00 hours Emergency Instruction of 500MW on Continental Interconnector. Reswitch of transmission system undertaken and Emergency Instruction cleared at 21:55.
- At 22:11 an interconnector tripped while exporting 1029 MW from GB. The post-fault frequency was 50.352Hz. Frequency returned to operational limits by 22:15.

Capacity Market Notifications (CMNs) issued on Monday 18th July 2022

Background:

- Tight margins were forecasts due to low wind, Maximum Export Level (MEL) reductions of around 2GW due to very high temperatures and additional contingency reserve being held to cover demand and generation uncertainties.
- Some outages were cancelled or recalled to avoid constraining generation.
- The CMN trigger threshold is +500MW above our total requirement (demand plus reserve) at 4.5 hours ahead.

Notifications issued:

- A CMN was issued at 14:34 for the 19:00 peak. The forecast margin was +494MW: 6MW under the trigger threshold. This was cancelled 30minutes later when the margin improved to +566MW due to a slightly lower reserve requirement.
- A further CMN was issued at 15:34 for 8pm.
- Once a CMN is active, the calculation continues to assess every settlement period in the intervening period (i.e. every period from that moment until 4.5 hours ahead)
- The calculation saw that margin was below the trigger level for some intervening periods which meant the CMN remained active. This is consistent with the low DRM forecasts published for periods 37-40 on BMRS at the 2HA & 1HA stage.
- The CMN was cancelled at 19:51.

Next Steps:

- We are reviewing the precise sequence and timings behind the margins calculations to identify any key learning points.
- The CMNs were not related to the issue that was recently addressed in our Market Operation Data Interface System (MODIS) for which an update was provided at [last weeks OTF](#).

Questions outstanding from previous weeks

Q: On Monday 11th July in SP43, a unit (2_AFLEX004) was downreggged at price of -£9999. Was this a legitimate price?

A: During SP43 the unit's submitted Final Physical Notification (FPN) (14MW) was above its Maximum Export Level (MEL) (13MW). The Control Room sent a Bid Offer Acceptance (BOA) to extend the unit's generation output from SP44 onwards (which you can see on BMRS website). When the BOA was sent, BM SORT automatically capped the BOA to the unit's MEL (13MW).

For SP43 the unit did not offer any available bid/offer volume in the BM; this is shown by the unit's submitted Bid Offer Pairs (+1 and -1) having '0 MW From' and '0 MW To' levels during SP43 (which is shown on BMRS website). The bid action is a deemed bid, meaning there is no submitted price for the bid volume and therefore there is no cost associated with the bid volume.

Q: NGENSO have confirmed that all Stability Pathfinder contracts in Scotland have been signed in this forum previously, can NGENSO confirm if all participants have paid their LD's/collateral?

A: Unfortunately, contractual confidentiality means we cannot comment on individual contractual agreements.

Questions outstanding from previous weeks

Q: Where can more information be found on BM actions taken where the BMU ID is not published in BMRS datasets?

A: Can you provide more information about the data you believe is it not available on BMRS?

Please note that if a generation or demand unit is not signed up the Balancing Settlement Code, data will not be published on the BMRA. However, any action taken on these units will be through Connection and Use of System Code (CUSC)/connection agreements and would only be taken in Emergency Situations. These are notified to the BMRS and available via the system warning pages on the BMRS. Users may need to sign up for these to get them emailed to you via the Elexon portal.

Q: Given the impact the interconnectors are having on the market, and the fact their flows aren't often published prior to the 12:00 day-ahead DRM being published is the ESO able to delay the initial DRM publication until all IC's have submitted their flows? Or publish an update once they are?

A: We agree that this is a known issue with the margin forecasts from this run and have looked at the possibility of delaying the day-ahead De-rated Margin (DRM) run previously. Given the number of other key IS projects in the pipeline, the industry view at the ELEXON Issue 92 group was that this change was not as high priority as other in-flight changes, so should not displace any other work at this time. We will keep it in mind for future changes. It is unlikely that a change could be made now in time for next winter.

Questions outstanding from previous weeks

Q: Is there any coordination with TSOs (RTE, Elia, Tennet) regarding interconnectors requirements (reverting day ahead flows in intraday)? If yes, could you provide us an example? What if a TSO says no?

A: We regularly communicate with the TSOs that we are connected to in various lead times from season ahead down to intraday about our forecasts and system issues. We cooperate with our neighbouring TSOs where we can to ensure neither party jeopardises the others system security. More detailed conversations may need to be had between TSOs when system conditions are tight.

Q: Unflagged I/C BSAD's say 'margin' so are NGENSO backing off expensive I/C's to keep cheaper UK plant for reserve?

A: Margin trades are expected to make reserve energy available to the BM. We aim for the reserve trades to be at a lower total cost than the alternative BM actions. Sometimes this means paying a higher price short time, to displace a longer 'run' on a unit in the BM. If there is further detail wanted on this, if there is an example that you have a query for we can look into specific examples.

Q: When is this deep dive about the NG IC trades going to be?

A: We'll take the requirement for a deep dive back to the relevant ESO teams today and will communicate at a future forum the deep dive date. In September we will offer a deep dive on trading and will come back during August with the proposed high level of what we will cover to check that is what is being looked for.

Questions outstanding from previous weeks

Q: What information can be found out about PGBTs? There is a growing volume and costs associated to PGBTs over recent weeks.

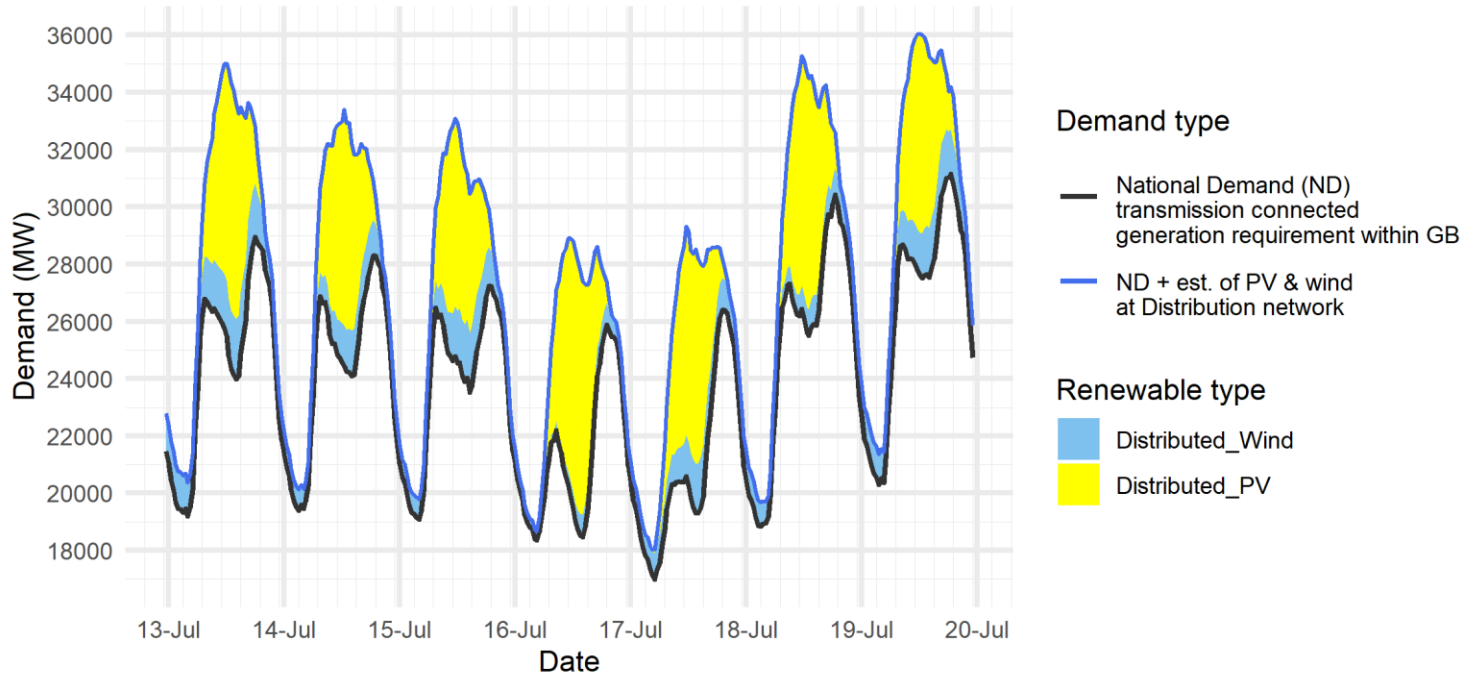
A: We no longer carry out Pre Gate Balancing Mechanism Unit Transactions (PGBTs). However if you can give us an example (date, Settlement Period, and unit) we can investigate as these may be day ahead trades.

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?

A: Can you please confirm if you are interested in TSO-TSO trades with NEMO (IC with Belgium) or SONI (Electricity Market Operator for Ireland)?

Demand | Last week demand out-turn

ESO National Demand outturn 13-19 July 2022



Date	Forecasting Point	FORECAST (Wed 13 Jul)			OUTTURN		
		National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
13 Jul	Afternoon Min	25.0	2.1	6.7	24.0	2.1	7.5
14 Jul	Overnight Min	19.6	0.8	0.0	19.4	0.7	0.0
14 Jul	Afternoon Min	24.1	1.8	6.9	24.1	1.6	6.5
15 Jul	Overnight Min	19.1	0.7	0.1	19.1	0.7	0.0
15 Jul	Afternoon Min	24.2	1.4	5.5	23.5	2.1	4.9
16 Jul	Overnight Min	18.0	0.3	0.3	18.3	0.3	0.0
16 Jul	Afternoon Min	18.8	0.5	7.6	18.5	0.8	8.1
17 Jul	Overnight Min	16.9	0.7	0.3	17.0	0.9	0.1
17 Jul	Afternoon Min	19.0	1.1	7.3	19.3	1.8	7.1
18 Jul	Overnight Min	17.9	1.2	0.0	18.8	0.8	0.0
18 Jul	Afternoon Min	24.5	1.5	8.1	25.5	0.9	8.1
19 Jul	Overnight Min	20.1	1.0	0.0	20.3	1.1	0.0
19 Jul	Afternoon Min	27.2	1.3	5.8	27.5	1.6	6.9

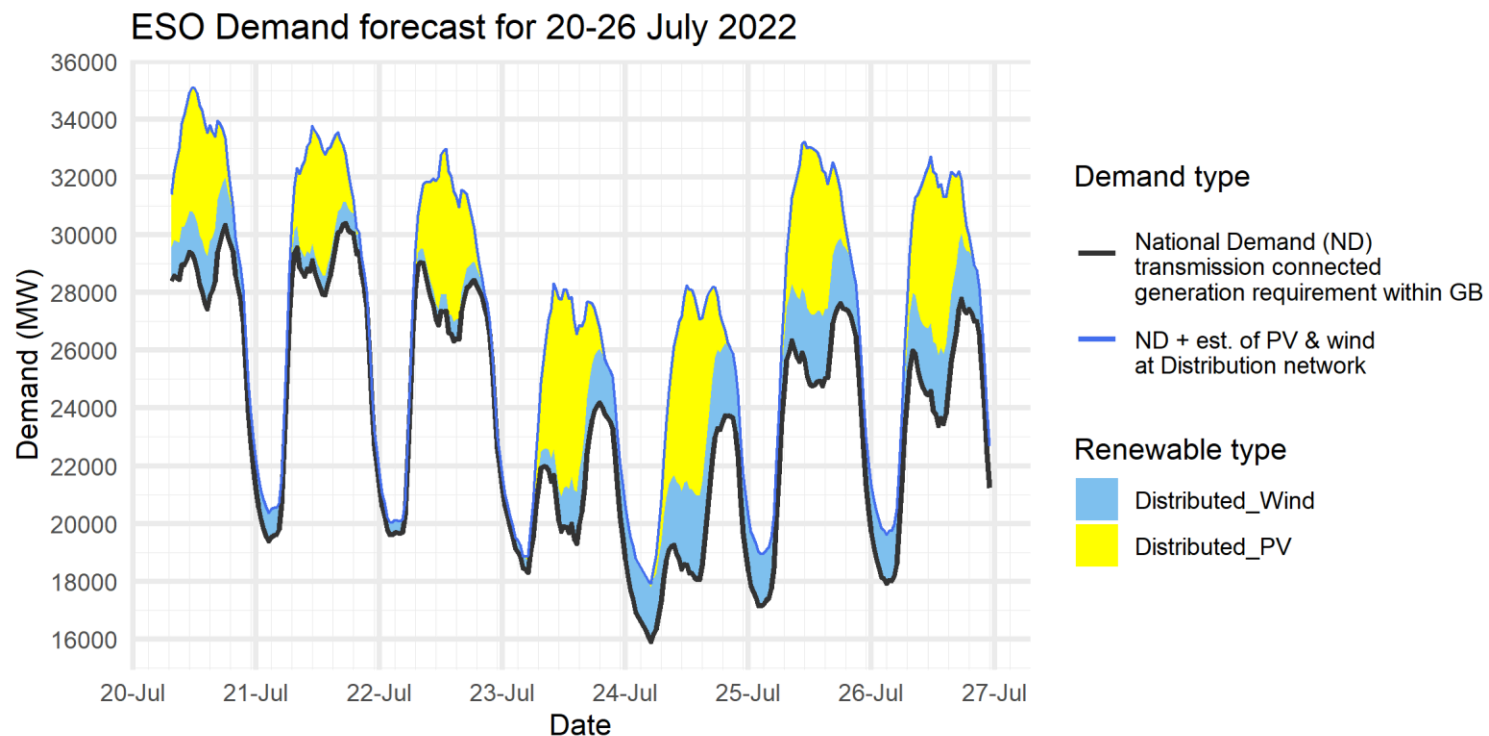
The black line (National Demand ND) is the measure of portion of total GB customer demand that is supplied by the transmission network.

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 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](#)

Demand | Week Ahead



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

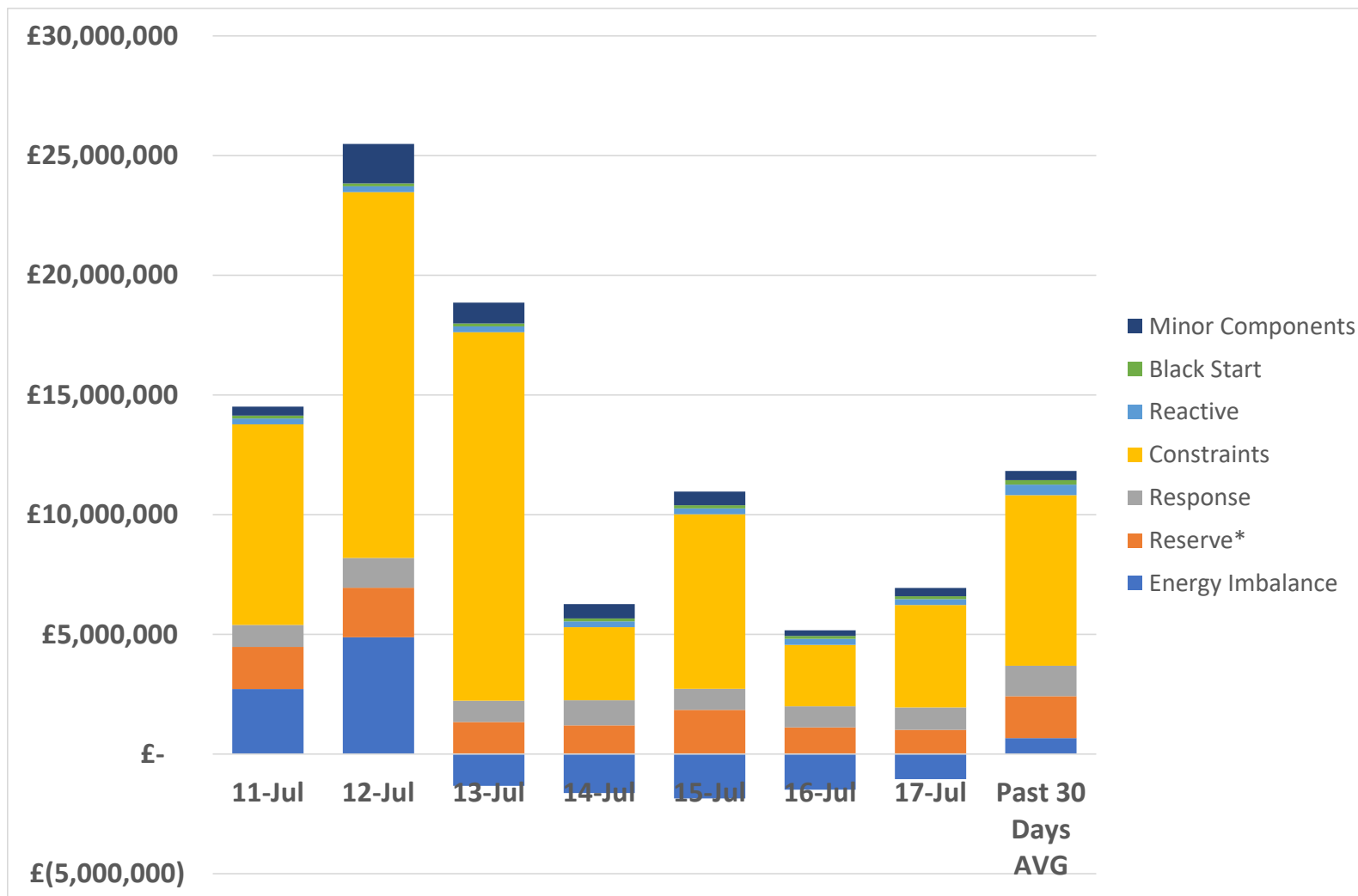
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Date	Forecasting Point	FORECAST (Wed 20 Jul)		
		National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
20 Jul 2022	Afternoon Min	27.4	1.9	4.3
21 Jul 2022	Overnight Min	19.4	1.0	0.0
21 Jul 2022	Afternoon Min	27.9	0.7	4.2
22 Jul 2022	Overnight Min	19.6	0.4	0.0
22 Jul 2022	Afternoon Min	26.3	0.7	4.5
23 Jul 2022	Overnight Min	18.3	0.4	0.2
23 Jul 2022	Afternoon Min	19.3	1.8	5.4
24 Jul 2022	Overnight Min	15.9	1.9	0.1
24 Jul 2022	Afternoon Min	18.1	2.9	6.5
25 Jul 2022	Overnight Min	17.1	1.8	0.0
25 Jul 2022	Afternoon Min	24.8	2.4	5.0
26 Jul 2022	Overnight Min	17.9	1.7	0.0
26 Jul 2022	Afternoon Min	23.4	2.4	5.8

ESO Actions | Category costs breakdown for the last week



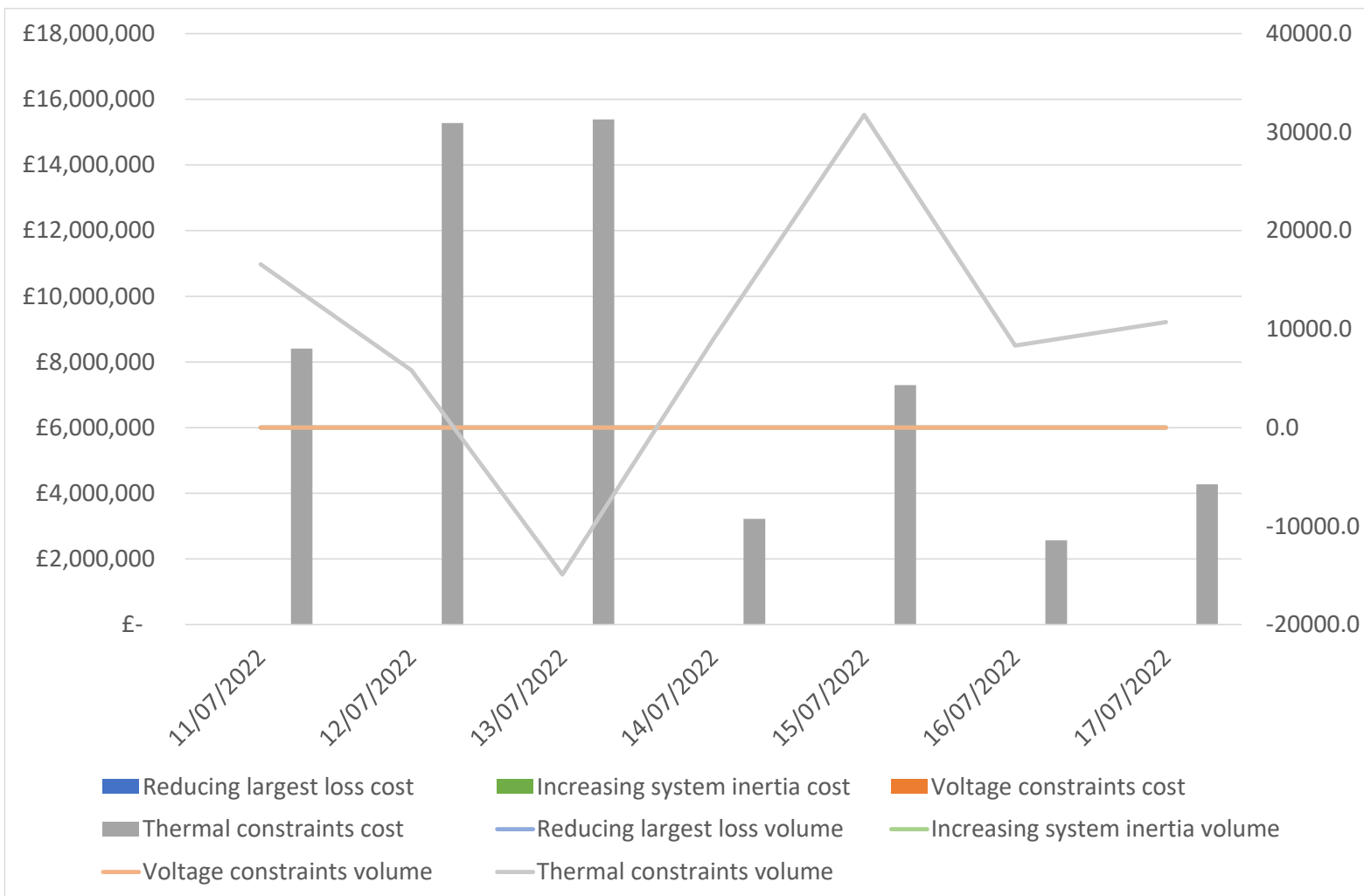
Date	Total (£m)
11/07/2022	14.5
12/07/2022	25.5
13/07/2022	17.5
14/07/2022	4.6
15/07/2022	9.1
16/07/2022	3.7
17/07/2022	5.9
Weekly Total	80.8

Constraint category was the key cost component throughout the week.

*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



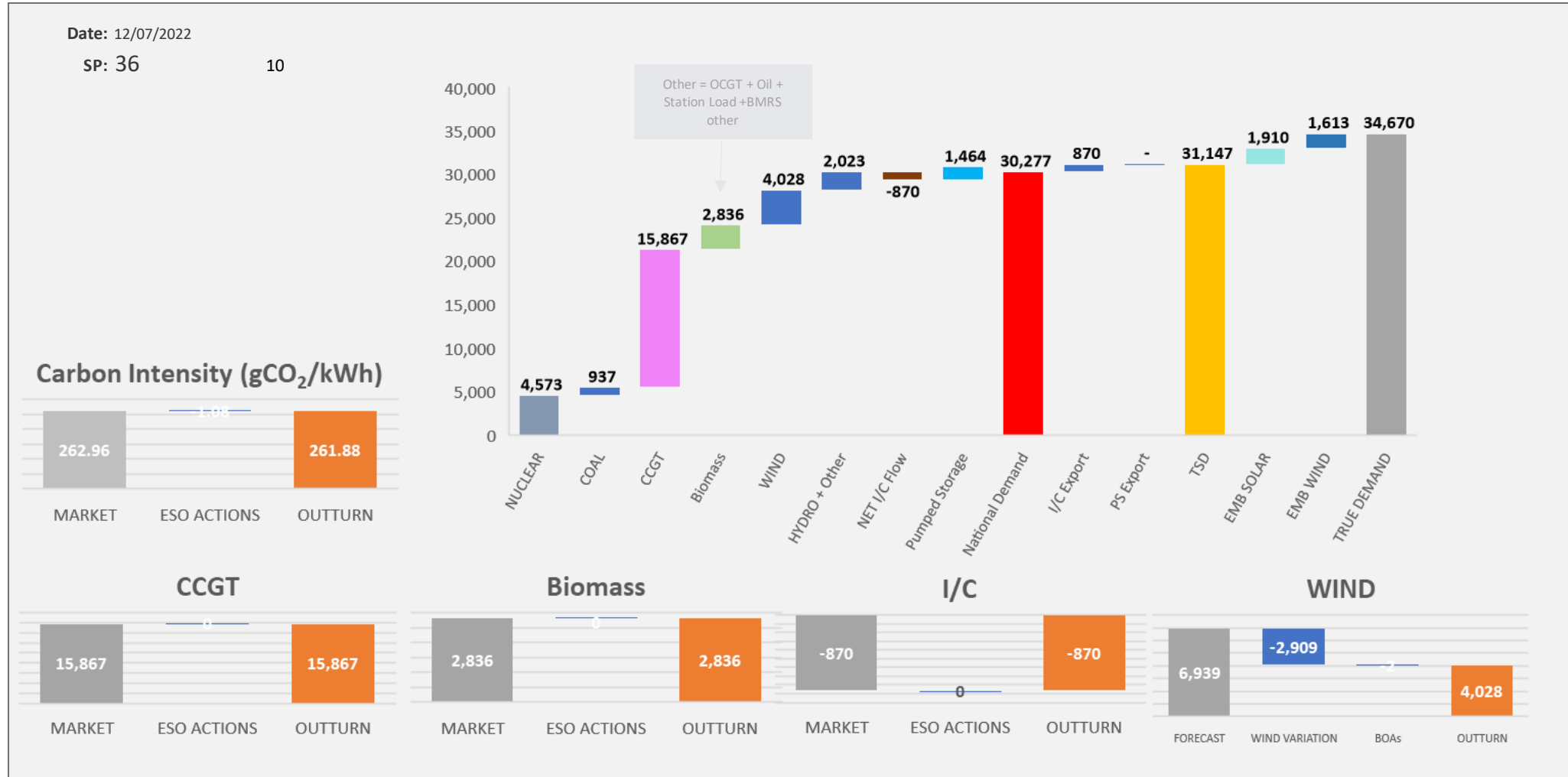
Thermal – network congestion
 Actions required to manage Thermal Constraints throughout the week

Voltage
 No extra Actions taken

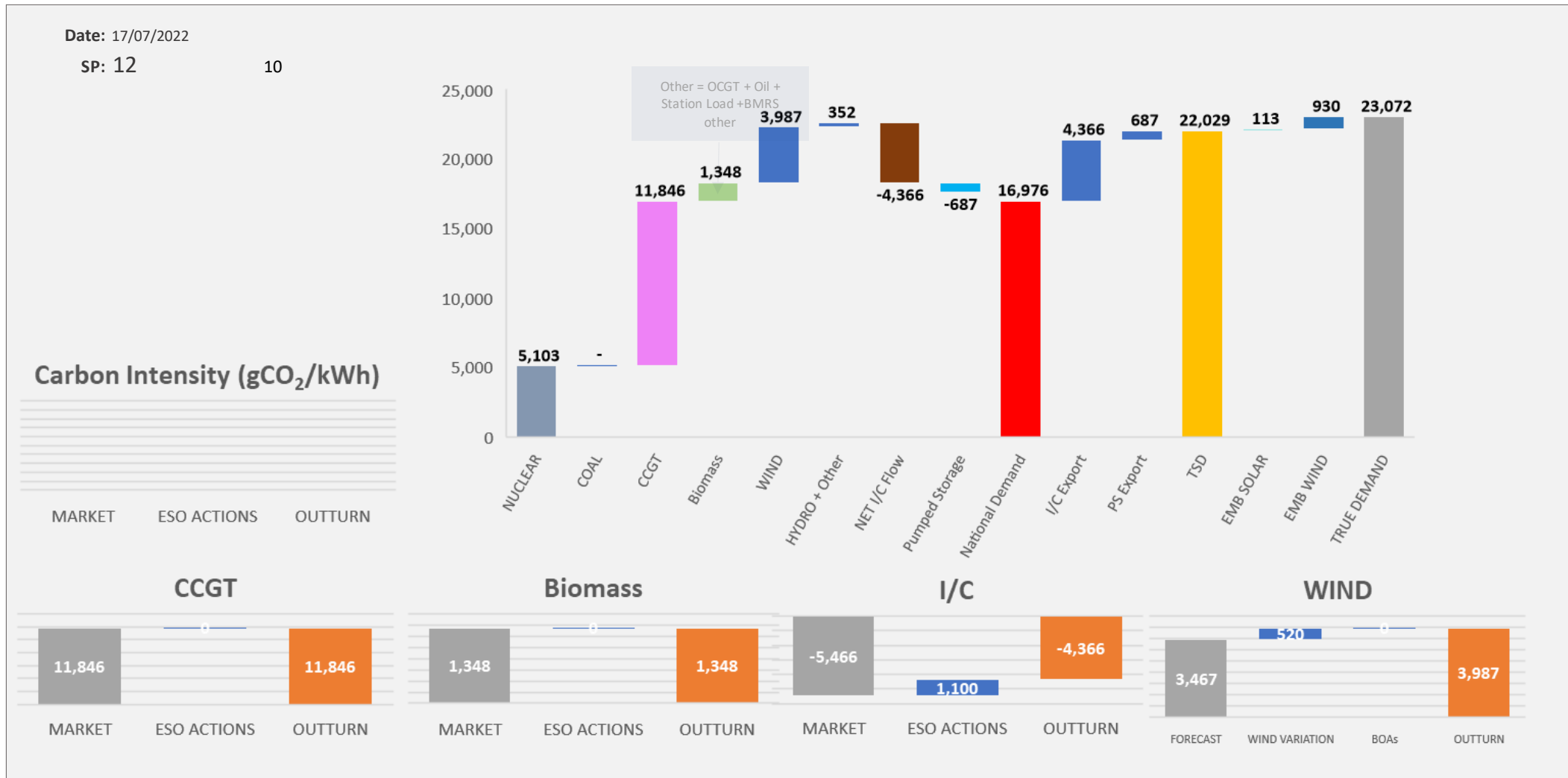
Managing largest loss for RoCoF
 No Intervention required to manage largest loss

Increasing inertia
 No Intervention required to manage Inertia

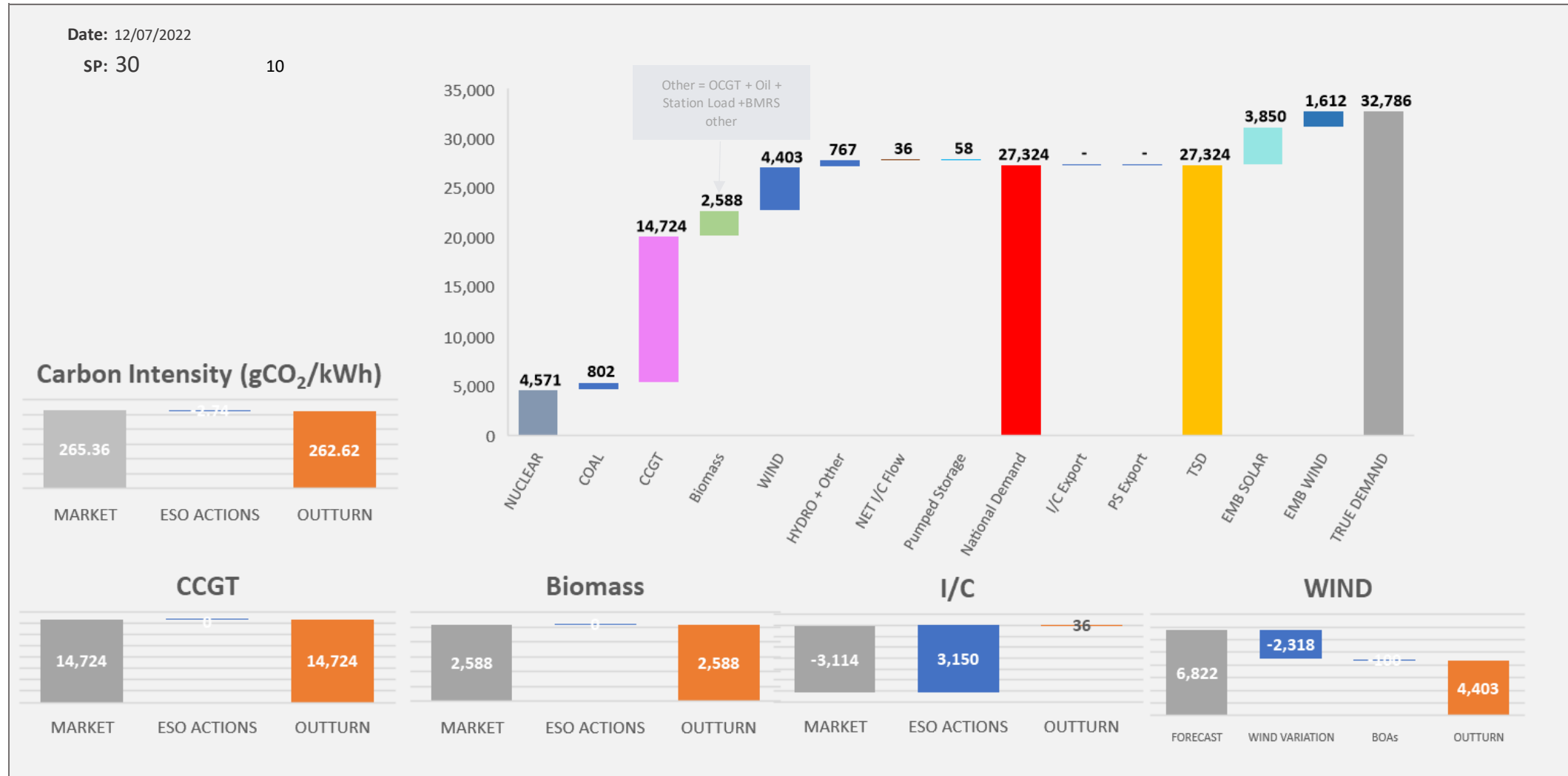
ESO Actions | Tuesday 12 July – Peak Demand



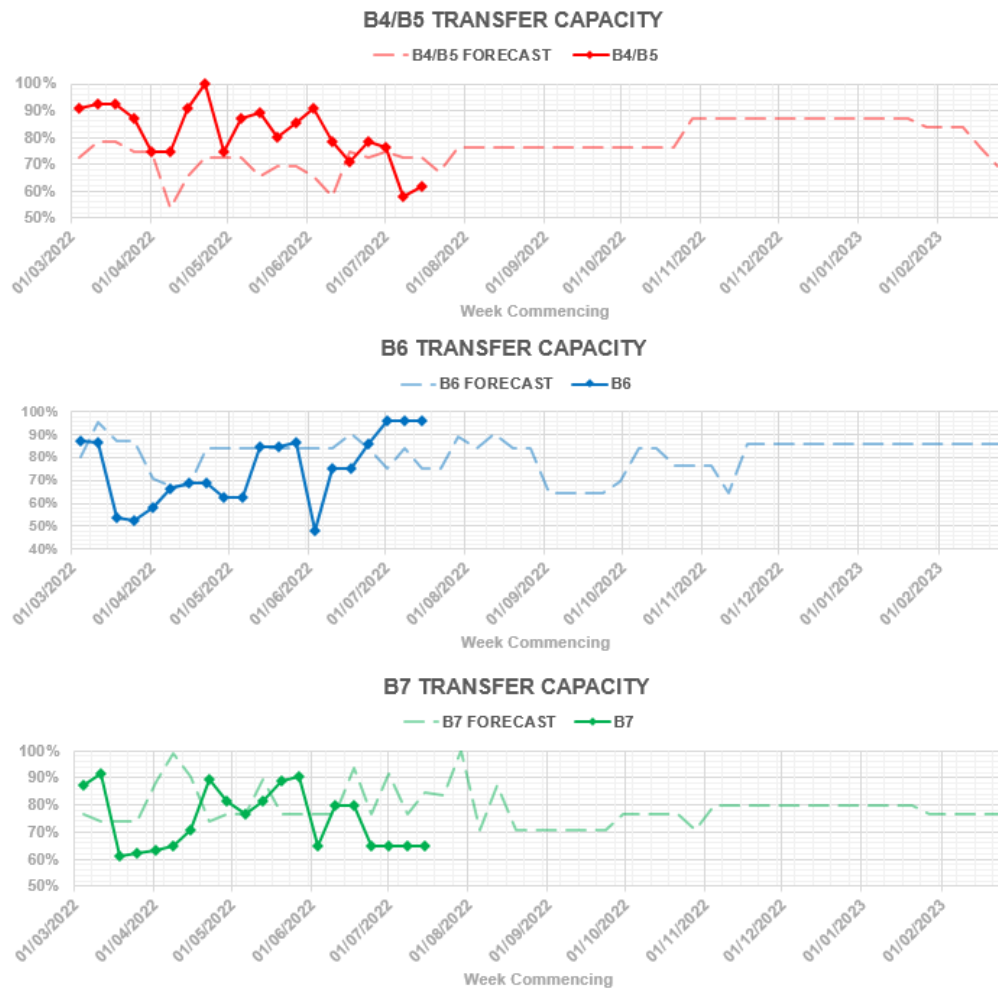
ESO Actions | Sunday 17 July – Minimum Demand



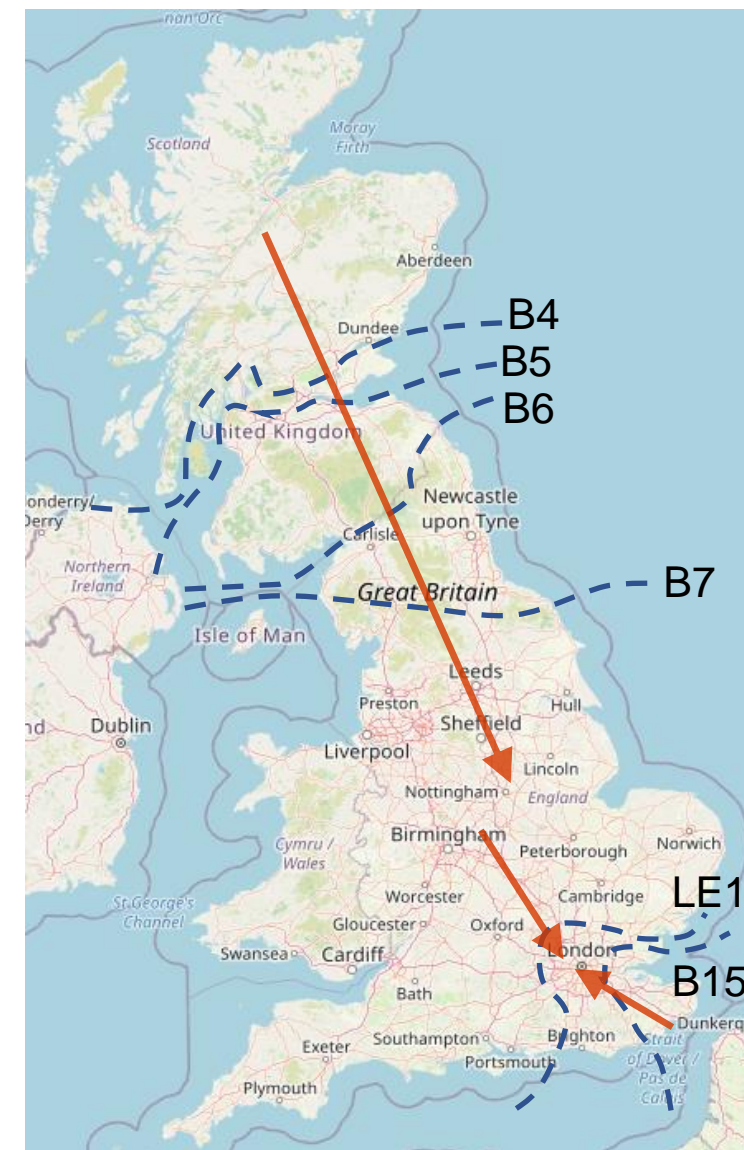
ESO Actions | Wednesday 12 July - Highest SP Spend ~£0.86m



Transparency | Network Congestion

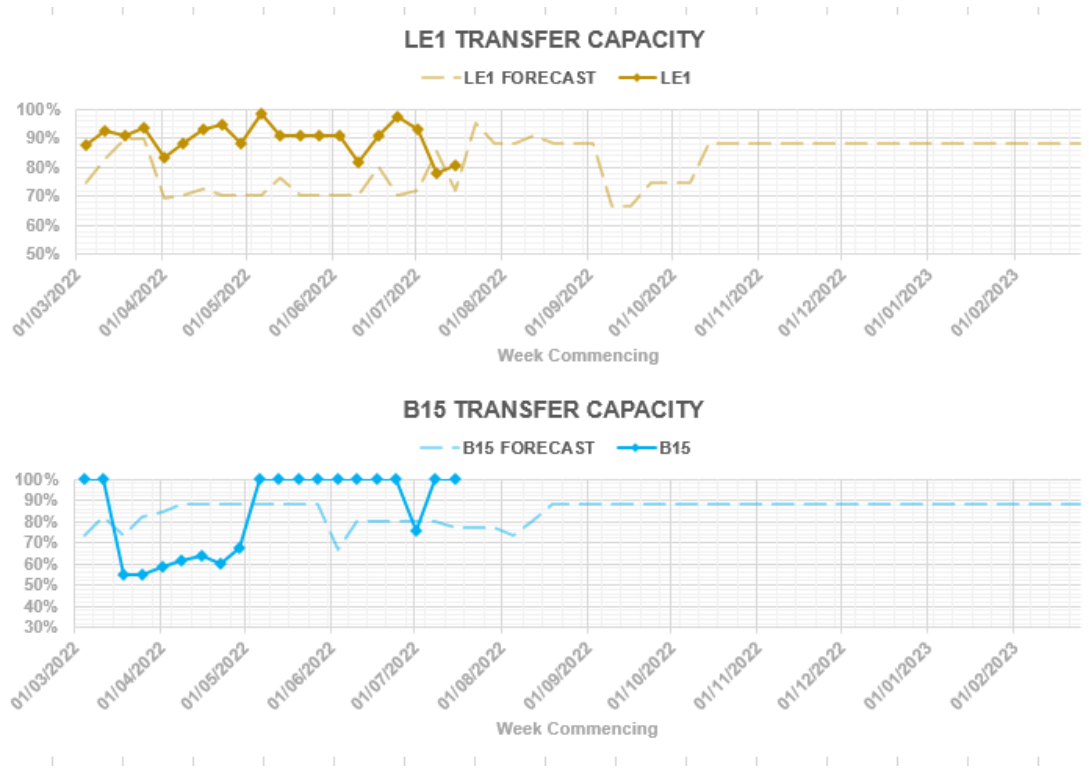


Boundary	Max. Capacity (MW)
B4/B5	2750
B6	5600
B7	8400
LE1	7000
B15	7500

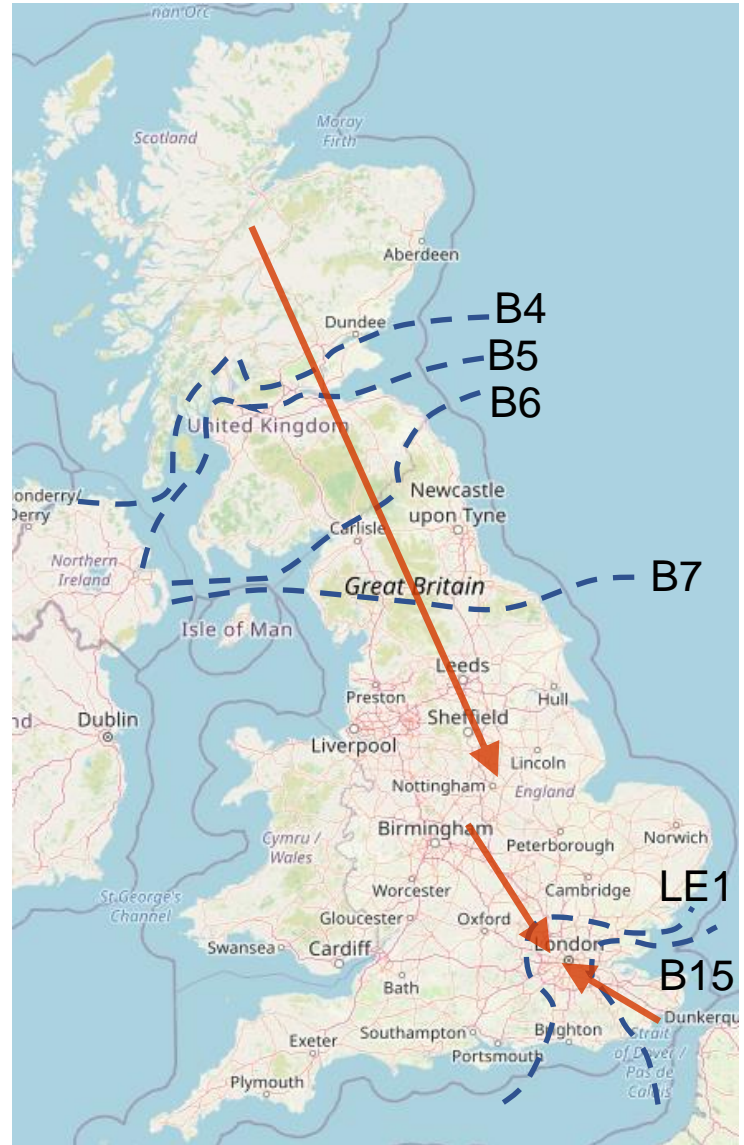


Day ahead flows and limits, and the 24 month constraint limit forecast are published on the ESO Data Portal: <https://data.nationalgrideso.com/data-groups/constraint-management>

Transparency | Network Congestion



Boundary	Max. Capacity (MW)
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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>

Balancing Market Review | Published

The final findings report from the Balancing Market Review alongside ESO's response was published on the 15th July.

To view the reports, please follow the link: <https://www.nationalgrideso.com/research-publications/eso-balancing-market-review-2022>

OFGEM have published their response to the report which can be found here: [Microsoft Word - Open Letter on Winter 21 Balancing Costs \(ofgem.gov.uk\)](#)

If you have any questions regarding the balancing market review, please contact MarketReporting@nationalgrideso.com

slido



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

