Dispatch Transparency Event – 2nd June 2023 – Reporting & Incentives

Q: This may be covered later, but are 'skips' reported to the regulator (or other body), so they can investigate and ensure you are meeting your license conditions

A: The ESO has a licence condition to operate efficiently and economically and a target to reduce the balancing cost as much as possible. There is no requirement to dispatch in strict merit order.

We meet with Ofgem regularly to discuss our performance – and run them through examples of dispatch and decisions taken. This combined with our monthly reporting, the BM Audit and the Balancing Principles Statement Audit provide assurance of our activities against our licence requirements.

We report our performance to Ofgem in our Monthly Report under *RRE 1E and these reports are published on our website at: How we're performing under RIIO-2 | ESO (nationalgrideso.com)

We publish data about Dispatch Transparency on the ESO Data Portal at:

ESO Data Portal: Dispatch Transparency - Dataset| National Grid Electricity System Operator (nationalgrideso.com)

*RRE = Regularly reported evidence

Dispatch Transparency Event – 2nd June 2023 – Reporting & Incentives

Q: Do the ESO have the ability to deliver these improvements? I remember the EDL 'star' debacle allowing profiled SELs.

A: This forms a key part of our business plan for the next 2 years, and we are committed to this. Our performance is closely monitored by Ofgem as our regulator and reported externally through our stakeholder engagements.

Q: Do you have a KPI for monitoring and reducing meter over-rides?

A: Yes and ESO teams regularly liaise with parties involved.

Q: Do you have any success criteria for the OBP programme e.g. how much will skips (or types of skips) be reduced by with the release in Dec?

A: Our performance is closely monitored by Ofgem as our regulator and reported externally through our stakeholder engagements.

Dispatch Transparency Event – 2nd June 2023 – Reporting & Incentives

Q: Do you have metrics to assess the cost-effectiveness of your decisions? Are they public? E.g. is procuring MFR and arming cheaper than procuring more DC/DM/DR?

A: We meet with Ofgem regularly to discuss our performance and run them through examples of dispatch and decisions taken. This combined with our monthly reporting, the BM Audit and the Balancing Principles Statement Audit provide assurance of our activities against our licence requirements.

We report our performance on Balancing Costs to Ofgem in our Monthly Report under Metric 1A and these reports are published on our website at:

How we're performing under RIIO-2 | ESO (nationalgrideso.com)

Dispatch Transparency Event – 2nd June 2023 – Operational Dispatch

Q: Are you confident you understand the part BESS (Battery Energy Storage System) can play in helping supporting the ESO? often lowest price, MNZT and RUR/RDR

A: We are continually reviewing our requirements and the role that all technologies can play in this – this is wider than just the dispatch transparency topic.

We are grateful for stakeholder feedback in this area and are working to make sure we do understand the system requirements and translate this into products and services that the market can deliver.

Q: Thermal plant are instructed in the BM to provide + margin. How do you ensure that flexible assets, that provide this for free (no MNZT/MZT) get treated fairly?

A: All plant instructed in the BM using the parameters and price data submitted. The scenario in Will's section referred to large conventional generators for simplicity of example. Flexible assets are included in the plans, but do not need to be individually scheduled like the larger BMUs, they are planned in bulk.

Q: Can you talk more about the dispatch of the Battery 'zone'? Does it sit with NBE/ZBE/Both?

A: This sits on all energy dispatching desks including the Operational Energy Manager (OEM) when required. The control of the Battery zone will be moved around the control engineers depending on real-time workload.

Dispatch Transparency Event – 2nd June 2023 – Operational Dispatch

Q: How do you coordinate between zones? E.g. avoiding reversing one another's work when dealing with an unexpected deviation

A: All dispatching control engineers have visibility of the actions taken by their colleagues and at no point is one zone being dispatched by multiple control engineers at once.

Q: How does the control room dispatch cases where the National Balancing Engineer's programme is proving wrong in real time, but hasn't been updated yet?

A: All dispatching control engineers dispatch to the programmes set by the NBE but relative to the system frequency. The programmes are a forecasted guide as to what the output of each zone would be to most optimally meet demand if the actual demand and other system conditions deliver as forecasted. If the system conditions do not deliver as forecast the positive or negative shortfall will be visible in the system frequency behaviour.

Q: Slide 33 (Current system improvements to address skip rates) mentions 'nuisance alarms'. Which alarms are proving most nuisancesome, out of curiousity?

A: Some alarms were defined to meet contemporary risks which are no longer relevant. An example is an alarm linked to ‘large’ wind output, where large was defined when there was < 2000MW of wind capacity and very little of it was commercially available in the BM. We now have much more experience of working with wind, the vast majority of which is commercially available in the BM, so this type of alarm is no longer required. We now have much more experience with wind and are reviewing unrequired alarms.

Dispatch Transparency Event – 2nd June 2023 – Operational Dispatch

Q: You've helpfully mentioned several systems (EDL, EDT, OBP, SORT). Can you please briefly summarise any others that directly or indirectly affect dispatch

A: There are currently three systems which are used to instruct bids / offers for assets:

a) SORT where instructions are manually created by the control room engineers
b) VERgil which is used to create bulk instructions
c) ASDP which is used to instruct non BM ancillary services.

OBP release 1 in December 2023 will introduce capability which Bernie has discussed earlier.

There is overarching system architecture which is quite complex and will be too difficult to describe here but in essence dispatch decisions are made based on the information which Will described and these data sets/forecasts are provided via a variety of systems. This complexity has been previously described at our regular quarterly balancing programme engagement events which are open to everyone to attend.

Q: ESO shift teams have their favourite sites/assets, tried and trusted and often bias towards them in balancing actions - Fact or fiction?

Q: By putting certain asset into 'handy' groupings is there a possibility that some Control room decisions might lean towards a shift's favourite class?

A: No, the control room always instructs according to the parameters and price data submitted and the requirements to meet the system conditions.

Dispatch Transparency Event – 2nd June 2023 – Operational Dispatch

Q: Our assets receive requests which violate its dynamic constraints, particularly the activations are too long. Do we expect that to improve soon with updates?

A: If instructions are sent outside of the submitted parameters, these instructions are allowed to be rejected under the Grid Code and must be followed up by a call to the Control Room explaining the reason for the rejection.

Q: Where you talk about poor metering and overrides, what metering areas currently are the most problematic?

A: There are no specific areas. However not receiving accurate information will impact on the levels of reserve & response we hold. This is an area of focus for ESO to resolve and address with individual parties as required.

Q: These details are great. Seems like a lot to think about and dispatch quickly. In practice, if ENCC needs, say, 100MW dispatch ASAP, how can they quickly act?

A: It depends on the available resources at the time, but typically BOAs will take 1-2 minutes to start delivering from the point of instruction and between 1-5 minutes to deliver it.

To achieve a large rapid change, many small changes might be instructed across multiple units to achieve the highest combined ramp rate.

Dispatch Transparency Event – 2nd June 2023 – Operational Dispatch

Q: Does ESO do a Post event evaluation of how well vs optimal decisions a day has been managed. i.e. to feed back to ENCC shifts?

A: The operational teams continually review their decisions and performance in real-time and between teams. Best practice is shared wherever possible. We also regularly provide an overview of operations on specific days to the Operational Transparency Forum which takes place on Wednesday mornings:

Operational Transparency Forum | ESO (nationalgrideso.com)

Q: If a unit is contracted for an ancillary service does this impact a BOA decision? Is the NBE, ZBE, Small BMU BE aware of which service is contracted?

A: The parameters which should be submitted to ESO whilst contracted to provide an ancillary service are detailed in the onboarding guides and rules for the ancillary service. These are designed such as to protect the volumes being provided as per the contract whilst allowing any additional volume the be made available to the BM. The Control Room will dispatch according to the data submitted.

Q: Are a units FPNs allowed to violate its own dynamic data?

A: The Grid Code requires that the submitted dynamic parameters accurately reflect the actual operating conditions of the units as much as possible, and FPNs should be consistent with the dynamic parameters

Dispatch Transparency Event – 2nd June 2023 – Forecasts

Q: How long ahead do you typically assess whether the market is short relative to demand? A large share of the intraday volume is traded after BM gate closure, and definitely in the last hour-hour and a half before delivery.

A: The Strategy team begin assessing system margin's from 11am for the Day-ahead. From 11am the Strategy team will begin assessing the Day-ahead and will prioritise the most significant Demand Peak or Trough of the Day-ahead. They will then carry out the scheduling processes for the remaining Demand Peaks or Troughs in the order of significance.

Dispatch Transparency Event – 2nd June 2023 – Datasets

Q: The scheduling examples given (Day A/B, Gen 1/2 slide 12) appear to be for thermal generators. Roughly what % of decisions are taken on these "old school" gens?

A: This data is available using the BOA data provided on Elexon BMRS (Balancing Mechanism Reporting System).

www.bmreports.com www.elexonportal.co.uk

Q: Naive question, whether we are scheduling margin or energy, we are activating assets right? Or is there a way of knowing why BOAs were scheduled.

A: All BOA are flagged as either Energy or System by the control room engineer and these flags are visible for every BOA on the Elexon BMRS (Balancing Mechanism Reporting System).

www.bmreports.com www.elexonportal.co.uk

More detailed reasons are also included in the Dispatch Transparency dataset published on the ESO Data Portal at:

ESO Data Portal: Dispatch Transparency - Dataset| National Grid Electricity System Operator (nationalgrideso.com)

Dispatch Transparency Methodology assigns a “Unit Commitment” reason for assets instructed for margin. These are previous actions that need to be continued due to minimum non-zero times and minimum zero time (if BOA’d off). Identified by Offers to Stable Export Limit, or Bids to Stable Import Limit.

Dispatch Transparency Event – 2nd June 2023 – Datasets

Q: Can you speak to data quality? Skip reason code outcomes are inconsistent & seem riddled with errors/gaps, especially during times of high bidding activity.

A: In 2022-23, over 575,000 BOAs were issued and of these 0.4% were actions with no allocated reason code. These codes are allocated by an automated process using the published methodology.

We have had an issue with missing data for a small number of days last year which we are aware of.

Our incentive for this BP timescale has a focus on providing greater transparency of our actions and we are committed to developing this further, this event being one of these initiatives.

The post-event survey includes the opportunity to comment on the current dataset and we will use this information to engage with you further when we review the current automated Dispatch Transparency process.

Q: Are ESO open to reforming the reason code to include limitations of manual dispatch, noting the Ofgem DD of RRE 1E? Seems current code is not fit for purpose.

A: As mentioned previously the post-event survey includes the opportunity to comment on the current dataset and we will use this information to engage with you further when we review the current automated Dispatch Transparency process.

Dispatch Transparency Event – 2nd June 2023 – Datasets

Q: How can transparency of skips as they are taken be improved to provide the required price signal to the market.

A: New tools will require a reason to be allocated at dispatch point – further discussions are required on when/how these are made available to the wider industry and what datasets might be possible and required.

Q: Should 'known skips' that are used for frequency response etc. have a flag that removes them from cash out to avoid distorting mkt signals, similar to 'system' BOA's?

A: Yes they do have a flag – the Continuous Acceptance Duration Limit (CADL)

Q: DT Methodology tags actions with Time to Target < 5m as Frequency Control. This masks skips between assets with same dynamics. Will you change this after OBP?

A: As mentioned previously the post-event survey includes the opportunity to comment on the current dataset and we will use this information to engage with you further when we review the current automated Dispatch Transparency process.

Q: Are any steps being taken to address the data quality issues which lead to corrective balancing actions?

A: Yes – we regularly liaise with control points as and when data quality is an issue.

Dispatch Transparency Event – 2nd June 2023 – Datasets

Q: From the dispatch transparency data, each BOA will often have several units with no reason codes against them for not being dispatched. Why/where are they?

A: The 'All BOAs' dataset doesn't list the reason code if there are multiple alternative BOAs. The reason codes for these are listed in the 'Potential Alternatives' dataset.

All BOAs: https://data.nationalgrideso.com/backend/dataset/93ebb15e-4c2c-4768-9750-45c2789f4186/resource/1e5dbdc1-58af-41db-ae20-d0f68cd7f417/download/all-boas.csv

Potential Alternatives: https://data.nationalgrideso.com/backend/dataset/93ebb15e-4c2c-4768-9750-45c2789f4186/resource/adf4e604-9936-4813-8dec-811193352ba0/download/potential-alternative-actions.csv

Q: Just to be clear as to my above Q RE Reason code sub-1% unaccounted for does not mean reason code is right, as indicated by manual dispatch limits and RRE 1E

A: Thank you for the clarification, I look forward to receiving your comments in the post-event survey and we will use this information to engage with you further when we review the current automated Dispatch Transparency process.

Dispatch Transparency Event – 2nd June 2023 – Balancing Programme

Q: Will OBP be used for some zones only - sitting alongside SORT as an additional tool? Is the plan to replace SORT with OBP entirely in the long run?

A: In the interim OBP and SORT must work together but eventually OBP will replace SORT.

Q: Are you confident of having the new systems in by December? Why is this going better than EBS?

A: The software for Bulk Dispatch is already available but we do have a dependency on a new Data Centre. Our new DC is on track for December 2023 but we are obviously monitoring this.

OBP is being delivered using a Scaled Agile approach – so instead of a big bang switch over after several years we will be delivering new functionality into production every three months. In this we will know very quickly if things are delivering value or not.

Q: How will Bulk Dispatch interact with engineer discretion especially on high stress days? What will be the process for taking back the wheel/removing units to hold over?

A: The old legacy system will still be in place so control engineers can fall back to the old system. However control engineers have already seen the new system and want it early so I think they will use this. They can mark units as being “restricted” so they are not used in the new optimiser but must give a reason so that we can maintain audit trail.

Dispatch Transparency Event – 2nd June 2023 – Balancing Programme

Q: Re. enhanced optimisation tool does that mean that at point of dispatch, BM, STOR et al will be rolled into one, and CR won't know which they are dispatching?

A: Yes - all services will be harmonised together, optimised, and then de-harmonised into the correct instruction type.

Q: What is the timeline for adding MDVI/MDVE to dynamic data? That would allow the Control Room to dispatch limited duration assets with higher confidence.

Q: Technical parameters for BESS assets e.g maximum duration was mentioned earlier in the year. What is the status of this?

A: We are discussing proposals for creation of state of energy data/signal for storage assets with our storage stakeholder group formed as a result of our balancing programme engagement events and the plan is to take these proposals to grid code development forum.

Q: Will OBP replace ASDP? What are the timelines for combining NBM and BM dispatch?

A: Yes, it will replace ASDP. On our roadmap we plan to complete this in September 2025. We will start the work on this in early 2024.

Dispatch Transparency Event – 2nd June 2023

Q: 29th May negative BSAD down to £-554/MWh on interconnectors. There were cheaper actions available. Is interconnector short term inflexibility making these 'acceptable' skips happen?

A: We are only running through BM dispatch at this presentation – however Will has covered some of the additional uncertainty that sits with options not accessed through the BM. In operational timescales the control engineers will be looking at the best cost and operational options for each particular scenario and day. This will also include looking ahead to future uncertainty – which may not immediately be apparent when comparing costs accepted in real time.

You may be interested in the Operational Transparency Forum from Wednesday 7th June as it included an overview of operations over some recent dates including the last Bank Holiday. You can also access the webinar from 8 March which included a deep dive about SO-SO Trades and Interconnectors.

Operational Transparency Forum | ESO (nationalgrideso.com)

Q: Is margin a fixed MW quantity, or does the ESO have some flexibility around it? Depending on the prices being offered by market participants

A: The margin volume depends on the wider system conditions and the resulting increased volatility from those conditions, e.g. high-wind conditions provides a greater risk that wind generation maybe over of under delivering including the possibility of wind-cut-out. ESO forecasts these conditions as accurately as possible and increases or reduces the margin requirements accordingly.

Required margin is fixed depending on the day and timescale operating in, operating margin requirement gets less the closer we get to real time.

Dispatch Transparency Event – 2nd June 2023

Q: What's behind having balancing actions out-of-merit that are not system flagged? This can have a considerable impact on the imbalance price

A: As we showed, the price (£/MWh) is not the only factor in making decisions. The ESO's role is to minimise total cost (£) while meeting its operational requirements.

The System Tagging Action Methodology Statement (in accordance of Standard Condition C16) documents the application of system flags and is reviewed annually. (https://www.nationalgrideso.com/document/189531/download)

Q: If margins are critical for the ESO, why isn't there an Ancillary Service to procure them in advance?

A: You might be aware of our reserve reform work which covers this area, and other areas – work is actively ongoing to understand what can be available in the market to help us meet this, and a number of operational requirements.

Q: Please can we get a short recap/explanation of the "zones"? Wasn't explained well before moving on to the following slides, which was quite confusing. Thanks!

A: The zones are a way of grouping assets and providers in our IT systems by similar parameters of each asset.

Dispatch Transparency Event – 2nd June 2023

Q: Are you looking at integrating Artificial Intelligence into the control room to improve efficiency, automate tasks and reduce engineer workload?

A: Yes, both through our Balancing Programme and NCMS programmes.

Q: Sometimes the ESO dispatches units beyond their bid-offer lines. This appears to be more frequently over time. Why are these deemed bids used?

A: Please can you share an example of this with us to review?

Q: By selecting a slow asset to ensure a faster unit is available for balancing, are we not disincentivizing batteries which want to be activated and are cheaper.

A: We are always looking to minimise balancing costs, so this is not a common scenario, however it sometimes does occur. In the scenario, the ESO would not be able to meet its obligations if it did not instruct the slower unit early.

Q: Do the ESO run a digital twin or similar, to provide feedback post-event on how well a decision out turned?

A: Please find information about our Virtual Energy System here: https://www.nationalgrideso.com/future-energy/virtual-energy-system

Dispatch Transparency Event – 2nd June 2023

Q: If you have to take inflexible plant first you leave flexible assets not despatched. Do you think we need to address the disadvantage of being inflexible?

A: We are continually reviewing this through our activities and the impact on individual providers. We will take this, and all the feedback from this event into ESO for our colleagues developing services, systems and products.

Q: The point of the question about using MNZT to manipulate the BM is not about a specific unit but whether you believe the current setup opens the door to that.

A: We will pass this question on to the Market Monitoring team for awareness.

For any additional concerns please contact MarketMonitoring@nationalgrideso.com

Q: Can you talk a bit about demand response services on the household level and if you see them play a big part in the future of balancing?

A: We will be holding a webinar on this topic soon – so please look out for this.

In the meantime, our flexibility services and demand side products feature as case studies in our end of year report which may prove useful – as well as the Future Energy Scenarios work.

Dispatch Transparency Event – 2nd June 2023

Q: Are some units, i.e. Pumped storage assets, making themselves artificially inflexible to benefit from the BM? Dinorwig has a 180min MNZT for example

A: We are not going to comment on behaviours of specific units or fuel types. If you would like to raise a concern to our Market Monitoring team please contact us at MarketMonitoring@nationalgrideso.com and this will be reviewed by the team. Alternatively please use the route via Ofgem.

Q: Can you please explain the 15 minute rule with regard to batteries?

A: We will instruct energy limited assets (e.g. batteries) with bid and offer instructions for up to 15 minutes which allows for the resubmission of Maximum/Minimum export limits to ensure any ongoing/future bids or offers will be viable. This is why we are engaging through the storage stakeholder group, which we are looking to address state of energy/charge signal to eventually remove the need for the 15-minute rule.

Q: AIR sometimes incorrectly tags BOA's as 'energy' when 'system'. Is there any oversight of repeated instructions when AIR is despatching? (Affects cash out)

Q: Please say a little more about how AIR works. I.e. in what cases does it send an instruction. Can it ever automatically extend out of merit, causing skip?

A: We are investigating the whether AIR sometimes tags BOAs incorrect and will provide an update at a future OTF and update this document with an answer.

Dispatch Transparency Event – 2nd June 2023

Q: Feedback: Pls use less abbreviations, ensure slides are self explanatory, explain things clearly & avoid skipping slides w/o explanation (1st part of webinar).

A: Thank you for the feedback, we will be aware of this for future events.

Q: Why are anonymous questions not considered important enough to look at? I can understand deprioritising but why "delete" things that could be of use?

A: ESO does not consider anonymous questions less important but including a name encourages openness and transparency across all parties. Also, if there is any follow up needed, we can provide it.

These questions asked at the event are not directly related to the dispatch transparency topic, but shown here for a full representation of the topics covered. We will pass these questions onto the right teams within ESO to inform their ongoing work.

Q: Why not just make CVA free and then make everyone become a BMU?

Q: Do you believe that a limitation of 2 break points hinders ESO to plan/dispatch, as generators cannot accurately profile their BMU output, some need 4/5 BP's.

Q: If embedded generation creates uncertainty, why doesn't NGESO raise rule changes to require DNOs to collect data from gencos on their systems for you?

Q: Do NGESO support DESNZ's proposal to move to central despatch? If so, how long will it take to rebuild GOAL?

Q: Any plans to procure margins DA to avoid high cost of reserve in the BM?

Q: ESO is supporting central dispatch and LMP. What would be the impact on this long-awaiting IT improvements if the decision is LMP & central dispatch?

Q: Do you still intend to move to any asset above 1MW being a BMU?

Q: Are there plans to overhaul dynamic parameters to ensure all asset types can be represented, and imbalances are minimised?

Q: If embedded generation creates uncertainty, why doesn't NGESO raise rule changes to require DNOs to collect data from gencos on their systems for you?

Q: Didn't answer the question. Not talking about CADL - talking about longer duration BOA's taken out of price order for freq. resp. etc.

Q: Re: outside-BM units, to what extent do you forecast their impact, and if so, how? Do you have a sense of what factors drive behaviour? How do you manage them?