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NESO Operational Transparency Forum

08 January 2025





Introduction | Sli.do code #OTF

Slido 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: <u>marketreporting@nationalenergyso.com</u>
- 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: <u>https://forms.office.com/r/k0AEfKnai3</u>
- 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: <u>https://www.neso.energy/what-we-do/systems-operations/operational-transparency-forum</u> (OTF Q&A is published with slide packs)



Electricity Margin Notification for today, 08 January Slido code #OTF

An electricity margin notice (EMN) has been issued to the market.

Our forecasts are showing tight margins on the electricity system for today between 16:00-19:00.

This is a routine tool that we use most winters, and means we are asking market participants to make any additional generation capacity they may have available.

The EMN does not mean electricity supply is at risk.

We will not be discussing this ongoing operational matter at todays OTF – if you do have any questions, we will be taking these away from todays session and will include in a deep dive next week.

System Warnings are published on Elexon's Insights Solution: <u>Events | Insights Solution</u>



Future deep dive / focus topics

Slido code #OTF

Today's focus topic

Update on recent questions about Balancing Service Adjustment Data (BSAD) data and related issues

Future

Overview of 8 January Operational activity – 15 January OTF survey launch – tell us what you think – 15 January Initial National Demand Outturn – 22 January 120 GVA.s Minimum Inertia System Review – 29 January

If you have suggestions for future deep dives or focus topics, please send them to us at: box.nc.customer@nationalenergyso.com and we will consider including them in a future forum





NESO Transparency Roadmap 2024-25

Slido code #OTF

We publish our updated Transparency Roadmap every six months to provide a high-level view of NESO activities and publications that provide transparency to our stakeholders. The latest update was published in December 2024 and can be found from our Systems Operations webpage at:

https://www.neso.energy/what-we-do/systems-operations

Or opened directly at: NESO Transparency Roadmap 2024-25

If you have any questions about the roadmap content, please contact: <u>box.nc.customer@nationalenergyso.com</u>



December 2024

BSUoS Fixed Tariff 6

National Energy System Operator

October 2025-March 2026

BSUoS Fixed Tariff 6 Published

- On 20 December we published BSUoS Fixed Tariff 6.
 <u>Download Tariff Document</u>
- We are holding a webinar on 15 January at 1pm to talk through the tariffs and answer any questions from industry. <u>Sign up for the webinar</u>
- Each week we publish a report that shows BSUoS Revenue recovery v Costs and forecasts future positions.
 <u>Download the latest report</u>
- We issue comms to industry each time we publish tariffs. Sign up to our mailing list here
- For any BSUoS related questions please email us. <u>BSUoS.queries@nationalenergyso.com</u>







Join us for the Response Reform webinar on **22 January 3pm – 4:30pm**

As a follow on from the October 2024 Future of Mandatory Frequency Response (MFR) Webinar, the Response Reform Team presents current thinking on:

- Dynamic Services reform including closer to real time procurement
- Dynamic Response Consultation (launch February 2025)
- Future of MFR
- Future of Static Response

Sign up <u>here</u>.



Future Event Summary



Event	Date & Time	Link
Slow Reserve Industry Feedback	By 15 January 2025	<u>Complete the feedback</u> <u>survey here</u>
BSUoS Fixed Tariff 6 (Oct 2025 - Mar 2026) Webinar	15 January 2025 (13:00-14:30)	<u>Register here</u>
Response Reform Webinar	22 January 2025 (15:00–16:30)	<u>Register here</u>
Future of Registration webinar	23 January 2025	Register here



Questions relating to BSAD and Interconnectors

8th January 2025





Thank you for all the questions that have been submitted regarding Interconnector Trades and BSAD (Balancing Services Adjustment Data). As mentioned in the Operational Transparency Forum (OTF) on 18/12/24, we have reviewed all the questions received at the OTF over the last year and have provided answers or next steps within the following slides (questions listed in date order). Please note some of these answers have been updated from previous responses given.

We would also like to come back to a future OTF to explain what the Settlements Team do and how NESO collate the data which feeds Elexon's imbalance and settlement processes.

We can only apologise for the delay in addressing the questions and can appreciate the frustration in further delay. Initial delays were due to the queries going to the wrong team but contact lists have now been updated as a result. There has then been limited resource due to leave over the Christmas period which caused the further delays.

Many of the issues raised at the OTF had already been identified with action being taken while the queries were being raised at the OTF but we will try to make sure in future this is communicated effectively and efficiently back through OTF.



Acronyms and Definitions (1/2)

Slido code #OTF

Elexon –Elexon administer the Balancing and Settlement Code (BSC) which contains the rules and governance arrangements for the Balancing Mechanism and imbalance settlement processes - <u>About Elexon, its work and its</u> roles - <u>Elexon BSC</u>

Balancing Services Adjustment Data (**BSAD**) is used to submit balancing actions to the Balancing & Settlement Code (BSC), which defines the rules and governance for the balancing mechanism and imbalance settlement processes of electricity in Great Britain. BSAD covers actions taken outside of the balancing mechanism. The BSAD methodology statement can be found here: <u>BSAD Methodology</u>

Further information about **Interconnectors** can be found in the OTF Interconnector Special from 8 March 2023. The webinar recording is available under Special Events on our webpage: <u>Operational Transparency Forum | National Energy System Operator</u>

BOA – Bid Offer Acceptance: this data provides Elexon with the record of NESO Control Room actions taken within the Balancing Mechanism

Cashout – used to refer to the result of the Elexon Imbalance calculations. Further information about this can be found on Elexon's website at: <u>Imbalance Pricing Guidance - Elexon Digital BSC</u>

CTPT - Co-ordinated Third Party Trades - a service between NESO and the Irish System Operators (SOs). Whilst this is a SO-SO service where the Irish SO requests a change of flow on a specific GB-IE interconnector and NESO accepts or rejects the request, the change of flow is achieved through a 3rd party trading on the interconnector on behalf of the Irish SO. As the trading is carried out by the 3rd party pre-gate-closure, any rebalancing actions required in GB are achieved through renominations by the market party with whom the 3rd party traded. Therefore, there is no remuneration cost for NESO



Acronyms and Definitions (2/2)

INTNSL – Interconnector North Sea Link

SO-SO trades – direct trading between the System Operators for the transmission networks at either end of the Interconnector. Further information about Interconnectors, including SO-SO trades, can be found in the OTF Interconnector Special from 8 March 2023. The webinar recording is available under Special Events on our webpage: <u>Operational Transparency Forum | National Energy System Operator</u>

NIV is the net imbalance volume (in MWh) of the total system for a given Settlement Period. It is derived by netting Buy and Sell Actions in the Balancing Mechanism - Further information about this can be found on Elexon's website at: <u>Imbalance Pricing Guidance</u>

DISBSAD - Disaggregated Balancing Services Adjustment Data

FPN – Final Physical Notification. The final submission made for a BM Unit's expected level of energy Import or Export in a Settlement Period. Further information is available on Elexon's website at: <u>Glossary Term: Final Physical Notification – Elexon BSC</u>

Additional information is also included on the relevant slides



Q.(27/3/2024) Recently there has been greater discrepancy between trades executed by the National Grid Control Room and what is being reported by Elexon. What is the process around this? E.g. BSAD trades. And do you feel this process is robust enough persists, the escalating discrepancies?

A.(updated) We are unsure what activity this question relates to and appreciate a significant amount of time has passed. If the discrepancy still persists, could you please provide examples by email to: settlement.queries@nationalenergyso.com where we would be happy to investigate this. We are also planning to step through the high level settlement process at a future OTF.



Interconnector Emergency Assistance

Q.(19/6/2024) What was the emergency assistance yesterday (11/06/2024) about and how much did it cost?

A. On II June there was an active export transmission constraint which limited capacity in that part of the GB system due to the combination of outages in effect. This constraint can usually be managed by restricting wind and thermal plant, and by sell trades on the European Interconnectors. On this occasion these market actions were insufficient, and we therefore requested Emergency Assistance from RTE (the French Transmission System Operator).

Unfortunately, there was a delay in agreeing the price for this activity – this has now been agreed and resubmission for BSAD has been completed. We are reviewing internally how we can improve the process to make it more efficient to remove delays in future. For note as an update to the previous answer the cost has not previously been reflected in the BSAD reports.

Further information about **Interconnectors**, including Emergency Assistance, can be found in the OTF Interconnector Special from 8 March 2023. The webinar recording is available under Special Events on our webpage: <u>Operational Transparency Forum | National Energy System Operator</u>



Previously Asked Questions about Moyle CTPT data submissions

Slido code #OTF

Q.(10/7/2024) Good morning, we are seeing a lot of TSO-TSO activity on the MOYLE priced at 0 GBP in GB (SO-flagged). Is 0 GBP the correct price? Or should we expect this price to be revised in future? It's not 0 in IE. – Please see slide 17 for explanation

Q.(10/7/2024) We are seeing a lot of BSAD volume on the MOYLE interconnector priced at 0 GBP, but this doesn't appear to be NGESO forward trades - are these prices correct, if not, what/where are the correct prices? Thank you – Please see slide 17 for explanation

Q.(10/7/2024) On CTCP - If you have 0 priced offers they will be arbitraged against any bids at a higher price clearly impacting both niv and price. This was the precise issue of the first interation of Winter contingency pricing. – Please see slide 17 for explanation

Q.(10/7/2024) The Moyle BSAD action set the short system price at £0/MWh on Saturday in SP30 which have resulted in Flex increasing demand/reducing generation in a short system. "Looking into" this is not good enough when it is having a material effect on the traded market – Please see slide 17 for explanation



Previously Asked Questions about Moyle CTPT data submissions continued

Slido code #OTF

Q.(17/7/2024) On CTPT - is the current position that there are trades that feed into cashout but we will only know the volumes (and cashout) D+1 or is it that CTPT trades will not appear in cashout at all or is it something else (i.e. CTPT will feed in but volumes will not be known until the problem is resolved)? – Please see slide 17 for explanation

Q.(24/7/2024) Is offered MOYLE BSAD accounted for in the NIV? – Please see slide 17 for explanation

Q.(07/08/2024) We were informed on 24th July that an IT fix had been implemented for reporting of the CTPT service on EWIC & Moyle. Entries may have been removed from NGESO Disaggregated BSAD file but still appear in the BSAD data on Elexon Insights Solution. Are there plans to correct the Insights Solution? – Please see slide 17 for explanation

Q.(16/10/2024)On 24 July we were told that we would no longer see erroneous BSAD reporting of CTPT trades. However, we have again been seeing apparent Moyle upregs at £0 entering the BSAD data including this morning in SPs 4-12. Are you aware of this issue and, if so, is there work underway to resolve it? – Please see slide 17 for explanation



Response to questions about Moyle CTPT data submissions (slides 15 and 16)

A. The questions on the previous 2 slides we believe are all connected and linked to Moyle CPTP data submissions which were incorrectly feeding into BSAD. We have been working closely with Elexon to resolve this as we had originally thought a £0 price feeding through would not affect cashout price but this was confirmed incorrect.

A system fix was implemented as of August to ensure these trades were no longer feeding into BSAD (as informed in July) and a re-submission completed to retrospectively fix any previous trades included. This should be reflected on the Elexon Insights solution as per the settlement run schedule which can be found on the Elexon portal (<u>www.elexonportal.co.uk</u>)

Unfortunately, when we become NESO a system rollback was performed which meant CPTP were incorrectly being picked up again. This again was fixed and BSAD resubmitted 14th October. We have also updated processes to ensure this doesn't happen again when the system is updated.

For any further questions, or if you believe the above does not answer the specific question please contact the Settlements dot box <u>settlement.queries@nationalenergyso.com</u>



Q.(07/08/2024) SP22 on 30/07 I believe has an incorrect NIV and cashout price. ESO said to ask Elexon about it, but Elexon always say 'we just publish the data we're given, talk to ESO about it'. I have been in this limbo countless times over the years – is there a more productive approach we could embrace?

A. We have been in touch with our contacts at Elexon and they have confirmed that they are responsible for calculating and reporting cashout prices. The BSAD and BOA data that NESO submit is an input into this methodology and should the cashout price be impacted because of this data we will support Elexon to resolve this.

Elexon has advised that the best route for this type of query is to raise a case via the Elexon Support: <u>https://support.elexon.co.uk/csm</u>

On the specific query: The cashout price is currently reported as £41.66/MWh for SP22 on 30/07/2024. The Elexon team are currently investigating what caused the price to be initially reported as £1/MWh.

BOA and **Cashout** are defined on the 'Acronyms and Definitions' slide



BSAD Previously Asked Questions Slido code #OTF

Q.(04/12/2024) Please can you confirm that the SO-SO trades on the Moyle Interconnector during 28th/29th November were actually SO-SO trades and should therefore definitely be included in the NIV calculation? They were unusual in the sense that DISBSAD trades are usually included in FPN's whereas we saw a deviation from FPN's on Moyle by the same volume of the supposed SO-SO trades. NESO also didn't report them in advance (although Elexon did have them) in your normal data set.

Q.(04/12/2024) The SO-SO trades on Moyle on 28th/29th November were quite unusual. Do you expect to do more of these and was there any particularly special reason for them? The volumes were not included in FPNs like we might see with advance BSAD trades (which is the unusual part) thanks

A. We have been working closing with SONI (System Operator Northern Ireland) to confirm the values for the trade and as such this is not included within BSAD. Once the position is agreed, we will resubmit BSAD data if required.

SO-SO trades, NIV, DISBSAD and FPN are defined on the 'Acronyms and Definitions' slide



BSAD Previously Asked Questions Slido code #OTF

Q.(04/12/2024) On Sunday 1st December from periods 29 through 47 we saw 350MWh of upregulation priced at £0 on the North Sea Link in DISBSAD. Was this a CTPT trade similar to those that appeared across Moyle earlier in the year, and therefore won't end up affecting the imbalance price? If so, can you implement a holistic data cleaning fix for all possible CTPT trades, rather than firefighting those that do appear, as appears to have happened with Ireland?

Q.(04/12/2024) Adding to Celyn, were the system-flagged £0/MWh NSL BSAD trades on Sunday 1st December real, and should they be included in NIV calculations?

Q.(18/12/2024) Further to Celyn's question, will the INTNSL deviations today incur BSAD? This needs to be addressed *today*, because the difference would be 700MWh

A. We believe that the trades, which are not actions taken by NESO, were sent to the wrong system in error and have been included within BSAD incorrectly. We did resubmit data to rectify this on 11th December but due to an error with the tool these were overwritten. We resubmitted again on 13th December and have now added steps to the internal process to ensure that our tool accurately reflects resubmitted data which feeds through to the Elexon process.

We have also received a number of queries through our dot box regarding NSL and upon investigation we have discovered that the 1st December was not an isolated incident. We are currently working through this issue with the other days where trade volumes were submitted via BSAD with 0 cost and will resubmit BSAD ASAP. Going forwards a change is required to our system to ensure these incorrect values are not picked up in future but in the meantime we are monitoring this on a daily basis.



Q. (13/12/2024) Tomorrow the Greenlink interconnector starts testing. In recent weeks there has been inconsistency as to whether testing volumes receive BSAD or not. Before the testing starts, can you please confirm whether BSAD will be attributed to these commissioning tests?

A. We apologise that this hasn't been clear – we can confirm that the trades will not be reported via BSAD as they are treated as CTPT similar to Moyle. However given the new process should there be any BSAD entries for Greenlink reported to NESO they should be ignored if they contain a £0 price and will be fixed and corrected by the settlements team post event.



Q.(18/12/2024) Why does NESO believe it's appropriate to provide a first response to the BSAD issues on Jan 8th, 6 weeks after they were first raised? These are enormous, market moving volumes and errors. In lieu of OTF, they should be resolved via email ASAP – Please see following slide for response

Q.(18/12/2024) Could NESO elaborate on what errors are occurring with BSAD? Are actions missing or additional actions being reported? What is actually happening so market participants can understand what is going on?– Please see following slide for response

Q.(18/12/2024) There seems to be a cultural lack of urgency or care when it comes to market data issues like these BSAD at NESO. Now that NESO is NESO, not ESO, how will this be remedied? – Please see following slide for response

Q.(18/12/2024) Raising them via the Settlement email does not let the market know, they need to be covered in the OTF so everyone is aware of what is going on.– Please see following slide for response

Q.(18/12/2024) My BSAD question was specifically about the timeframe and lack of urgency. The answer only referred to a mailbox that apparently most of the market is already using. Can you please respond to the timing and lack of urgency issue specifically– Please see following slide for response

Q.(18/12/2024) When you have a 24 hour market that is driven by data provided almost exclusively by grid, some issues are going to be more urgent than can be managed via a weekly call or a .box with no guaranteed turnaround. Could you consider another, more real-time forum for the market to use in urgent matters?– Please see following slide for response



A. Thank you for your questions and feedback on the previous slide raised within OTF on 18/12/24.

Again, we apologise for the delay in addressing the questions and can appreciate the frustration in further delay. Initial delays were due to the queries going to the wrong team but contact lists have now been updated as a result. There has then been limited resource due to leave over the Christmas period which caused the further delays.

Hopefully, what has been provided today has helped answer any remaining queries and we will try to make sure in future answers and actions are communicated effectively and efficiently back through OTF.

We take all topics raised to us seriously and make every effort to address concerns about settlements data promptly, including providing updates to the data provided to Elexon.

Please feel free to continue to raise via the OTF but the best way to raise these issues is at: <u>settlement.queries@nationalenergyso.com</u> – if you believe this is a 'real-time' issue then please feel free to mark this as urgent.

We are not able to respond to questions raised on Slido via email as Slido does not hold your contact details.



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Demand | Last week demand out-turn

Slido code #OTF



Peak values by day

	OUT	TURN
Date	Daily Max Dist. PV (GW)	Daily Max Dist. Wind (GW)
01 Jan 2025	0.5	5.4
02 Jan 2025	5.4	n/a
03 Jan 2025	5.1	2.8
04 Jan 2025	1.5	n/a
05 Jan 2025	0.6	3.0
06 Jan 2025	2.1	n/a
07 Jan 2025	4.1	3.2

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

		FORECAST (Wed 01 Jan)		OUT			
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	National Demand (GW)	Triad Avoidance est. (GW)	N. Demand adjusted for TA (GW)	Dist. wind (GW)
01 Jan 2025	Evening Peak	33.5	2.8	34.0	0.0	34.0	2.3
02 Jan 2025	Overnight Min	21.3	2.2	21.9	n/a	n/a	1.6
02 Jan 2025	Evening Peak	39.5	1.8	41.7	0.2	41.9	1.7
03 Jan 2025	Overnight Min	23.5	2.8	24.2	n/a	n/a	2.6
03 Jan 2025	Evening Peak	42.8	1.1	42.4	0.0	42.4	0.5
04 Jan 2025	Overnight Min	24.7	1.5	24.4	n/a	n/a	0.7
04 Jan 2025	Evening Peak	39.4	1.6	40.2	0.0	40.2	1.3
05 Jan 2025	Overnight Min	23.7	1.6	23.0	n/a	n/a	2.3
05 Jan 2025	Evening Peak	40.6	2.7	39.0	0.0	39.0	2.7
06 Jan 2025	Overnight Min	23.2	3.3	22.3	n/a	n/a	4.0
06 Jan 2025	Evening Peak	43.1	3.3	42.6	0.0	42.6	3.4
07 Jan 2025	Overnight Min	24.6	3.0	25.3	n/a	n/a	2.9
07 Jan 2025	Evening Peak	43.9	2.6	44.7	0.0	44.7	2.9

25

Demand | Week Ahead



Renewable type
Distributed_PV
Distributed_Wind

Demand type

National Demand (ND) transmission connected generation requirement within GB

 ND + est. of PV & wind at Distribution network

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 <u>do not include</u> 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 <u>does not include</u> 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 <u>NESO Data Portal</u> in the following data sets: <u>Historic Demand Data & Demand Data Update</u>

National Demand Peaks and troughs

		FORECAST (Wed 08 Jar		
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	
08 Jan 2025	Evening Peak	45.5	0.9	
09 Jan 2025	Overnight Min	27.5	1.3	
09 Jan 2025	Evening Peak	45.0	2.1	
10 Jan 2025	Overnight Min	28.7	0.8	
10 Jan 2025	Evening Peak	45.0	1.3	
11 Jan 2025	Overnight Min	26.8	1.2	
11 Jan 2025	Evening Peak	41.4	1.1	
12 Jan 2025	Overnight Min	24.3	2.1	
12 Jan 2025	Evening Peak	39.2	3.8	
13 Jan 2025	Overnight Min	21.8	4.3	
13 Jan 2025	Evening Peak	40.3	4.2	
14 Jan 2025	Overnight Min	22.6	3.1	
14 Jan 2025	Evening Peak	41.4	2.0	





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 8th January 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	09/01/2025	42199	11480	3760	44920	7870
Fri	10/01/2025	42268	5530	3760	44860	2450
Sat	11/01/2025	42268	5170	3760	41580	5720
Sun	12/01/2025	42415	14820	3760	40500	12250
Mon	13/01/2025	43020	17160	3760	41420	14100
Tue	14/01/2025	43020	10150	3760	42650	8250
Wed	15/01/2025	43013	11560	3760	42400	9020

*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



NESO Actions | Category Cost Breakdown



NESO Actions | Category Cost Breakdown



NESO Actions | Constraint Cost Breakdown



NESO Actions | Peak Demand – SP spend ~ £73k Thursday 2nd January



NESO Actions | Minimum Demand – SP spend ~ £199k Wednesday 1st January

Date SP Other = OCGT + Oil 30K 28579 + Station Load + 4594 01/01/2025 🗸 11 🗸 BMRS Other 1074 25K 23985 0 14732 910 5092 Half-hour preceding 05:30 20K -5096 17383 898 Carbon Intensity 15K (qCO2/kWh) 17.25 45.45 10K 859 2928 28.20 5059 0 5K 0K NESO Outturn Nuclear Hydro + Net I/C National Embedd Embedd Market Wind Pumped I/C TSD True Coal CCGT Biomass PS Actions Other Flow Storage Demand Export Export Solar Wind Demand CCGT Net I/C Flow Wind Biomass -5096 -5096 2015 2928 17303 859 859 n 14732 913 0 -1512 -1059 Wind Wind Wind Market NESO Outturn Market NESO Outturn I/C Market I/C NESO Outturn Wind BOAs Actions Forecast Variation Outturn Actions Actions

NESO Actions | – Highest SP spend ~ £544k Sunday 29th December



Transparency | Network Congestion

B4/B5

B4/B5 TRANSFER CAPACITY

B4/B5 FORECAST









30 Data Portal: Constraints Management



Transparency | Network Congestion



Week Commencing

B7 TRANSFER CAPACITY



Slido code #OTF



National Energy

System Operator

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

Transparency | Network Congestion

LE1 TRANSFER CAPACITY







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)



Previously Asked Questions

Slido code #OTF

Q: FPN's for North Sea Link have been at zero all day today but it is following a completely different profile (currently importing 1400MW). Why is that? Thanks

A: NESO receives two types of pre real time data from the Interconnectors regarding the flow: The Final Physical Notification (FPN) details the allocation of the flow on each Interconnector to specific BM Units for individual Interconnector Users for each gate period and are primarily used by ELEXON in their Settlement processing. Reference Programmes detail how the interconnector will ramp to achieve the expected flows within the gate and are primarily used by NESO operationally.

On this date, the reference programmes we received from NSL showed an import of 1400MW from 07:00-23:00, which matches the flow seen. There were no actions taken by NESO on NSL. The FPN data which we receive and publish for Interconnectors is for the individual Interconnector Users and is published every half an hour, for example, this data for BM Unit I_ISG-NDPL1 on 18th (https://bmrs.elexon.co.uk/balancing-mechanism-bmu-view?bmuld=I_ISG-NDPL1&activeTab=Physical&startDate=2024-12-18T00%3A00%3A00.000Z&endDate=2024-12-19T00%3A00%3A00.000Z).

I_IEG-NSL1 and I_IED-NSL1 have a very specific usage and are the Interconnector Error BMUs. These Interconnector Error BM Units are used to allocate the difference between the sum of the PNs for the individual Interconnector User BM Units versus the total flow on the interconnector. Typically, the FPN for I_IEG-NSL1 and I_IED-NSL1 if it was given would be zero even if the actual flow on NSL is non-zero."



Previously Asked Questions



Q: On Wed 11 Dec, Denmark was trading £500+/MWh above GB, but export capacity across VKL was restricted to 0MW to prevent export. Available BM options in GB were then not utilised, instead MW from Denmark purchased at prices up to £3421 costing GB consumers millions more than BM alternatives. Why?

A: Due to the timing of when trading decisions are made, available information of BM options and the volume of MWs required, the decisions made at the time about what MWs were accepted and the overall total cost were deemed to be necessary.

Further information about Interconnectors, including the timing of trading decisions, can be found in the OTF Interconnector Special from 8 March 2023. The webinar recording is available under Special Events on our webpage: <u>Operational Transparency Forum | National Energy System Operator</u>



Previously Asked Questions

Slido code #OTF

Q: What prevented NESO buying more QR and BR during periods of reserve scarcity last week? Clearing prices for these services were an order of magnitude (or two) lower than prices paid to access reserves in realtime.

A: For the period in question the requirement has recently been increased to 600MW of positive Balancing Reserve (BR) across the peak and we are seeing limited liquidity beyond this on tight days. The BR auction runs ahead of the wholesale market and therefore there is significant uncertainty in system conditions this far ahead of delivery with the 11th and 12th December being the first test of our price model in tighter winter conditions. Updates were made to the model for the 13th December resulting in higher clearing prices but a larger proportion of the requirement being filled and very little volume being rejected. Furthermore, not its the actions taken in real time could have been offset by forward procurement of more BR. For Quick Reserve (QR) the service is in its infancy having only launched on the 3rd December and we are learning about its capabilities and levels of liquidity in different system conditions.



Advance Questions



Q: (16/12/2024): One of the main purposes of QR was to alleviate response from sites in DC/DM/DR. Now that QR is live, is there a chance we can review the "delivery duration" parameter for DC/DM/DR? This parameter has a strong impact on the SOC requirements for energy-limited sites, and relaxing it would provide immediate savings to everyone

A: These parameters are reviewed on an ongoing basis, but we are not necessarily expecting a change due to QR. While QR is there to return the frequency to 50Hz, and take over the energy delivery from response, this is so that the response is available to respond to the next event sooner, lowering system risk, and not to reduce the total response energy quantity.



Advance Questions



Q (19/12/2024): Moving BR to the co-optimized afternoon auction is a key change to make the ancillary service procurement more efficient. Is there a rough timeline about when this should happen?

Q (23/12/2024): When do you plan to move the BR auction to the cooptimized response/reserve auction? Can you add the timeline to https://www.neso.energy/publications/markets-roadmap ?

A: Thanks for this question, we agree that moving BR procurement to the co-optimised 2pm auction would be beneficial and have received feedback to this effect from operators of different technology types. We are also currently conducting a CBA to determine the benefits of co-optimising BR with the 2pm auction to support with prioritisation.

We will include plans to move the timing of the BR auction in our next EBR consultation for Balancing Reserve which we have planned for Spring 2025. The auction timing cannot be changed without an Art. 18 consultation and therefore this would be an appropriate time to communicate the timelines associated with this change.



Advance Questions



Q. (16/12/2024):Could someone from the NESO or relevant TOs come to a future forum to explain what specific projects are impacting the B6 and B4/5 boundaries and their completion dates etc? Given the level, and duration, of constraint it would be good to understand the build out programme.

Thanks

A. This is outside the scope of the OTF, however NESO do publish the future network projects across the GB transmission network in the Pathway to 2030 suite of documents. Specifically Network Options Assessment(NOA) refresh and in the Beyond 2030 report along with the Electricity Ten Year Statement (ETYS). These give a full picture of what is to come across these boundaries. You can refer to the documents:

1. List of projects - you have p61. in the <u>beyond 2030</u> report which shows all the projects there. Also, we have the ETYS which shows capability of the system.

2.Future capability from these projects on the system - in the Electricity Ten Year Statement (ETYS), we publish the current and future capabilities of the transmission network. Here is a link for the Scottish Boundaries - https://www.neso.energy/publications/electricity-ten-year-statement-etys/electricity-transmission-network-requirements/scottish-boundaries

Q. (11/12/2024): Apologies if I missed an update on this, but the OTF slides in winter used to cover NESO's view of operational margins for the upcoming week, with indicative surplus capacities. Is there a plan to publish this again for winter 2024/25?

A. Thank you for the feedback, we have reinstated this slide from this week (8 January)



Advance Questions



Q (18/12/2024): Would you be able to confirm that assets delivering Balancing Reserve contracts that they can't possibly deliver (and pricing themselves out of merit in the BM) are being approached by NESO to ensure this doesn't continue?

By BOAing units with this approach for 1 hour you would likely make up several times your costs in IVC penalty payments.

A: The Balancing Reserve (BR) service terms do not yet include clauses that allow us to take actions against excessive utilisation pricing. We intend to mirror the wording on excessive pricing within the Quick Reserve service terms at our next BR consultation in Spring 2025.

We have reminded BR participants both at the OTF (22 May and 14 Aug 2024) and via 1-2-1 discussions that the spirit of the service is to provide reserve capacity that can be used in real time for pre-fault energy balancing and therefore our expectation is that utilisation prices in the BM are not excessive.

We are actively monitoring utilisation prices in Quick Reserve and using the powers available to us within the QR Service Terms.

If you would like to raise specific concerns about BR market behaviour, please contact our balancing services monitoring team at their .box <u>box.balancingservicesmonitoring@nationalenergyso.com</u>



Advance Questions



The following questions will be referred to the NESO Settlements Team with support from our Interconnector experts:

Q (02/12/2024): On Sunday 1st December from periods 29 through 47 we saw 350MWh of upregulation priced at £0 on the North Sea Link in DISBSAD. Was this a CTPT trade similar to those that appeared across Moyle earlier in the year, and therefore won't end up affecting the imbalance price? If so, can you implement a holistic data cleaning fix for all possible CTPT trades, rather than firefighting those that do appear, as appears to have happened with Ireland?

Q (04/12/2024): Please can you confirm that the SO-SO trades on the Moyle Interconnector during 28th/29th November were actually SO-SO trades and should therefore definitely be included in the NIV calculation? They were unusual in the sense that DISBSAD trades are usually included in FPN's whereas we saw a deviation from FPN's on Moyle by the same volume of the supposed SO-SO trades. NESO also didn't report them in advance (although Elexon did have them) in your normal data set.

A: These have been answered during today's deep dive.



Advance Questions



Q (16/12/2024): Would it be possible to provide a lookup table that links the grid codes (SCOTEX, ESTEX, SEIMP etc etc) used in the constraint limit and other data sets to the constraint boundaries B6, B4 etfc that are commonly used and to the constraint zones A-L that are commonly used.

Or if this already exists please provide a link

Thanks

Q: (18/12/2024): Hi, could you outline what further changes (engineering or control room protocols) are still required to be made to enable periods of zero-carbon running?



Outstanding Questions



The following questions will be referred to the NESO Settlements Team with support from our Interconnector experts:

Q: Yesterday evening there were some trades done on the East-West IC that increased flow from IE>GB at a price of £0/MWh. Can you confirm that these volumes should go into the NIV calculation? I think the data for these trades was released up to 6 hours late too. Thanks

Q: The SO-SO trades on Moyle on 28th/29th November were quite unusual. Do you expect to do more of these and was there any particularly special reason for them? The volumes were not included in FPNs like we might see with advance BSAD trades (which is the unusual part) thanks

Q: Were the system-flagged £0/MWh NSL BSAD trades on Sunday 1st December real, and should they be included in NIV calculations?

A: These have been answered during today's deep dive.



Outstanding Questions



Q: Can you comment on the effect of decision timescale on the skip rate data? How would commitment made ~2hrs ahead to synchronise a CCGT be compared to capacity which required a commitment at just a few minutes before real time? How would we see this effect in the data?



Reminder about answering questions at the NESO 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: ٠ 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 ٠ scope of the OTF.
- Slido will remain open until 12:00, even when the call closes earlier, to provide the maximum opportunity for ٠ 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 ٠
- **Takeaway questions** these questions will be included in the pack for the next OTF, we may ask you to ٠ 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 ٠







(i) 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: <u>box.nc.customer@nationalenergyso.com</u>



Appendix

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Purpose and scope of the NESO Operational Transparency Forum



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:

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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, NESO Business Planning, Market development National Energy System Operator





Managing questions at the NESO Operational Transparency Forum

- 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 <u>box.nc.customer@nationalenergyso.com</u>
- All questions asked through Sli.do will be recorded and published, with answers, in the Operational Transparency Forum Q&A on the webpage: <u>Operational Transparency Forum | NESO</u>

- 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 **NESO** found in the appendix of this slide pack.

Demand | Week 3 demand out-turn

Slido code #OTF

Distributed generation Peak values by day

	OUT	TURN
Date	Daily Max Dist. PV (GW)	Daily Max Dist. Wind (GW)
18 Dec 2024	2.1	6.0
19 Dec 2024	4.5	4.3
20 Dec 2024	2.4	4.1
21 Dec 2024	1.7	5.6
22 Dec 2024	3.8	5.9
23 Dec 2024	1.3	5.1
24 Dec 2024	1.8	3.2



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

National Demand Peaks and troughs

			FORECAST ()	Ned 18 Dec)		OUT	TURN	
	Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	National Demand (GW)	Triad Avoidance est. (GW)	N. Demand adjusted for TA (GW)	Dist. wind (GW)
	18 Dec 2024	Evening Peak	39.6	2.1	38.8	0.0	38.8	2.2
	19 Dec 2024	Overnight Min	20.9	3.6	21.5	n/a	n/a	3.9
	19 Dec 2024	Evening Peak	40.4	3.4	39.5	0.0	39.5	3.3
	20 Dec 2024	Overnight Min	22.2	3.6	22.6	n/a	n/a	2.5
	20 Dec 2024	Evening Peak	38.3	3.5	37.6	0.0	37.6	3.4
	21 Dec 2024	Overnight Min	18.9	5.3	19.8	n/a	n/a	5.0
	21 Dec 2024	Evening Peak	32.6	5.6	33.5	0.0	33.5	5.6
	22 Dec 2024	Overnight Min	17.0	5.7	18.8	n/a	n/a	5.6
	22 Dec 2024	Evening Peak	33.5	5.7	35.0	0.0	35.0	5.8
	23 Dec 2024	Overnight Min	18.8	4.4	20.8	n/a	n/a	3.2
	23 Dec 2024	Evening Peak	36.0	2.0	38.6	0.0	38.6	1.9
	24 Dec 2024	Overnight Min	18.6	3.0	20.5	n/a	n/a	2.8
	24 Dec 2024	Evening Peak	29.9	3.1	33.3	0.0	33.3	2.6

Demand | Week 2 demand out-turn

NESO National Demand outturn 25-31 December 2024 38000 36000 Demand type 34000 (N) 32000 30000 Demand 28000 26000 Renewable type 24000 22000 20000 18000 Wed Thu Fri Sat Sun Mon Tue Wed 25-Dec 26-Dec 27-Dec 28-Dec 29-Dec 30-Dec 31-Dec 01-Jan Date

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

Slido code #OTF

by day		OUTTURN				
	Date	Daily Max Dist. PV (GW)	Daily Max Dist. Wind (GW)			
	25 Dec 2024	1.8	2.6			
	26 Dec 2024	1.2	1.7			
	27 Dec 2024	1.0	0.8			
	28 Dec 2024	0.9	2.1			
	29 Dec 2024	2.0	4.0			
	30 Dec 2024	3.2	4.5			
	31 Dec 2024	1.5	5.8			

National Demand

National Demand (ND)

transmission connected

ND + est. of PV & wind

at Distribution network

Distributed_PV

Distributed Wind

generation requirement within GB

Peaks and troughs

			FORECAST (Wed 25 Dec)	OUTTURN			
	Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	National Demand (GW)	Triad Avoidance est. (GW)	N. Demand adjusted for TA (GW)	Dist. wind (GW)
	25 Dec 2024	Evening Peak	28.6	2.3	28.5	0.0	28.5	2.3
	26 Dec 2024	Overnight Min	18.7	1.1	18.3	n/a	n/a	1.1
	26 Dec 2024	Evening Peak	32.7	0.7	31.2	0.0	31.2	0.5
	27 Dec 2024	Overnight Min	21.1	0.6	20.2	n/a	n/a	0.5
	27 Dec 2024	Evening Peak	37.6	1.0	36.1	0.0	36.1	0.6
	28 Dec 2024	Overnight Min	20.3	1.7	21.1	n/a	n/a	0.8
	28 Dec 2024	Evening Peak	34.7	2.4	35.6	0.0	35.6	1.5
	29 Dec 2024	Overnight Min	18.3	3.2	19.2	n/a	n/a	2.7
	29 Dec 2024	Evening Peak	33.6	3.2	33.9	0.0	33.9	4.0
	30 Dec 2024	Overnight Min	18.5	4.0	18.8	n/a	n/a	3.9
	30 Dec 2024	Evening Peak	34.5	4.4	35.1	0.0	35.1	3.0
	31 Dec 2024	Overnight Min	18.0	4.2	18.3	n/a	n/a	4.5
	31 Dec 2024	Evening Peak	34.8	3.6	32.5	0.0	32.5	5.7

Distributed generation Peak values

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NESO Actions | Category Cost Breakdown



NESO Actions | Constraint Cost Breakdown



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NESO Actions | Peak Demand – SP spend ~ £15k Monday 23rd December



NESO Actions | Minimum Demand – SP spend ~ £360k Wednesday 25th December



NESO Actions | – Highest SP spend ~ £515k Saturday 21st December



NESO Actions | Category Cost Breakdown



NESO Actions | Constraint Cost Breakdown



NESO Actions | Peak Demand – SP spend ~ £136k Thursday 19th December



Slido code #OTE

NESO Actions | Minimum Demand – SP spend ~ £342k Wednesday 18th December



NESO Actions | – Highest SP spend ~ £479k Wednesday 18th December



Transparency | Network Congestion – Week 52

B4/B5 TRANSFER CAPACITY









30 Data Portal: Constraints Management



Transparency | Network Congestion – Week 52



Week Commencing

B7 TRANSFER CAPACITY



Slido code #OTF



NESC

National Energy

System Operator

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

Transparency | Network Congestion – Week 52

LE1 TRANSFER CAPACITY







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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



Transparency | Network Congestion - Week 1

B4/B5

B4/B5 TRANSFER CAPACITY

B4/B5 FORECAST



Week Commencing



Slido code #OTF



30 Data Portal: Constraints Management



Transparency | Network Congestion - Week 1



Week Commencing

B7 TRANSFER CAPACITY



Slido code #OTF



National Energy

System Operator

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

Transparency | Network Congestion - Week 1

LE1 TRANSFER CAPACITY







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)

