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ESO Operational Transparency Forum 6 December 2023

Introduction | Sli.do code #OTF

To ask questions live and provide us with post event feedback go to Sli.do and join 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 given on the slide.
- 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.
- 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@nationalgrideso.com

Stay up to date on our webpage: <u>https://www.nationalgrideso.com/OTF</u>

Future deep dive / focus topics

<u>Today</u>

<u>Future</u>

Demand Flexibility Service – introduction & overview – 13th December

Inaccurate information submitted into the Balancing Mechanism – project introduction – 13th December

Managing Storm Conditions – date tbc

If you have suggestions for future deep dives or focus topics please send them to us at: <u>box.NC.customer@nationalgrideso.com</u> and we will consider including them in a future forum

Please note there will be no OTF on 27th December or 3rd January.

Introduction to the Future System Operator – webinars

Take part in one of our Introduction to the Future System Operator webinars on either 11 or 13 December to learn more about the FSO and explore how we can work together to achieve a cleaner, more affordable and secure energy system for Great Britain.



<u>11 December 13:30-14:30</u>

13 December 10:30-11:30

ESO has launched an RFI for industry feedback on the creation of an Interconnector Framework, open until 7th December

Activity 2C (Ref 270 Role in Europe) within BP2 (Business Plan 2) seeks to create an Interconnector Framework. The aim of this being to not only ensure administration of retained European legislation, but to enable consistency for interconnectors operating in GB markets and aid transparency of the ways in which the interconnectors operate and work with the ESO.

We are keen to work with industry on the creation of an Interconnector Framework and welcome industry to respond to our first Request for Information (RFI).

The RFI has been shared and uploaded to the ESO ENC website.

The RFI has been extended for responses until the **7th December 2023.** <u>Request for Input Document</u> <u>Proforma</u>

To remain up to date with comms and updates regarding this you can sign up to our JESG newsletter here.

Enhancing Energy Storage in the Balancing Mechanism – follow up webinar

On 16 October, we welcomed over 75 stakeholders from across the energy industry to our 'Enhancing Energy Storage in the Balancing Mechanism' event where we outlined our plan to enhance the use of storage assets in our balancing activities and the timelines to achieve this.

A key focus of the event was to explore, in strong collaboration with industry, how to co-create and develop the capabilities and future market design solutions that will enable efficient dispatch of all assets in the Balancing Mechanism, in line with our net-zero ambitions.

To view the full timeline of or balancing activities, and view the event slides and Q&A, visit:

Enhancing Energy Storage in the Balancing Mechanism | ESO (nationalgrideso.com)

Follow up webinar – 14 December 2023

At the October event, we committed to sharing with you the outputs of the independent LCP Delta analysis, as well as a progress update on our plans.

The webinar will be held on the 14 December, 10.00 – 11.30am. Please register your attendance at the below registration form and the calendar invite will be sent to you shortly. Further details regarding the agenda will be shared in due course.

Registration form - Follow-up Webinar (office.com)

What's New - Local Constraints Market Scotland

The LCM was established to save overall costs for the consumer on actions at one of the Boundaries with highest total spend.

LCM Scotland open since April and publishes volumes to-date. Also comparative BM prices.

LCM Results Report available at <u>https://data.piclo.energy/</u>

Sample of BM prices: https://www.nationalgrideso.com/document/291006/download

Futures & fairer LCM access consultation planned for Dec-Mar 2024

- Broader market dialogue: using LCM as a cost effective Service
- Focus on LCM-Scotland learnings and forward benefits
- Potential alternatives to ABSVD for improving aggregator compensation
 - for permissible metered assets in LCM and other demand turn up services
- To provide feedback and for more information on these alternatives please respond <u>here</u> to our informal C16 Consultation which will be live from 08/12/2023 to 05/01/2024



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

Ahead of implementing longer-term Regional Development Programmes (RDP) across Scotland, a tactical solution may ease rising constraint costs on GB's most congested boundary, if it can use Distributed Energy Resources (DER). Anglo-Scottish (B6) boundaries show some of the highest constraints of any GB boundary and these are set to increase.

LCM specifically targets B6 constraint costs as an interim solution.. and may be help at B4 too.

Open Balancing Platform - Confirmation of our First Release

We are going live with two zones on 12 December – the Battery Zone and Small BMU Zone

- In testing we have successfully optimised requirements for both zones and followed this by automatically issuing multiple instructions
- In the case of the Battery Zone we are typically issuing 25 to 50 instructions per run
- In the case of the Small BMU Zone the number of instructions is 40 to 80 (the Battery Zone is smaller than the Small BMU Zone)

In testing we have experienced issues with certain combination of technical parameters

- The key issue is the automatic conversion from the decimal MW values generated by the optimiser and the creation of instructions with integer MW values
- The issue does not arise in Battery Zone but can appear in up to 10% of instructions generated for the Small BMU Zone

To workaround this we have implemented the following

- All instructions that do not fully obey technical parameters are flagged to the control engineer
- These instructions are blocked from the automatic sending function
- The control engineer will manually adjust the invalid instructions and send them via existing systems

We are working on a number of proof of concepts to fix this issue

Sli.do code #OTF

Balancing Programme Engagement Event: Follow up webinar on December 11th 13:00 – 14:00

Please sign up at the link below:

Balancing Programme Engagement Event: Follow-up webinar December 11th 13:00 - 14:30

OTF Survey

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).

At the ESO we are always seeking feedback from our customers, stakeholders & providers. This will enable us to improve our understanding of your requirements so that we can meet, and look to exceed your expectations.

We would really value a little of your time to take part in an online survey about the OTF to find out whether it is meeting your requirements and how we can improve it. If you are registered for the OTF, you will have received an email with the link this morning.

The survey is accessible via this link and will remain open until **Thursday 21st December**. We expect it will take about 5 minutes to complete.

In January we will present the initial results and action plan back to the OTF.

You can register for the OTF <u>here</u> to ensure you receive future communications.

Demand | Last week demand out-turn



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

		FORECAST (\	Ned 29 Nov)	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)
29 Nov	Evening Peak	42.6	0.6	42.6	0.0	42.6	0.7
30 Nov	Overnight Min	25.1	1.0	25.1	n/a	n/a	1.1
30 Nov	Evening Peak	44.2	1.0	43.7	0.0	43.7	1.2
01 Dec	Overnight Min	26.1	0.5	26.3	n/a	n/a	0.7
01 Dec	Evening Peak	43.8	0.4	43.9	0.7	44.6	0.3
02 Dec	Overnight Min	25.4	0.4	26.0	n/a	n/a	0.4
02 Dec	Evening Peak	40.8	0.5	41.5	0.0	41.5	0.8
03 Dec	Overnight Min	24.6	0.5	25.1	n/a	n/a	0.7
03 Dec	Evening Peak	41.7	0.6	42.6	0.0	42.6	0.6
04 Dec	Overnight Min	24.9	0.8	23.7	n/a	n/a	2.0
04 Dec	Evening Peak	44.5	0.9	43.3	0.8	44.1	2.4
05 Dec	Overnight Min	25.5	0.9	23.8	n/a	n/a	1.9
05 Dec	Evening Peak	43.8	1.4	43.5	0.1	43.6	0.7

Demand | Week Ahead



ESO Demand forecast for 06-12 December 2023

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

		FORECAST (Wed 06 Dec)		
Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	
06 Dec 2023	Evening Peak	43.4	2.4	
07 Dec 2023	Overnight Min	22.1	4.2	
07 Dec 2023	Evening Peak	41.0	4.1	
08 Dec 2023	Overnight Min	21.5	3.4	
08 Dec 2023	Evening Peak	39.0	2.6	
09 Dec 2023	Overnight Min	21.5	1.7	
09 Dec 2023	Evening Peak	34.5	3.4	
10 Dec 2023	Overnight Min	19.3	2.9	
10 Dec 2023	Evening Peak	36.1	2.7	
11 Dec 2023	Overnight Min	20.1	2.7	
11 Dec 2023	Evening Peak	40.3	1.9	
12 Dec 2023	Overnight Min	22.4	1.4	
12 Dec 2023	Evening Peak	40.7	1.5	

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 and peak demand. This is based on information available to National Grid ESO as of 6 December 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 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.

Day	Date	Notified Generation (MW)	Wind (MW)	IC Flows* (MW)	Peak demand (MW)	Indicative surplus (MW)
Thu	07/12/2023	43070	18360	3370	40770	18070
Fri	08/12/2023	43636	11870	3370	39930	14510
Sat	09/12/2023	42346	13980	3370	36270	18860
Sun	10/12/2023	43201	12700	3370	37530	17160
Mon	11/12/2023	45739	9720	3370	41720	12710
Tue	12/12/2023	45665	7840	3370	41970	10570
Wed	13/12/2023	45847	7010	3370	42740	9140

Margins are adequate for the next week.

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

ESO Actions | Category costs breakdown for the last week



Date	Total (£m)
27/11/2023	5.1
28/11/2023	7.8
29/11/2023	6.0
30/11/2023	3.6
01/12/2023	7.5
02/12/2023	4.1
03/12/2023	2.9
Weekly Total	36.9
Previous Week	68.3

Constraints and Reserve costs were the key cost component for the week.

Please note that all the categories are presented and explained in the **MBSS**.

Data issue: Please note that due to a data issue on a few days over the last few months, the Minor Components line in Non-Constraint Costs is capturing some costs on those days which should be attributed to different categories. It has been identified that a significant portion of these costs should be allocated to the Operating Reserve Category. Although the categorisation of costs is not correct, we are confident that the total costs are correct in all months. We continue to investigate and will advise when we have a resolution.

ESO Actions | Constraint Cost Breakdown



Thermal – network congestion

Actions were required to manage thermal constraints throughout the week with the most significant cost on Tuesday.

Voltage

Intervention was required to manage voltage levels throughout the week.

Managing largest loss for RoCoF

No intervention was required to manage largest loss.

Increasing inertia

No intervention was required to manage System Inertia.

ESO Actions | Friday 01 December – Peak Demand – SP spend ~£240k



Carbon Intensity data on data portal: <u>https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions</u>

ESO Actions | Monday 27 November – Minimum Demand – SP Spend ~£59k



Carbon Intensity data on data portal: <u>https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions</u>

ESO Actions | Tuesday 28 November – Highest SP Spend ~£456k



Carbon Intensity data on data portal: <u>https://data.nationalgrideso.com/carbon-intensity1/carbon-intensity-of-balancing-actions</u>

Transparency | Network Congestion



Boundary	Max. Capacity (MW)
B4/B5	3400
B6	6800
B6a	8000
B7	8325
GMSNOW	4700
B9	10600
EC5	5000
LE1	8500
B15	7500
SC	7300



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Transparency | Network Congestion



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Max.

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(MW)

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Transparency | Network Congestion







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7300

Boundary

B4/B5

B6

B6a

B7

B9

EC5

LE1

B15

SC

GMSNOW

ESO

Advance Questions

Q: The 12 hour ahead DRM for P35 today (29/11) on https://bmrs.elexon.co.uk/loss-of-load-probability-and-derated-margin is showing as 1477MW, however at https://www.bmreports.com/bmrs/?q=transmission/lossloadProbDerateMargin it is showing as 1094MW.

A: We believe this is a question best answered by ELEXON. We send this dataset to them once and they then mirror it on both of these webpages. Please raise a ticket with ELEXON to align the information they are publishing across the site. https://www.elexon.co.uk/about/elexon-key-contacts/bsc-service-desk/

Q: Why are the internal and externally published views of demand forecast different?

A: Our internal forecast is still in-line with the forecast published to market. However, for operational purposes we produce an additional forecast which includes the potential contribution from DFS.

Q: Will the DFS volume be removed from the published TSDF and NDF?

A: The DFS volumes are not included in externally published demand forecasts. The demand reduction effect of DFS will however be included in the ND and TSD outturn.

Q: On 13/11/2023 at approximately 21:50, the ElecLink changed their profile post their deadline (via: https://data.eleclink.co.uk/) for 22:00 to 23:00 from 0MW to 1000MW. How is it possible that they went against their FPNs post the deadline, giving such little warning before importing 1000MW into GB?

A: ElecLink was nominated to import to the UK in full from 16:00 on 13th Nov, however there was an unplanned outage published on REMIT for ElecLink from 15:33 on 12th through to 21:55 on 13th (GMT). The sudden switch is simply the volume and position becoming available again following the outage.

Q: If B6a is recently showing a regular availability of 100% vs a forecast much lower, is there a reason for the forecast continuing to be far lower than 100%?

A: A constraint at lower than 100% would indicate an outage across that boundary. In this instance it may be a planned outage.

The forecast values are calculated at Year Ahead (YA) and then refined/recalculated at Medium Term (MT c. 3 months ahead). The other value provided on the OTF slide is the Day Ahead (DA) constraint limit. The outage plan changes between YA and DA, and this results in changes to constraint limits. So, the difference between the forecast and current day limit, is that there have been changes to the topology of the network, due to outage plan changes, that result in different constraint values.

For further information on constraints, please see the OTF webinar on <u>20th September</u>.

Q: Can the ESO provide examples of the different types of system conditions that result in different combinations of interconnectors being prequalified for NGESO interconnector auctions. In the notes column of the Interconnector Requirement and Auction Summary Data on the ESO Data Portal there is often the description "Due to French electricity system conditions, NGESO is unable to trade on the interconnectors joining GB and France" but in some of these auctions volumes are then shown as cleared on GB-Fr interconnectors. Can you explain how this happens please?

A: The combination of circuit outages, demand and resulting system flows can cause constraints on the network which would be made worse if the interconnector flow was increased from the declared flow (import/export). Some constraints are localised and may only affect a subset of the interconnector portfolio while other constraints can affect multiple interconnectors. Likewise, in some instances a constraint can be improved by trading on a particular interconnector.

The French system conditions are studied by the French TO at various time intervals. The position at day ahead will change as we near real-time. This change in system condition will result in an acceptable flow on the GB France interconnectors. It is feasible that for some auctions we could not trade on FR interconnectors but nearer real-time we have traded (the flow may still be limited) due to an update on the system conditions and a relaxation on the restriction.

Q: Can you confirm all BMUs are subject to ABSVD when delivering DC/DM/DR? We're seeing some BMUs (e.g. E_BRETB-1) operating in a way that suggests ABSVD doesn't apply to them.

A: Thanks for your question. We don't comment on individual units and actions.

To answer your question, ABSVD will apply to all BM Units, once set up to deliver these products. The team are currently reviewing this.

Q: Re MEL/MIL: the importance of a rational approach to data volumes is clear. Can you apply this thinking to your operational metering requirements as well please? As it stands you're expecting demand-side providers to gather millions of data points every second, regardless of the service provided.

A: Thank you for this feedback. We have shared it with the relevant teams.

Q: Please could you comment on what happened wrt frequency at ~3pm yesterday? FPN's were increasing over the SP boundary and the control room separately added a significant amount of power to the grid via BOA's, sending the frequency to nearly 50.3 Hz. NIV was +ve and really should have ended up -ve

A: On 28 November, ESO's Control Room noticed that some interconnectors were operating at flows different to those declared in ESO's systems. At the time of the event, the Control Room had already taken BM actions to balance the system in anticipation of the flows expected by ESO which did not materialise. This led to the increase in system frequency reaching a maximum deviation of 50.29Hz.

ESO's Control Room team contacted the relevant interconnectors to confirm the correct flows over the next few hours. Actions were taken to reduce outputs of fast ramping BMUs and additional High Response was armed to contain the system frequency and return it to within operational limits. ESO's Control Systems were updated and the issues corrected by 15:50.

After investigation, a data transfer issue was found within ESO's systems. This was an isolated incident, however ESO has put mitigations in place to prevent and warn Control Room teams ahead of time should there be any reoccurrence.

Q: With changes to connection queue management, will ESO provide historical connection registers on the data portal so changes can be identified?

Q: Last week the control room turned off some wind units (non SO-flagged) at -40 £/MW in the middle of the day when there were over 5GW of bids in the stack at ~0£/MW. Quite clearly this activity wasn't for energy balancing. What can be done to make these decisions more predictable for the market?

Reminder about answering questions at the ESO 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.
- 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.
- 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.nationalgrideso.com/what-we-do/electricity-national-control-centre/operational-transparency-forum
- **Takeaway questions** these questions will be included in the pack for the next OTF, we may ask you to contact us by email in order to clarify or confirm details for the question.
- Out of scope questions will be forwarded to the appropriate ESO 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



Audience Q&A Session

(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: box.NC.Customer@nationalgrideso.com

Appendix



Purpose and scope of the ESO 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 ESO events, provide deep dives into focus topics, and allow industry to ask questions.

Scope

Aligns with purpose, see examples below:

In Scope of OTF

Material presented i.e.: regular content, deep dives, focus topics ESO operational approach & challenges ESO 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 ESO Control Room actions & decision making Activities & operations of particular market participants ESO policy & strategic decision making Formal consultations e.g.: Code Changes, Business Planning, Market development

Managing questions at the ESO Operational Transparency Forum

- OTF participants can ask questions in the following ways:
 - Live via Sli.do code #OTF
 - In advance (before 12:00 on Monday) at https://forms.office.com/r/k0AEfKnai3
 - At any time to <u>box.NC.Customer@nationalgrideso.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 | ESO (nationalgrideso.com)</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 ESO 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
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