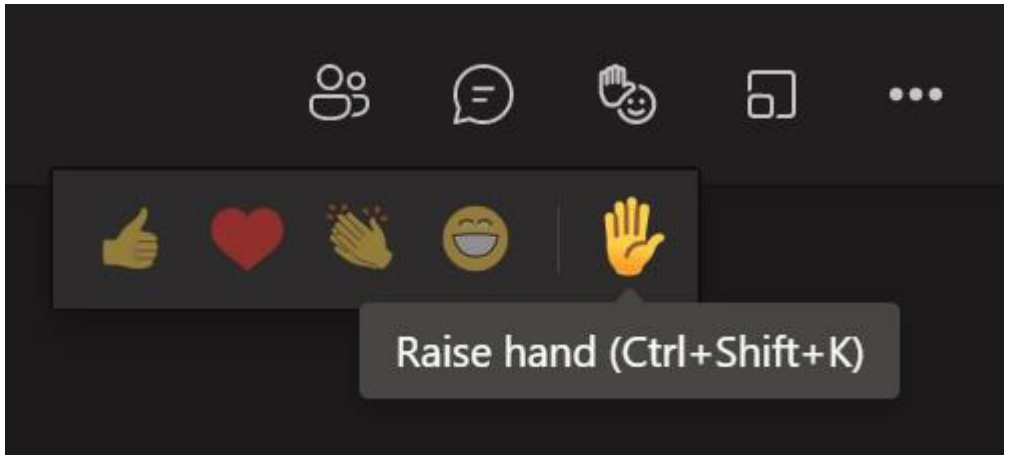
Issue 98 Digital Meeting Etiquette

- Welcome to the Issue 98 Workgroup meeting 2
- No video please to conserve bandwidth
- Please stay on mute unless you need to talk – use the Raise hand feature in the Menu bar in Microsoft Teams if you want to speak, or use the Meeting chat



- Lots of us are working remotely – be mindful of background noise and connection speeds

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Issue 98
Review of the current practice of setting Dynamic Parameters within the Balancing Mechanism

Workgroup Meeting 2

4 February 2022

Meeting Agenda & Objectives

- Recap of Workgroup Meeting 1
- Discuss action updates
- Discuss and confirm the solution
- Confirm next steps following the conclusion of the Issue Group

Agenda Item	Lead
1. Welcome and Meeting objectives	Elliott Harper (Chair)
2. Recap of Workgroup Meeting 1	George Crabtree (Lead Analyst)
3. NGESO Actions Update	Keren Kelly and Steve Baker (NGESO)
4. Introduction of Modern Dispatch Instructor	Bernie Dolan (NGESO)
5. Ofgem Actions Update	Robin Dunne (Ofgem)
6. Group Discussion	Workgroup
7. Conclusion of the Issue Group	George Crabtree
8. AOB & Meeting close	Elliott Harper

RECAP OF WORKGROUP MEETING 1

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Recap of Workgroup Meeting 1 (1 of 3)

- Workgroup Meeting 1 was held on 25 November 2021
- Elexon explained that Issue 98 had been raised to review the current practice of setting Dynamic Parameters within the Balancing Mechanism
- The proposer and Elexon outlined the interaction between Regulation on Wholesale Energy Market Integrity and Transparency (REMIT) and dynamic parameters, communications from Ofgem on this matter, and relevant case history
- Members suggested that there are physical and commercial parameters competing and all physical operations are translated into a cost. The issue is more complex than potentially what the current arrangements are able to accommodate

Recap of Workgroup Meeting 1 (2 of 3)

Solutions

- Members established that for the majority of dynamic parameters there is not a clear distinction between technical and commercial ‘limits’

- The Workgroup discussed three potential solutions:
  - Alter the definition of dynamic parameters
  - Allow variations of BOA / dynamic parameters
  - Create a new set of parameters

Types of Parameters

- The Workgroup agreed that all parameters were a mix of commercial and technical but some tend more towards one or the other

- The Workgroup noted that whether a parameter is technical or commercial is often defined by the person making the decision, either at the plant or by the commercial team

- The Workgroup noted a number of reasons that participants would want to use dynamic parameters for a combination of technical and commercial signals:
  - Issues around maintenance & costs (when plants have to come on and off)
  - Considerations of emissions

Recap of Workgroup Meeting 1 (3 of 3)

Actions:

- **NGESO** will investigate benefits that the control room gains from the current sets of dynamic parameters.
  - Covered in NGESO slides

- **NGESO** will investigate how they reflect the different configurations a CCGT can run under.
  - Covered in NGESO slides

- **Ofgem** will consider whether changing the definition of a dynamic parameter from technical to commercial has a material impact on when information relating to those parameters may be considered to be misleading.
  - Ofgem to provide verbal update at meeting

- **NGESO** and **Ofgem** will investigate whether each megawatt is treated equally. Is there a distinction between tech type and alternative services that each plant can offer? In that case, are the dynamics viewed any differently?
  - NGESO and Ofgem to update at meeting

- **Elexon** will look to get more Aggregator and VLP membership for future meetings.
  - Elexon has attempted to reach out to all the VLPs signed up to the BSC and has managed to acquire additional membership

Issue 98 Work Group

Dynamic Parameters

Keren Kelly & Steve Baker | 4th February 2022

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Contents

- **NGESO actions from WG1**
  1. NGESO Control Room use of the current set of Dynamic Parameters
  2. How NGESO reflects different CCGT Configurations
  3. NGESO/ Ofgem to investigate whether each MW is treated equally;
     - Is there a distinction between technology type and alternative services that each plant can offer?
     - In that case are the Dynamic Parameters used any differently?

- **Examples of Dynamic Parameters usage**

- **Questions for WG**

- **Options for consideration**

- **Introducing MDI**

- **Appendices**

NGESO WG1 Actions update

1. Use of the current set of Dynamic Parameters by Control Room

- Dynamic Parameters benefit the system and consumer:
  - Provide the ESO with visibility of the operating characteristics of generation plant
  - Form part of the data that allows the ESO to take optimal, economic actions
  - Provide efficient means for ESO and Generators to apply rules flexibly for benefit of consumers

RISK:

- Changes could reduce visibility (measurement) of whether actions taken are truly in the best interests of the consumer

NGESO WG1 Actions update

1. Use of the current set of Dynamic Parameters by Control Room

EXAMPLE: Run-up rates

- Run-up rates provide the ESO with data to understand how long it will take for a plant to reach full load
- Control Room aim to synchronise full load with peak demand

  - Plant A takes three hours to reach full load, Plant B takes one hour to reach full load

  - If price/cost the same, ESO will instruct whichever plant allows for full load to coincide with peak demand

- The ESO also have to factor in other system requirements as well as MW, for example:
  - Inertia
  - Voltage

- To get access to energy quickly, sometimes very fast run up rates are beneficial
- Sometimes ESO want slow run up rates (to ensure synchronisation) but at a lower energy output, as experienced in periods of low demand.

NGESO WG1 Actions update

1. Use of the current set of Dynamic Parameters by Control Room

EXAMPLE: Minimum Zero Time (MZT) / Minimum Non-Zero Time (MNZT)

- Limits which generation plant is available to the Control Room and at what times
- In turn dictates the available options which can be called on to balance the Grid
- Cost is still the principal determinant for ESO

- Core considerations:
  - ESO looks for most economical way to balance the system
  - Generators have operational considerations - could technically start and stop several times
    - how many starts/stops are required?

NGESO WG1 Actions update

2. How the ESO reflects different CCGT configurations

- A CCGT comprises one or more gas turbines which will generate electricity, but may also be used to provide the thermal input to a steam turbine

- Depending on the mode of operation CCGTs may have different Stable Export Limits and possibly run-up/run-down rates, for example:
  - It is up to the generator to select how they wish to operate their plant and to input dynamic parameters that reflect this.
  - The Grid Code permits the resubmission of Dynamic Parameters, and the different operating modes are a genuine difference in technical capability

- This would also potentially be a good example of a 'super SEL' type of service; running without the steam turbine is less efficient but would allow a lower SEL.

- During very low demand periods it would be helpful to the ESO by allowing synchronous generation to be kept on the system but there is a cost involved if this were to be instructed.

- **The less efficient operation of the CCGT running at a lower SEL is accounted for through the super SEL contract**

- Super SEL allows Control Room to optimise plat usage, decrease the sum of minimum MW level of generators synchronised on the system

- Super SEL is already in situ and permits discretion on suitable usage by TSO and Generators

NGESO WG1 Actions update

3. Investigate whether each MW is treated differently;

Is there a distinction between technology type and alternative services that each plant can offer?
In that case are the Dynamic Parameters used any differently?

- Main priority is keeping lights on at lowest overall **cost** to consumer
  - Decisions are based essentially on cost – i.e. technology agnostic*
  - Below cost, energy availability is the main differentiator, and Control Room use awareness of technical/ practical constraints:
    - Pumped storage not able to run continuously
    - Solar energy not available 24hrs
    - Time to bring generation on stream
- In real time cannot practically add too many additional factors as this would impede decision process

*Transmission Licence Standard Condition C7

Examples of Dynamic Parameters Usage

- ESO Control Room look at all available information to make the best decisions for the Consumer

- However, any reform to Dynamic Parameters could lead to loss of transparency, becoming more difficult to operate in the consumer's best interest

- In all scenarios ESO want to purchase the least energy needed to Balance the System

Examples

- When energy prices are low (for example in 2020)
- Generators should still be able to cover costs
- Dynamic Parameters declarations could be manipulated
- If SEL were to be inflated ESO could be forced to purchase a greater volume of power from a generator than needed when the plant was called on

- Market Monitoring team will report examples arousing suspicion to the Authority
  - Patterns of Dynamic Parameters declarations

Examples of Dynamic Parameters Usage- SEL

- Where SEL is above MEL often therefore discharge tools not dispatching properly

- If Dynamic Parameters are different when self-dispatching as opposed to when ESO instructing the plant - this can be a key indicator of irregularities

Example SEL

- Generators can change minimum run time for example from 6 hours (design threshold) to 10 hours

Examples Run up/ Run Down

- Parameters need to be kept up to date and not changed after ordered - where absolutely necessary it should be only for valid reasons
- Hard for ESO to know if genuine or not.
- Where a generator struggles to ramp up as expected the ESO has to make up the difference elsewhere at a cost

- Market Monitoring team will report examples arousing suspicion to the Authority
  - Patterns of Dynamic Parameters declarations

Questions for Work Group

- What are the Timescales/ Plan for agreeing outcome of Issue 98?

- What does and doesn't work with Dynamic Parameters as they are currently configured?
  - Can workgroup members provide specific examples where industry rules are stifling flexibility and opportunity?
  - Is this specific to newer technology types?

- Question to generators on the WG: what drives SELs for windfarms?
  - Sometimes SELs on windfarms look incredible; we would like to understand this issue more

- What drives SEL for other than large synchronous machines?

Options for consideration

1. Decreasing BOA (Bid Offer Accept) prices (Energy UK suggestion)
2. Allow for multiple combinations of DP (more DPs) (Energy UK suggestion)
3. Reword Grid Code to provide more flexibility what is submitted (Energy UK suggestion)

4. Retain status quo
5. Explore possible benefits of other Balancing services for specific Dynamic Parameter issues/opportunities

Modern Dispatch Instructor

Bernie Dolan

nationalgridESO

Future Balancing Developments

- MDI (Modern Dispatch Instructor)
  - NGESO are developing new tools to support control room decisions under the Balancing Transformation Programme
  - MDI was an internally facing nonproduction proof of concept where its objective was to:
    - Create **instructible advice** across BM and NBM (BOA and Open-Ended Instructions) across all fuel types
    - Dispatch in **price merit** order inline with the existing BM parameters
    - Bulk Dispatch UI capability – So the operator can focus **on the requirement for dispatch rather than the selection of Units for dispatch**
  - During the analysis it became apparent that ESO operators have some additional parameters for some Units to help protect the Unit - An example would be not moving an ageing Coal station up to by 1MW for a short period of time.
  - We have made no decisions at this time, and we want to share our thoughts with Industry and get your feedback.
  - Some examples of rules that may be considered are:
    - Do not issue an instruction to a unit if the MW level is less than a certain value if the change in the output of a unit would be less than X MW, (both for more or less MW)
    - Do not issue an instruction to a unit until a period after the last instruction completes
    - Limit the number of instructions sent to a unit over a certain period
  - We would welcome your views on how to proceed with this matter

Issue 98

Appendices

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Dynamic Parameters in the Grid Code (1 – for reference)

Dynamic Parameters: Definition: Those parameters listed in Appendix 1 to **BC1** under the heading **BM Unit Data – Dynamic Parameters**.

BC1.A.1.5 Dynamic Parameters

The **Dynamic Parameters** comprise:

- Up to three Run-Up Rate(s) and up to three Run-Down Rate(s), expressed in MW/minute and associated Run-Up Elbow(s) and Run-Down Elbow(s), expressed in MW for output and the same for input. It should be noted that Run-Up Rate(s) are applicable to a MW figure becoming more positive;
- Notice to Deviate from Zero (NDZ) output or input, being the notification time required for a **BM Unit** to start importing or exporting energy, from a zero **Physical Notification** level as a result of a **Bid-Offer Acceptance**, expressed in minutes;
- Notice to Deliver Offers (NTO) and Notice to Deliver Bids (NTB), expressed in minutes, indicating the notification time required for a **BM Unit** to start delivering Offers and Bids respectively from the time that the **Bid-Offer Acceptance** is issued. In the case of a **BM Unit** comprising a **Genset,** NTO and NTB will be set to a maximum period of two minutes;
- Minimum Zero Time (MZT), being either the minimum time that a **BM Unit** which has been exporting must operate at zero or be importing, before returning to exporting or the minimum time that a **BM Unit** which has been importing must operate at zero or be exporting before returning to importing, as a result of a **Bid-Offer Acceptance**, expressed in minutes;
- Minimum Non-Zero Time (MNZT), expressed in minutes, being the minimum time that a **BM Unit** can operate at a non-zero level as a result of a **Bid-Offer Acceptance**;
- Stable Export Limit (SEL) expressed in MW at the **Grid Entry Point** or **Grid Supply Point** or **GSP Group**, as appropriate, being the minimum value at which the **BM Unit** can, under stable conditions, export to the **National Electricity Transmission System**;
- Stable Import Limit (SIL) expressed in MW at the **Grid Entry Point** or **Grid Supply Point** or **GSP Group**, as appropriate, being the minimum value at which the **BM Unit** can, under stable conditions, import from the **National Electricity Transmission System**;
- Maximum Delivery Volume (MDV), expressed in MWh, being the maximum number of MWh of Offer (or Bid if MDV is negative) that a particular **BM Unit** may deliver within the associated Maximum Delivery Period (MDP), expressed in minutes, being the maximum period over which the MDV applies.
- Last Time to Cancel Synchronisation, expressed in minutes with an upper limit of 60 minutes, being the notification time required to cancel a **BM Unit**'s transition from operation at zero. This parameter is only applicable where the transition arises either from a **Physical Notification** or, in the case where the **Physical Notification** is zero, a **Bid-Offer Acceptance**. There can be up to three Last Time to Cancel Synchronisation(s) each applicable for a range of values of Notice to Deviate from Zero.

ofgem Making a positive difference for energy consumers

Issue 98
Working Group 2

Robin Dunne, Matthias Noebels
04/02/2022

Ofgem Position and Way Forward

REMIT (Articles 2 and 5)
Disseminating of false information is market manipulation and as such prohibited.

Grid Code (BC2.5.3.1, BC1.A.1.5)
Dynamic Parameters shall reasonably reflect the true current operating characteristics of the BM Unit and shall be prepared in accordance with Good Industry Practice.
*(e.g.: "the SEL is defined as the minimum value at which the BMU **can**, under stable conditions export to the NETS")*

Ofgem position is based on these obligations and remains as stated in Open Letter to industry.

- DPs are expected to reflect the true operating characteristics from a **technical** perspective.
- Generators must not use DPs as a commercial tool to influence payments from the ESO. Instead, generator's costs should be reflected in the bid and offer prices that are submitted.
- Ofgem will use its discretion in deciding whether to investigate potential breaches of companies' obligations. We will prioritise based on a range of factors, including the harm caused to consumers, and whether the breach appears to be intentional, reckless or a sign of negligence.

Way forward

- We understand concerns that the text of the Grid Code does not reflect the commercial reality, and that some of these parameters may need to have an element which is not purely technical to reflect the risk a company is willing to take.
- We support efforts by the Issue group to improve clarity and reduce exposure to business risks, e.g. through a GC mod, if the results of such efforts are beneficial for consumers.
- We want the ESO to be able to balance as efficiently and economically as possible – including by allowing generators to submit offer prices and dynamic parameters in a way that maximises the ESO's access to flexibility available in the market while enabling effective competition between providers
- We would expect the Issue group to come forward with solid proposals that we can express a view on.

GROUP DISCUSSION

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CONCLUSION OF THE ISSUE GROUP

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Next Steps

- Consider any actions from this meeting
- Meeting notes to be sent to Issue Group Members
- Issue 98 Workgroup Meeting 3 to be scheduled (if required)
- Any Other Business