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Live captioning is available in Microsoft Teams

- Click on the 3 dots icon / 'More'
- Click 'Turn on live captions'

ESO Operational Transparency Forum 06 September 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 next 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.

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

Future deep dive / focus topics

<u>Planned</u>

Electricity Ten Year Statement (ETYS) – **today** Network Constraints – 20 September

Future

Scottish Oscillations – following conclusion of current investigative work Data Portal update from DEP (Digital Engagement Platform) perspective – October

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 won't be a forum on Wednesday 27 September due to availability. Regular content will be included in the slide pack for <u>4 October 2023</u>.

Demand Flexibility Service (DFS) returns this winter

- We've confirmed plans, subject to Ofgem approval, for the use of the Demand Flexibility Service for the coming 2023/2024 winter.
- Participants in homes and businesses across Great Britain will again be able to earn pounds, points or prizes
 across the winter period by shifting their energy usage outside of specified periods, helping with the cost of living
 and energy bills this winter.
- Alongside the potential "live" use of the service to help balance the electricity network this winter, we're looking to run 12 test events to deliver commercial value and incentive for providers, businesses, and consumers to participate.
- This years' service will offer providers a Guaranteed Acceptance Price (GAP) of £3,000MWh/£3KWh, for at least 6
 of the 12 tests subject to the registered volumes from January 2024.
- Following regulatory approval from the energy regulator Ofgem, consumers and businesses will be able to sign up to participate in this year's Demand Flexibility Service in the coming months, so that they can get rewarded like a power plant.

We will be holding a webinar on **Thursday 7 September** between 3:30pm-4:30pm to present an overview of DFS for winter 23/24. The webinar will be recorded and uploaded to our website for anybody that is unable to attend.

Sign up <u>here</u>.

C16 Additional Consultation 2023

We welcome industry's views on the proposed changes within our consultation.

Standard Condition Licence C16 **"Procurement and use of balancing services"** sets out the obligation on the ESO to publish five statements addressing the procurement and use of balancing services. In accordance with C16 of its Transmission Licence, we are conducting an additional review of all licence statements, following proposed changes to the Procurement Guidelines and ABSVD Statement.

Our official consultation is open from the 1st September 2023. Please respond by 5pm on 29th September 2023.

Please find the consultation documents on our <u>C16 web page</u>

If you would like to receive notification of future C16 events, consultations and updates, then please sign up to our <u>mailing list</u>.

Any questions, please contact <u>balancingservices@nationalgrideso.com</u>

What is the Electricity Ten Year Statement (ETYS)?

The ETYS is the ESO's view of future transmission requirements and the capability needed on Great Britain's National Electricity Transmission System (NETS) in the next ten years.



You can access the ETYS by visiting https://www.nationalgrideso.com/research-publications/etys

The ETYS sits is the middle of our planning process

Traditional Process







Range of credible pathways for the future of energy from today to 2050

Informs the likely future transmission requirements on the electricity system

Shows what options are available to meet reinforcement requirements on the electricity system. Also makes development recommendations

Transitional Centralised Strategic Network Plan (TCSNP)

In 2021, Ofgem launched the Electricity Transmission Network Planning Review (ETNPR) to review current network planning processes if they :

- identified low regret 'strategic investments' facilitating strategic planning of the energy system
- ensured holistic network development
- considered innovative and non-network solutions

Our ETYS 2023 Key messages

The ETYS is important in helping us to understand where investment and development is needed to help us achieve our zero-carbon ambition. Our key messages explain the key system need insights from our analysis of the latest Future Energy Scenarios:

- 1. Over the next decade(s) the GB electricity Transmission System faces growing system needs.
- 2. Our year round analysis this year highlights that winter peak still drives the majority of the bulk power needs.
- 3. We will need to address emerging high and low voltage issues on the GB Electricity Transmission system over the next decade(s).
- 4. Timely and coordinated network reinforcements will significantly help reduce network constraints.

Ways to connect and stay in touch

Keep an eye out for any surveys, energy articles and engagement opportunities via our SND newsletter. If you are not already subscribed, you can do so <u>here</u> or the ESO website nationalgrideso.com.

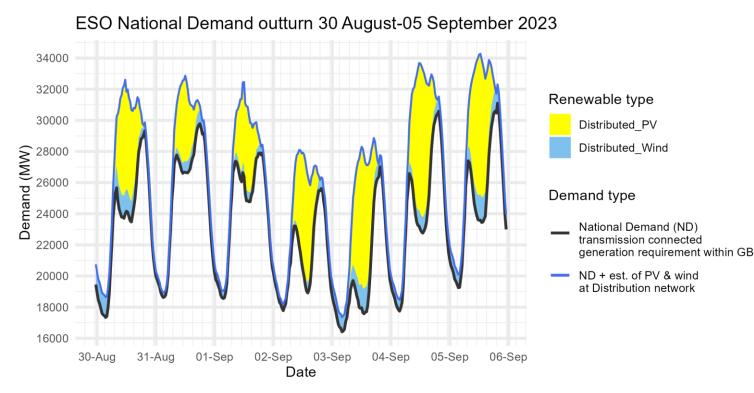
You can also contact us through our ETYS email address at <u>transmission.ETYS@nationalgrideso.com</u> and one of our team members will be in touch.

Access our current and past ETYS documents, data and media at: ETYS archive | ESO (nationalgrideso.com)

For further information on ESO publications please visit: www.nationalgrideso.com

Write to us at: GB System Capability assessment Electricity System Operator Faraday House Warwick Technology Park Gallows Hill Warwick CV34 6DA

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.

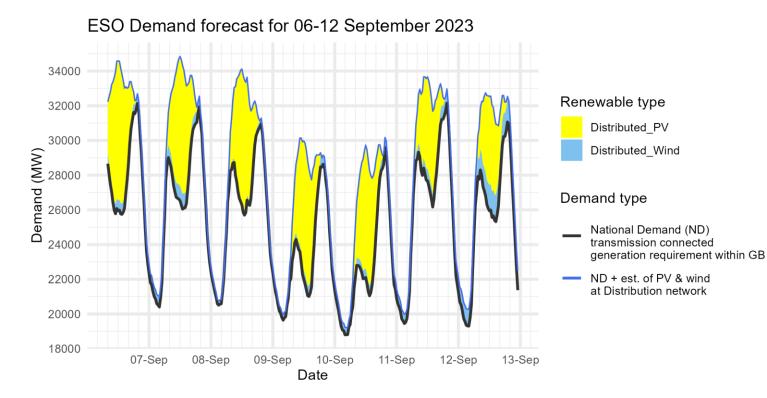
ND values do not include export on interconnectors or pumping or station load

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 (\	Ved 30 Aug)	OUTTURN	
В	Date	Forecasting Point	National Demand (GW)	Dist. wind (GW)	National Demand (GW)	Dist. wind (GW)
	30 Aug	Evening Peak	28.9	0.8	28.9	0.6
	31 Aug	Overnight Min	18.3	0.4	18.6	0.3
	31 Aug	Evening Peak	29.6	1.0	29.8	0.8
	01 Sep	Overnight Min	18.1	0.7	18.6	0.5
	01 Sep	Evening Peak	27.7	0.7	27.9	0.5
	02 Sep	Overnight Min	17.3	0.4	17.8	0.4
	02 Sep	Evening Peak	25.9	0.5	25.5	0.7
	03 Sep	Overnight Min	16.5	0.4	16.4	0.9
	03 Sep	Evening Peak	26.6	0.6	26.3	0.9
	04 Sep	Overnight Min	17.6	0.5	17.7	0.7
	04 Sep	Evening Peak	30.3	0.7	30.3	0.9
	05 Sep	Overnight Min	18.4	0.7	19.3	0.8
	05 Sep	Evening Peak	30.2	1.0	30.6	1.3

Demand | Week Ahead



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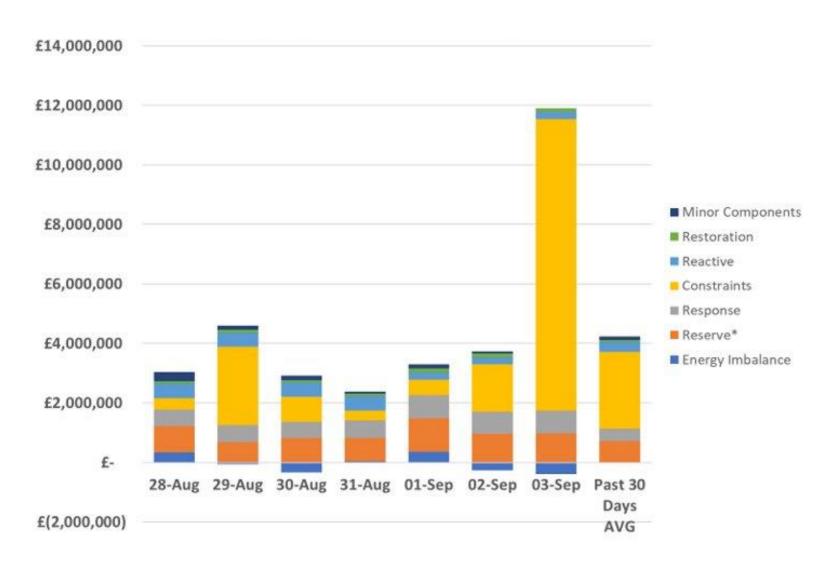
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FORECAST (Wed 06 Sep)

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06 Sep 2023	Evening Peak	31.6	0.5
07 Sep 2023	Overnight Min	20.4	0.6
07 Sep 2023	Evening Peak	31.0	0.6
08 Sep 2023	Overnight Min	20.5	0.2
08 Sep 2023	Evening Peak	30.7	0.3
09 Sep 2023	Overnight Min	19.6	0.3
09 Sep 2023	Evening Peak	28.5	0.5
10 Sep 2023	Overnight Min	18.8	0.4
10 Sep 2023	Evening Peak	28.4	0.6
11 Sep 2023	Overnight Min	19.4	0.5
11 Sep 2023	Evening Peak	31.4	0.8
12 Sep 2023	Overnight Min	19.3	1.0
12 Sep 2023	Evening Peak	30.5	1.3

ESO Actions | Category costs breakdown for the last week



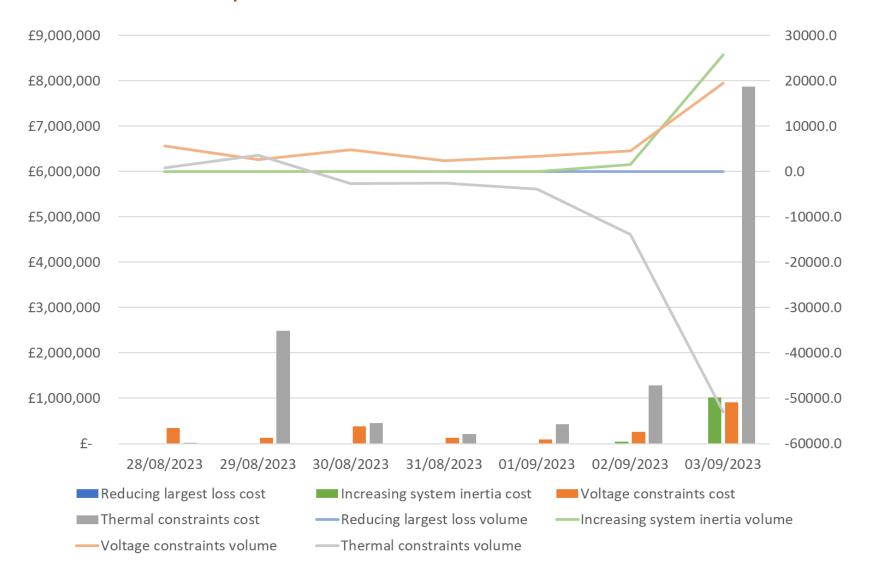
Date	Total (£m)	
28/08/2023	3.0	
29/08/2023	4.5	
30/08/2023	2.6	
31/08/2023	2.4	
01/09/2023	3.3	
02/09/2023	3.5	
03/09/2023	11.5	
Weekly Total	30.8	
Previous Week	36.4	

Constraints 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. The most significant costs were on Tuesday and Sunday.

Voltage

Intervention was required to manage voltage levels throughout the week.

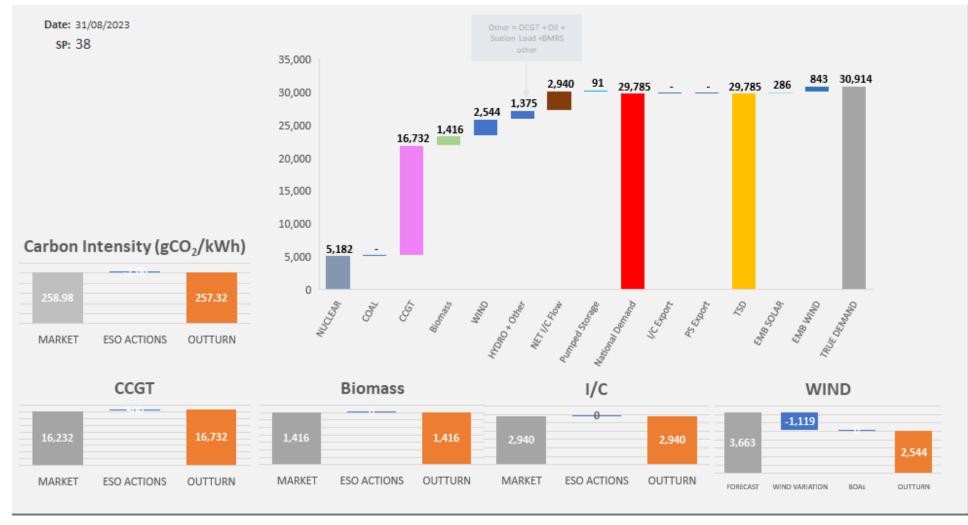
Managing largest loss for RoCoF

No intervention was required to manage largest loss.

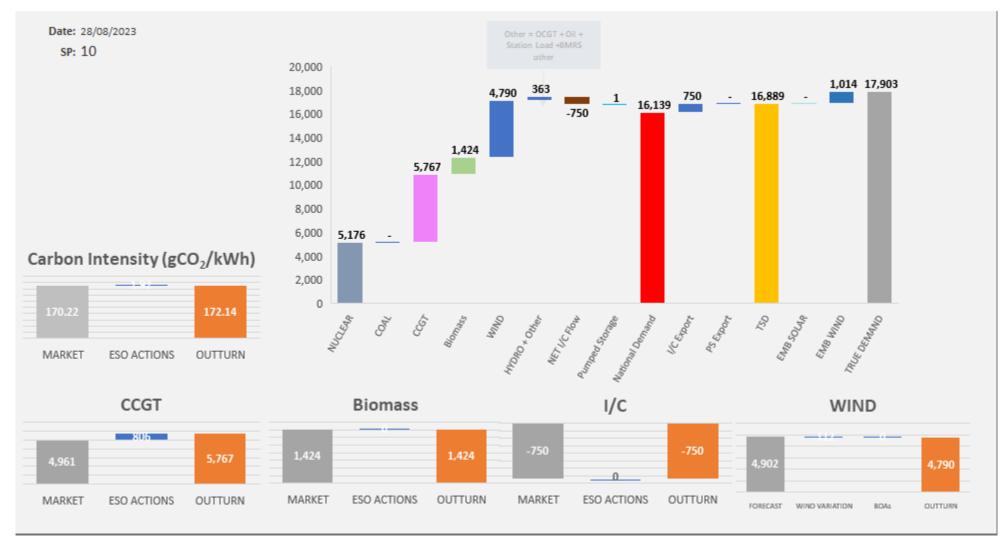
Increasing inertia

Intervention was required to manage System Inertia on Saturday and Sunday.

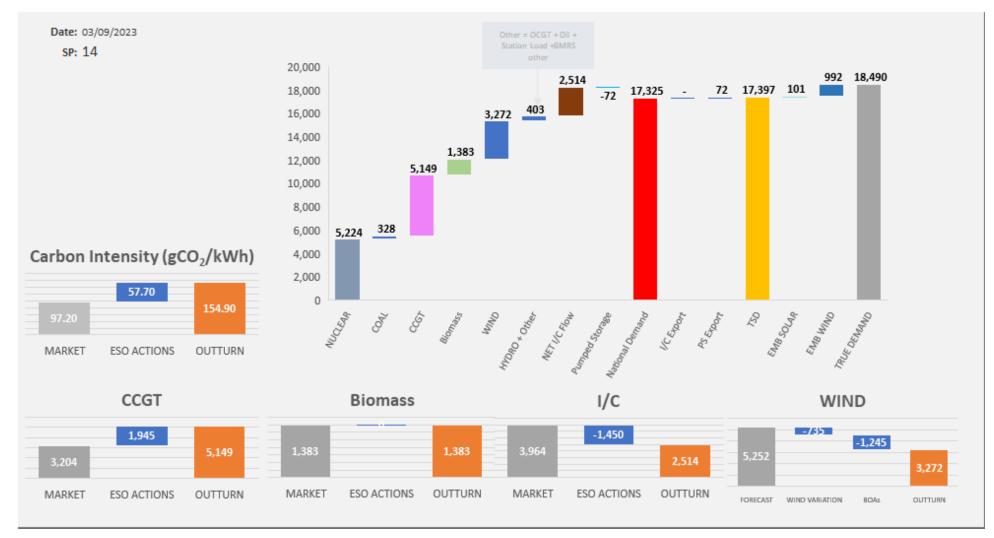
ESO Actions | Thursday 31 August – Peak Demand – SP spend ~£40k



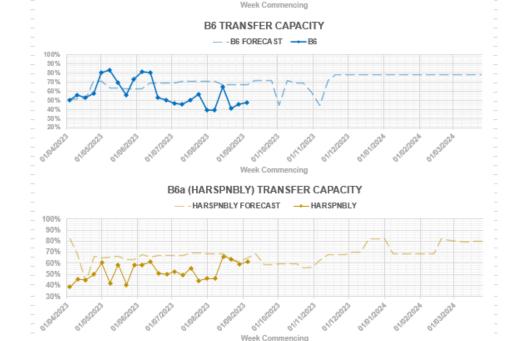
ESO Actions | Monday 28 August – Minimum Demand – SP Spend ~£28k

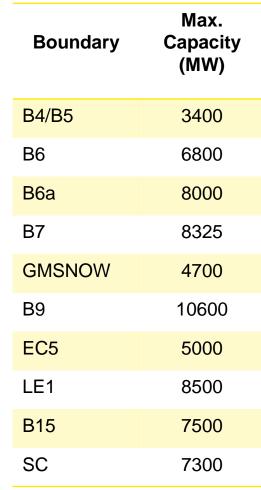


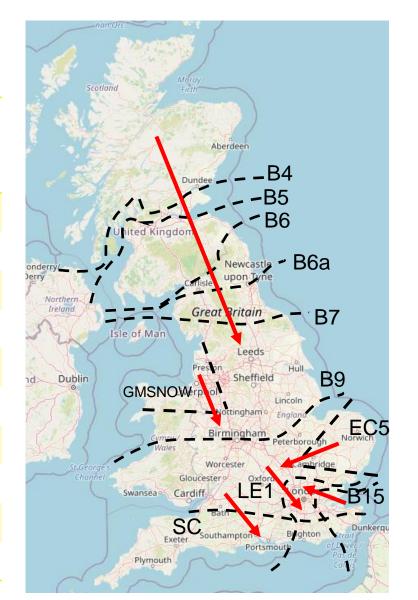
ESO Actions | Sunday 3 September – Highest SP Spend ~£292k



Transparency | Network Congestion

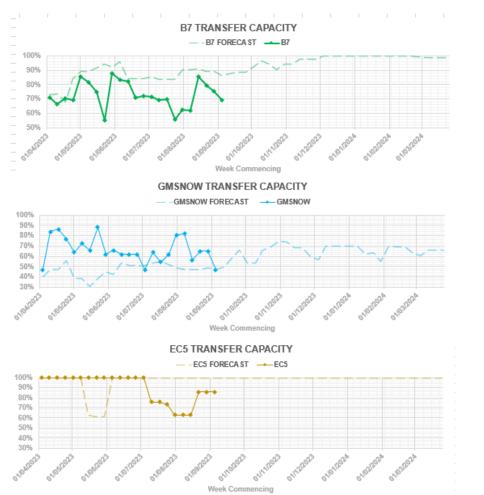




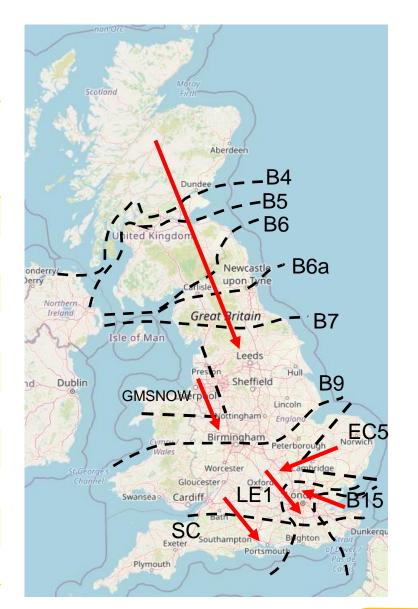


Day ahead flows and limits, and the 24-month constraint limit forecast are published on the ESO Data Portal: <u>https://data.nationalgrideso.com/data-groups/constraint-management</u>

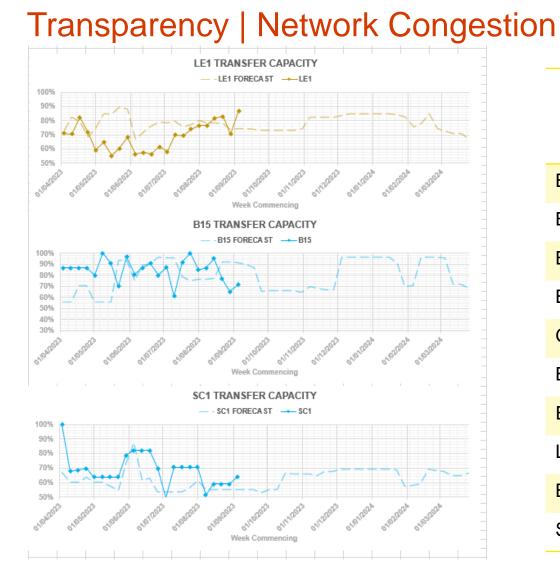
Transparency | Network Congestion



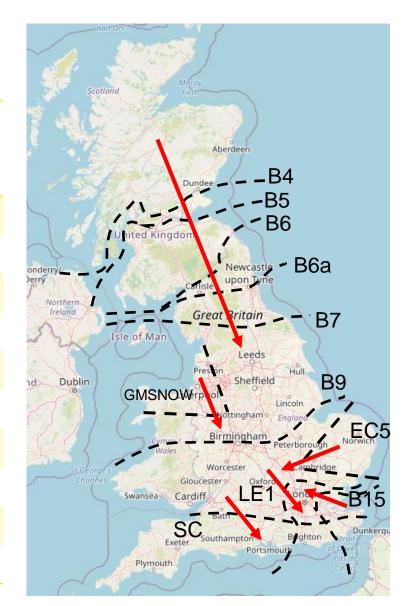
Boundary	Max. Capacity (MW)
B4/B5	3400
B6	6800
B6a	8000
B7	8325
GMSNOW	4700
B9	10600
EC5	5000
LE1	8500
B15	7500
SC	7300



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Advance Question

Q: Please can you provide a worked example of how frequency response and reserve requirements are calculated

A: We have created a slide pack with narrative which gives an explanation of frequency response calculations which has been uploaded to our OTF webpage <u>here</u>. Once we will have Balancing Reserve service live, we will publish how reserve requirement are calculated.

Previously Asked Questions

Q: Is there an agreed definition of what constitutes a 'test' (i.e energy volume / frequency of test)? I understand the need for occasional ad-hoc tests but if it's done often and involves a 'significant' energy volume (cost > £10k? as per Grid Code) it seems reasonable that it should made public.

A: Thank you for your feedback. We publish the intended voltage reduction tests on the BMRS at day ahead stage. This includes information provided by DNOs (Distribution Network Operators). Please see an example below the warning message issued on 5th September for the test on 6th September.

Warning Date/Time	System Warnings				
Warning Date/Time (GMT)	Warning Text				
2023-09-05 09:46	From: Power System Manager - National Grid Electricity Control Centre NATIONAL GRID NOTIFICATION - DEMAND CONTROL BY VR TEST. There will be a short duration localised voltage control test initiated within Southern Electric Power Distribution (SEPD) DNO s area due to commence on 06/09/2023 at 10:30. It is anticipated demand will reduce by approximately 80 MW and will be fully restored by 13:00. Notification Issued at 10:45 hours on 05/09/2023. Issued by Ben Young National Grid Electricity National Control Centre.				

Previously Asked Questions

Q: Dynamic Regulation (DR) curves for 08/20 delivery were a significant shift from usual (they didn't even have the usual overholding region). This makes forecasting (and choosing between products) very hard. Can you explain why you submitted that extreme curve? Do you expect to submit similar curves again?

A: Thank you for your question. The buy orders for Dynamic Regulation (DR) and Dynamic Moderation (DM) on the 20th of August were intentionally different to normal to ensure that we were able to procure the maximum volumes of DM and DR within our existing product caps to provide value during the Women's World Cup final. As you note in your question, we removed the overholding steps that are usually present, these steps for the low frequency products in particular are often the limiting point for volume, with the full 200MW (DRL or 100MW for DML) not likely to clear unless the price is close to or at £0.

Increased uncertainty over the demand level and profile across the World Cup final led us to increase the reserve and response requirements for this period. The increased pre-fault dynamic response requirement would require additional Mandatory Frequency Response (MFR) to be armed in real time on potentially higher priced units, therefore to maximise the value of the DM and DR markets we removed the overholding restrictions on the buy orders to ensure the largest possible volumes were procured within the existing product caps at our forecast price. This is a strategy that we also used during the King's coronation earlier in the year.

The introduction of the Enduring Auction Capability (EAC) platform in the coming months will remove the need for this type of action from two points. Firstly, there is an inherent difference in the treatment of "overholding" in the EAC so the buy order will not feature the multiple steps currently used in EPEX because the market welfare maximisation will include overholding volume if economic to do so. The second key feature of the EAC is that parties can submit bids for more than a single service and as such the co-optimisation of Dx services will reduce the issue of market value signalling ahead of time.

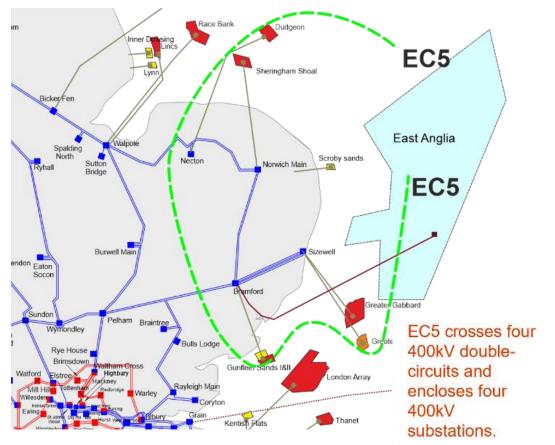
Previously Asked Questions

Q: Which Constraint group represents EC5?

A: EC5 constraints boundary encloses the area around East Anglia. Please see further details about east of England boundaries <u>under the</u> <u>link.</u>

Q: The published Peak Demand Forecast (source OPMR) shows a significant decrease in weeks 44-45 33GW. Is this forecast correct?

A: Thank you for highlighting this. We have identified a data processing error that temporarily affected these weeks. This has now been corrected.



Previously Asked Questions

Q: Could you please provide a brief explanation on how non-BMUs can participate in ancillary services (DC, DM, DR) via Ancillary Services Dispatch Platform (ASDP)? How are Physical Notifications (PNs) submitted and selected by the ESO?

A: The ASDP platform is required for Non BM units to participate in the DC, DM & DR service and forms part of the pre qualification for these services. The ASDP platform is the Mechanism used for functions required by the DC DM & DR services such as availability, PN's, Arming/ Disarming instructions and the heartbeat signals.

Full prequalification for these services is done via the Single Market Platform (SMP). Full prequalification requirements for these service can be found in the Frequency response guidance document. The ESO does not submit or select PNs.

PN or Physical Notification is part of the set of data items which the operator of a BMU must submit into the Balancing Mechanism. This informs the BM and the ESO of the unit's planned levels of generation.

It is defined in the Grid Code, <u>Balancing Code 1</u> in section BC1.A.1.1 as a series of MW figures and associated times, making up a profile of intended input or output of Active Power at the Grid Entry Point or Grid Supply Point.

BM = Balancing Mechanism

BMU = Balancing Mechanism Unit

Advanced Question

Q: In the Authority's recent decision on GC0148 it stated that "we do note that under Article 40 of the NCER Regulation the ESO is obligated to inform certain users, in due time, regarding the state of the transmission system should it enter the emergency, restoration, or blackout state". Given that this is an existing obligation, could the ESO please clearly detail (i) how it informs those users and (ii) does so in due time (which in EU law terms means 'real time'). Authority decision on modification GC0148 - Implementation of EU Emergency and Restoration Code Phase II | Ofgem

A: As per Ofgem's decision on GC0148 where the original proposal was approved rather than WAGCM1 & 2 (which detailed the system state aspect), the quote from Ofgem's decision letter quoted goes on to state:

"Nevertheless, we do note that under Article 40 of the NCER Regulation the ESO is obligated to inform certain users, in due time, regarding the state of the transmission system should it enter the emergency, restoration, or blackout state. However, we believe that codifying this requirement in the Grid Code in this manner removes the necessary flexibility the ESO requires to restore the system in as efficient a manner as possible. This position reflects our position outlined in our rejection of modification GC0133: Timely informing of the GB NETS System State Condition14. Since our rejection of GC0133, we have seen no additional evidence that codifying the notification of system state would provide benefits that outweigh the potential risks to the security of the system."

As a result, compliance with NCER Article 40 is not obligated under the Grid Code however NCER Article 40 does state:

"During the emergency, blackout or restoration states, each TSO shall provide in due time and for the purposes of system defence plan procedures and restoration plan procedures..."

Therefore during events which require a system defence plan and/or a restoration plan, the parties involved in any system defence plans and/or restoration plans will be informed of the system state in order to enact the relevant procedures. This will be communicated via telephone as soon as possible during the event.

Outstanding questions

Q: It seems to take a long time to get responses for reconciliation where mistakes have been made by the ESO in performance monitoring. Can we get more transparency on expected timescales for response, and how many of these kind of tickets are outstanding, and the rate at which they are resolved.

A: Thank you for providing additional detail about the outstanding queries. These have been passed to the appropriate ESO team for action and they will reply to you directly. We will also ask the team to provide a response to the second part of this question for the OTF.

Q: Follow-on for question on non-BM balancing post-IT change: while auction results will be published, there's currently no publication of real-time dispatch. If IT systems are being upgraded to handle real-time data, can we please have real-time dispatch transparency (like we have for the BM)?

Outstanding questions

Q: We have observed acceptance of BM bids and offers from units providing Dynamic Containment, where the BOA results in erosion of DC response capability (e.g. Red Scar battery on 3 Aug 2023).

This scenario is outlined on page 6 of the Unlocking Stacking of BOAs with Frequency Response Services document (https://www.nationalgrideso.com/document/184466/download), but the scenario is described in this document as ""inactive"".

Can NGESO confirm that the control room is now able to issue BOAs to DC units with erosion of DC response capability? And has this been communicated to the market previously?

A: Thank you for highlighting this case, we will look into this instance in more detail. If you are aware of any other examples please share them with us at: .box.NC.customer@nationalgrideso.com. We will come back to you on this forum in more information on this topic soon.

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.
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- **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 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.

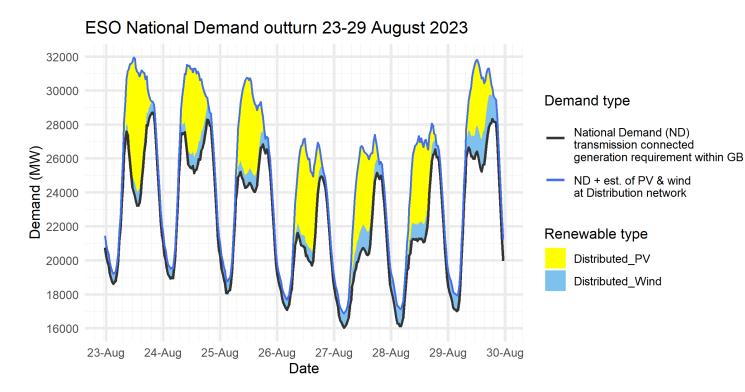
We welcome feedback to understand what we are doing well and how we can improve the event for the future.

If you have any questions after the event, please contact the following email address: box.NC.Customer@nationalgrideso.com

Regular content from last week



Demand | Last week demand out-turn



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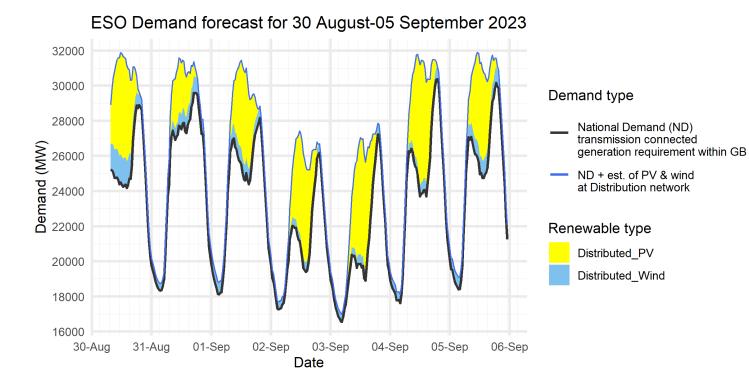
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24 Aug	Overnight Min	18.7	0.7	0.0	18.9	0.6	0.0
24 Aug	Afternoon Min	25.7	0.9	4.4	25.1	0.9	5.2
25 Aug	Overnight Min	18.6	0.7	0.0	18.1	0.7	0.0
25 Aug	Afternoon Min	22.4	1.4	5.6	24.0	0.9	4.2
26 Aug	Overnight Min	17.3	0.8	0.0	17.1	0.6	0.0
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28 Aug	Overnight Min	16.6	0.8	0.0	16.1	1.0	0.0
28 Aug	Afternoon Min	18.6	1.2	5.6	21.1	1.1	4.5
29 Aug	Overnight Min	16.8	1.2	0.0	17.0	0.9	0.0
29 Aug	Afternoon Min	24.2	1.7	5.2	25.2	1.9	3.6

Demand | Week Ahead



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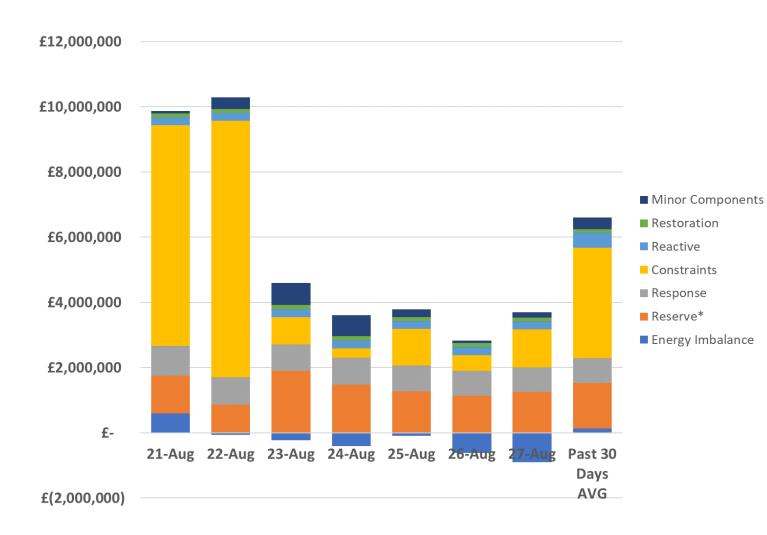
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02 Sep 2023	Evening Peak	25.9	0.5
03 Sep 2023	Overnight Min	16.5	0.4
03 Sep 2023	Evening Peak	26.6	0.6
04 Sep 2023	Overnight Min	17.6	0.5
04 Sep 2023	Evening Peak	30.3	0.7
05 Sep 2023	Overnight Min	18.4	0.7
05 Sep 2023	Evening Peak	30.2	1.0

ESO Actions | Category costs breakdown for the last week



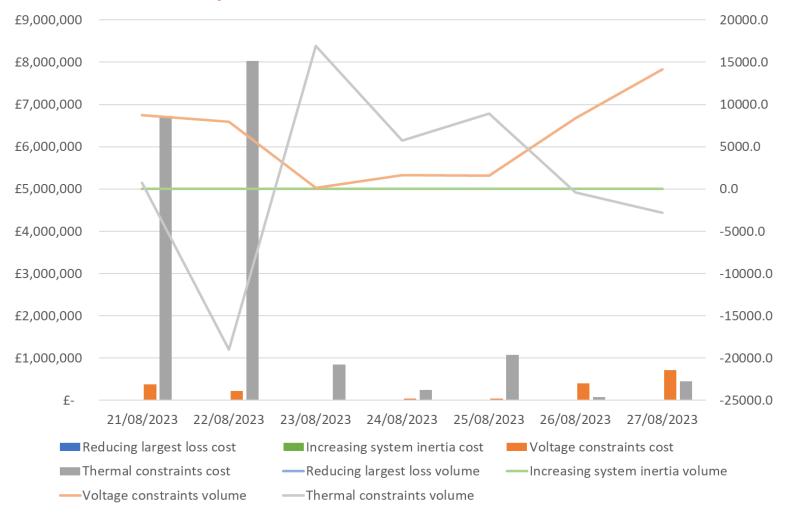
Date	Total (£m)
21/08/2023	9.9
22/08/2023	10.2
23/08/2023	4.4
24/08/2023	3.2
25/08/2023	3.7
26/08/2023	2.2
27/08/2023	2.8
Weekly Total	36.4
Previous Week	51.2

Constraints 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. The most significant costs were on Monday and Tuesday.

Voltage

Intervention was required to manage voltage levels throughout the week, except for Wednesday.

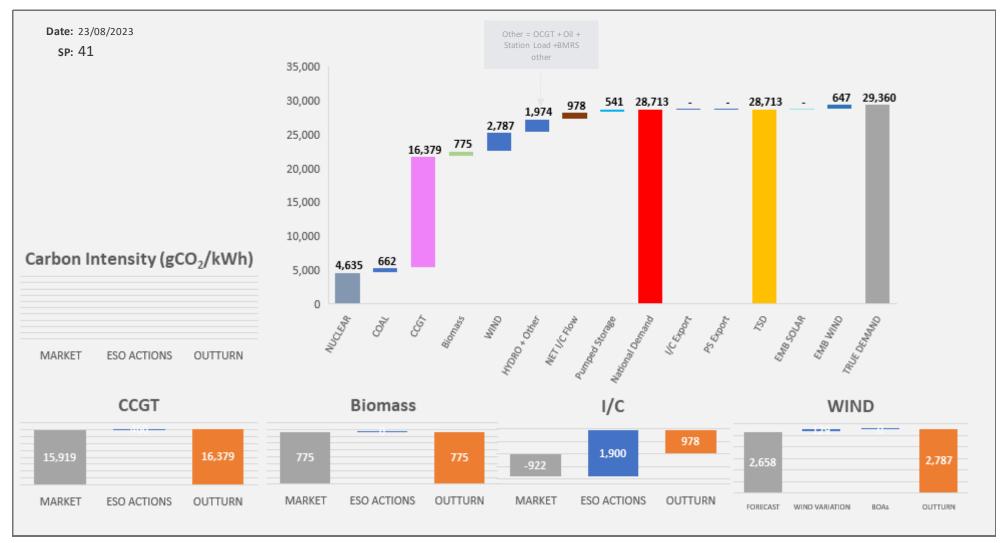
Managing largest loss for RoCoF

No intervention was required to manage largest loss.

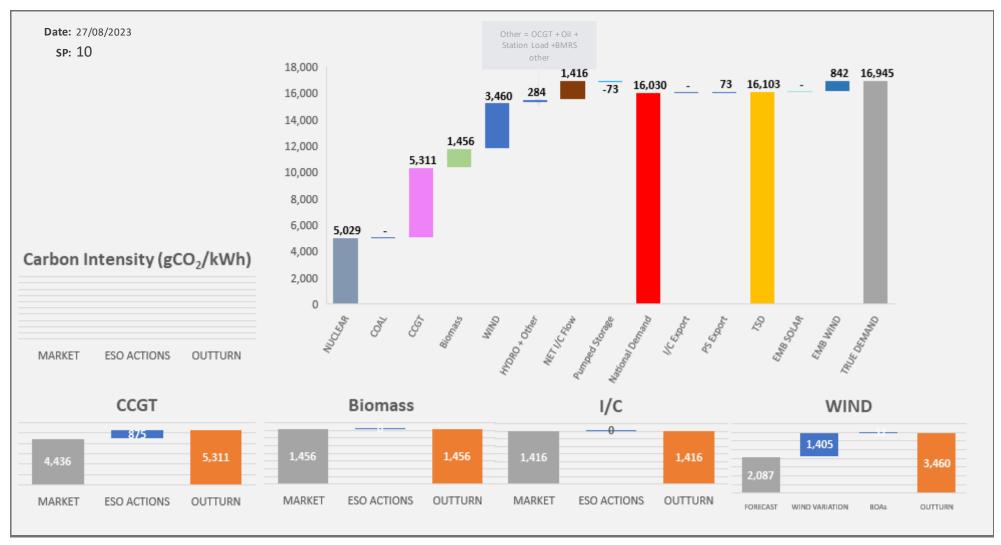
Increasing inertia

No intervention was required to manage System Inertia.

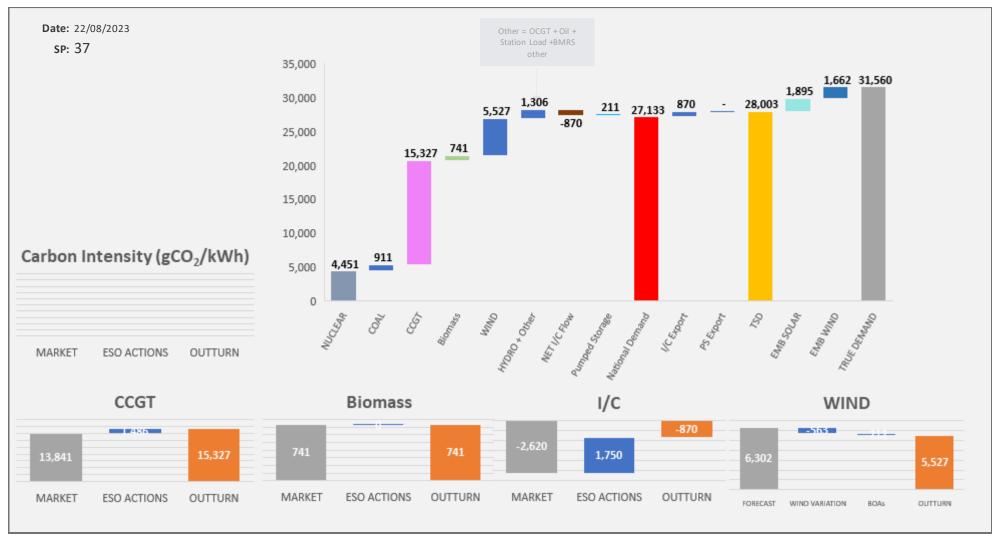
ESO Actions | Wednesday 23 August – Peak Demand (SP 41) ~ £157k



ESO Actions | Sunday 27 August – Minimum Demand (SP 10) ~ £28k



ESO Actions | Tuesday 22 August – Highest SP Spend (SP 37) ~ £559k



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 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