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## **Grid Code (GC) GC0166: Introducing new Balancing Mechanism Parameters for Limited Duration Assets (GC0166)**

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| <b>Decision:</b>            | The Authority <sup>1</sup> directs <sup>2</sup> that the proposed modification to the Grid Code be made          |
| <b>Target audience:</b>     | National Energy System Operator (NESO), the Grid Code Review Panel, Grid Code users and other interested parties |
| <b>Date of publication:</b> | 22 October 2025                                                                                                  |
| <b>Implementation date:</b> | 10 Working days after The Authority Decision                                                                     |

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### **Background**

There has been an increasing number of Limited Duration Assets operating in the Balancing Mechanism (BM) over recent years. These types of assets can only import or export until their limited storage capacity is either fully charged or discharged. The current legal text in the Grid Code does not cater for effective use of Electricity Storage Modules (ESMs) with limited duration due to their bi-directional nature.

To get around this issue NESO use Maximum Import Limits (MIL) and Maximum Export Limits (MEL) and the “30-minute” rule (previously “15-minute” rule). The 30-minute rule is how ESM’s state of charge is communicated to the control room. Operators currently submit MEL and MIL to the control room to communicate their available energy. These values are set on the maximum power that can be delivered for 30 minutes. When an asset’s state of charge changes, they will have to redeclare their MEL/MIL. This is a departure from how MEL and MIL are intended to be submitted, which is the maximum possible Active Power output from each Power Park Module. The 30-minute rule has also impacted how the control room takes actions on ESMs due to having limited visibility on the availability of ESMs for durations longer than 30 minutes.

NESO has also highlighted challenges in using ESMs in planning timescales (24 hours ahead) due to poor visibility of the assets’ intentions in future periods.

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<sup>1</sup> References to the “Authority”, “Ofgem”, “we” and “our” are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day-to-day work. This decision is made by or on behalf of GEMA.

<sup>2</sup> This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.

As a result, NESO is proposing this modification to increase the economic dispatch of ESMs, and to improve the NESO's operational planning to factor in ESMs during planning timescales.

In addition, in accordance with Article 18 of the Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing,<sup>3</sup> as amended by the Electricity Network Codes and Guidelines (Markets and Trading) (Amendment) (EU Exit) Regulations 2019 (the EBGL Regulation),<sup>4</sup> NESO (then National Grid Electricity System Operator (ESO)) was required to develop a proposal regarding the terms and conditions (T&Cs) for balancing service providers (BSPs) and balance responsible parties (BRPs). On 8 October 2019,<sup>5</sup> we published our decision to confirm, upon satisfaction of certain conditions, that the T&Cs proposed by ESO are the T&Cs required by Article 18 of the EBGL Regulation. On 25 June 2020, all the necessary conditions were met, and the proposed T&Cs came into force in Great Britain. We note that the proposed legal text changes for Grid Code modification GC0166 include changes which affect the T&Cs.

## **The modification proposal**

This modification aims to introduce new parameters, Maximum Delivery Offer (MDO), Maximum Delivery Bid (MDB) and Future State of Energy (FSOE) into the Balancing Code section of the Grid Code.

GC0166<sup>6</sup> (the Proposal) was raised by the Electricity System Operator (ESO), now known as NESO (the Proposer) on 29 November 2023. The Proposal seeks to introduce new parameters that will allow the better use of ESMs within the BM, with all BM Units (BMUs) required to submit the new parameters.

GC0166 proposes changes in the following areas:

- Glossary and Definitions
- Balancing Code 1
- Balancing Code 2

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<sup>3</sup> [Commission Regulation \(EU\) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing, The EBGL Regulation, came into force on 18 December 2017.](#)

<sup>4</sup> [The UK SI amendment of the EBGL Regulation](#)

<sup>5</sup> [Our 8 October 2019 decision](#)

<sup>6</sup> The full legal text for this change can be found here: [GC0166: Introducing new Balancing Mechanism Parameters for Limited Duration Assets | National Energy System Operator](#)

The Proposer considers the Proposal positively impacts Grid Code Objectives (i)<sup>7</sup>, (ii)<sup>8</sup> and (iii)<sup>9</sup> and has a neutral impact on the remaining Objectives.

The Workgroup Consultation was held between 18 November 2024 – 09 December 2024 and received 14 responses. Out of the 14 responses, 11 agreed that the proposal better facilitates one or more of the Applicable Grid Code Objectives. 3 respondents did not believe that the Proposal facilitated the Applicable Grid Code Objectives. However, 2 of these respondents needed more information on the Proposal to give a more informed view and could not think of an alternative solution.

The Workgroup met on 19 March 2025 to carry out their Workgroup vote. The Workgroup concluded unanimously that the Proposal better facilitates the Applicable Grid Code Objectives than the Baseline. One workgroup member abstained from voting.

The Code Administrator Consultation (CAC) was held from 06 May 2025 to 06 June 2025. This received 7 non-confidential responses. Six of the 7 responses preferred the Proposal over the Baseline, with all 6 stating the Proposal better facilitates the Applicable Grid Code Objectives (i), (ii) and (iii). Three respondents also believe that the proposal better facilitated Objective (iv), and 2 respondents believe the proposal better facilitated (v). One respondent had no preference as to whether the Proposal better facilitates the Applicable Grid Code Objectives against the Baseline.

The CAC did, however, raise concerns around the implementation approach as 4 respondents did not support this. Also, 1 respondent believed that some of the Electricity Balancing Regulation (EBR)<sup>10</sup> Objectives would not be met by the Proposal.

### **Grid Code Review Panel recommendation**

On 26 June 2025, the Panel met and recommended unanimously that the Proposer's solution is implemented.

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<sup>7</sup> Applicable Grid Code Objective (i): To permit the development, maintenance, and operation of an efficient, coordinated and economical system for the transmission of electricity.

<sup>8</sup> Applicable Grid Code Objective (ii): To facilitate competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the National Electricity Transmission System being made available to persons authorised to supply or generate electricity on terms, which neither prevents nor restricts competition in the supply of generation of electricity)

<sup>9</sup> Applicable Grid Code Objective (iii): Subject to sub-paragraphs E3.2(i) and E3.2(ii) of the ESO licence, to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole.

<sup>10</sup> [Commission Regulation \(EU\) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing \(Text with EEA relevance\)](#)

## Our decision

We have considered the issues raised by the modification proposal and in the Final Modification Report (FMR) dated 8 July 2025. We have considered and taken account of the responses to the industry consultations on the modification proposal which are included in the Final Report.<sup>11</sup> We have concluded that:

- implementation of the modification proposal will better facilitate the achievement of the objectives of the Grid Code<sup>12</sup>
- approving the modification is consistent with our principal objective and statutory duties<sup>13</sup>

## Reasons for our decision

We consider that this modification proposal will better facilitate Grid Code Objectives (i), (ii) and (iii) and has a neutral impact on the other Applicable Grid Code Objectives.

### ***(i) permit the development, maintenance, and operation of an efficient, coordinated, and economical system for the transmission of electricity***

We agree with the Proposer that GC0166 positively impacts this objective. This is because GC0166 will provide NESO with improved levels of information about ESMs, which should lead to their more efficient use. As a result, this should negate the need for the “30-minute” rule which was a NESO workaround with limitations. Therefore, NESO will be able to dispatch these assets in a more efficient and economic manner and should reduce the number of “skips” occurring.

We also note that the introduction of the FSoE parameter will provide NESO with better visibility on the availability of ESMs over a longer time horizon. This should promote a more co-ordinated approach during NESO’s planning timescales.

### ***(ii) to facilitate competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the National Electricity Transmission System being made available to persons authorised to supply or generate***

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<sup>11</sup> Grid Code proposals, final reports and representations can be viewed on NESO’s website at: [GC0166: Introducing new Balancing Mechanism Parameters for Limited Duration Assets | National Energy System Operator](#)

<sup>12</sup> As set out in Standard Condition E3 of the Electricity System Operator Licence.

<sup>13</sup> The Authority’s statutory duties are wider than matters which the Grid Code Panel Review must take into consideration and are detailed mainly in the Electricity Act 1989 as amended.

***electricity on terms, which neither prevents nor restricts competition in the supply of generation of electricity)***

We agree with the Proposer that GC0166 positively impacts this objective. This is because GC0166 will enable a more level playing field between all types of assets in the BM as it allows ESMs to declare their actual capabilities through the new parameters, MDO and MDB. This brings them in line with how other assets declare their capabilities and removes the limitations set by the 30-minute rule. This improved information allows NESO to be better placed to take the most economic action and reduce the number of skipped actions taken in the BM. In turn, this will promote more effective competition in the BM and improve investor confidence in available revenue streams for ESMs.

The Proposal also avoids other potential discrimination distortions as it is a technology neutral solution, meaning that all BMUs must provide MDO/MDB. It should be noted that if a BMU can deliver a Bid Offer Acceptance (BOA) for the full duration of the BM Window (90 minutes), then they can declare a default value for MDO/MDB.

The solution also minimises the impact MDO/MDB will have on other markets. This is because the Proposal allows BMUs to redeclare their MDO/MDB post Gate Closure during specific situations. These are:

- a technical fault occurs on the BMU
- if NESO issues a BOA to the BMU
- if a frequency event occurs so that the BMU depletes all energy it had reserved for an Ancillary Service
- the BMU changes its Physical Notification position in the Settlement Period after the BM Window Period

These defined periods allow BMUs to continue trading right up to gate closure and as a result MDO/MDB submissions should not impact their participation in other markets.

Finally, the workgroup had extensive discussions on whether MDO/MDB should be classed as a technical or commercial parameter. This discussion centred around Ofgem's September 2020 letter<sup>14</sup>, which explained that market participants must ensure that dynamic parameters are set at a level that reflects the true operating characteristics of the BMU in question, and should not be used for commercial purposes.

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<sup>14</sup> [Open letter on dynamic parameters and other information submitted by generators in the Balancing Mechanism | Ofgem](#)

Consistent with other dynamic parameters, we consider that the MDO/MDB are technical parameters - even with the above redeclaration clauses. Like all other dynamic parameters, market participants must therefore ensure that the MDO/MDB reflect what it is technically possible for the unit to deliver (given any BOAs, Ancillary Services commitments etc), and that they do not use the MDO/MDB for commercial gain. Ofgem (alongside NESO's market monitoring team) will monitor any redeclarations to ensure that these are being made appropriately.

***(iii) subject to paragraphs E3.2(i) and E3.2(ii), to promote the security and efficiency of the electricity generation, transmission, and Distribution Systems in the National Electricity Transmission System Operator Area taken as a whole***

We agree with the Proposer that GC0166 positively impacts this objective. This is because the Proposal will allow NESO to have better visibility on what ESMs availability is in future timescales. As a result, FSoE will allow for better operational planning due to NESO's better access to data and forecasts. This will allow more efficient planning by NESO to better manage both System Margin and System Constraints, thus improving the security and efficiency of the system.

***(iv) to efficiently discharge the obligations imposed upon the licensee by this licence and to comply with the Electricity Regulation and any Relevant Legally Binding Decisions of the European Commission and/or the Agency***

We agree with the Proposer that the impact GC0166 has on this objective is neutral due to it not impacting how NESO comply with Electricity Regulation or other decisions of the European Commission and/or Agency. However, we do note that one respondent to the CAC believed that the Proposal did not fully meet Objectives d)<sup>15</sup>, e)<sup>16</sup>, f)<sup>17</sup> and g)<sup>18</sup> of the EBR.

Objective d)

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<sup>15</sup> EBR Objective d) - contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector while facilitating the efficient and consistent functioning of day-ahead, intraday and balancing markets

<sup>16</sup> EBR Objective e) - ensuring that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, fosters the liquidity of balancing markets while preventing undue market distortions

<sup>17</sup> EBR Objective f) - facilitating the participation of demand response including aggregation facilities and energy storage while ensuring they compete with other balancing services at a level playing field and, where necessary, act independently when serving a single demand facility

<sup>18</sup> EBR Objective g) - facilitating the participation of renewable energy sources and supporting the achievement of any target specified in an enactment for the share of energy from renewable sources.

The respondent believes that the inability to redeclare MDO/MDB in the BM Window could impact liquidity in the intraday market and create distortions.

As noted above in Objective (ii), BMUs can redeclare MDO/MDB within the BM Window, under specific conditions. This is intended to prevent any distortions in the intraday markets. Therefore, we disagree with the respondent's view that the Proposal does not meet Objective (d) of the EBR.

#### Objective e) and Objective f)

The respondent believes that the Proposal increases obligations on ESMs and introduces new potential barriers to entry for smaller and aggregated assets.

Ofgem do not see this being an overburdensome requirement on smaller and aggregated assets. These technology types already take part in the BM and have identified inefficient dispatch from NESO as being a key barrier to entry.<sup>19</sup> Given the objective of GC0166 is to improve the dispatch of limited duration assets, we do not see this Proposal as creating undue barriers for smaller and aggregated assets. In fact, given NESO will have the ability to improve its planning and dispatch, we would expect GC0166 to improve market confidence and hence potentially foster liquidity in the BM. Therefore, we believe that the advantages this Proposal brings outweighs the administrative requirements of submitting this information to NESO.

#### Objective g)

The respondent noted that ESMs are key to helping markets respond to increased renewable energy and the challenges this creates. They believe that this Proposal makes it more difficult for such assets to respond to market signals and could have an adverse effect.

The Proposer highlights that given the existing BM structure and constraints such as cost, resource and time, they consider that there is a need to introduce MDO/MDB as the most effective route to allow the control room to deploy ESMs more efficiently, regardless of technology type.

Ofgem agree with the Proposer that the Proposal will promote the efficient dispatch of ESMs and will enable NESO and ESMs to aid the participation of renewable energy sources. We are aware that industry have noted concerns about the use of ESMs when

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<sup>19</sup> [Demand Side Flexibility Routes to Market Review](#) - see B12 of the barriers.

renewable energy is being constrained, we anticipate that GC0166 will improve this and therefore this supports Objective g).

Overall, we disagree with the respondent's view and believe that the Proposal does meet the objectives set out in the EBR.

***(v) to promote efficiency in the implementation and administration of the Grid Code arrangements***

We agree with the Proposer that the impact GC0166 has on this objective is neutral due to it not impacting the administration of the Grid Code. However, we do note that 4 respondents to the CAC disagreed with how the Proposal was being implemented. Ofgem share this concern, and we believe that NESO need to be much clearer on when these new parameters will come into effect and how they will be submitted to NESO.

MDO, MDB and FSoE will be implemented into the Grid Code 10 working days after this publication. However, there is minimal information, on when and how BMUs should submit these parameters to NESO other than the FMR noting that the implementation period will be between 6-12 months. We are aware that NESO are currently running a proof-of-concept trial to better understand the data they will receive from BMUs and for BMUs to test how they will send data to NESO. This is expected to take place in November, and we encourage NESO to share findings with industry on this trial, especially with regards to how these new parameters interact with existing parameters.

We are also aware of the impact NESO's balancing programme has on the implementation period. NESO is currently updating its IT systems and migrating its Electronic Data Transfer (EDT) / Electronic Dispatch and Logging (EDL) systems over to the Open Balancing Platform. This release is currently expected in Q4 of the 2025-26 financial year. We also note that NESO raised BSC modification P499,<sup>20</sup> which seeks to amend the BSC to reflect GC0166, requiring NESO to send MDO/MDB parameters to the Balancing Mechanism Reporting Agent for publication. This modification is expected to be implemented in the standard June 2026 BSC release.

As there are many pieces to the Proposal's implementation plan, we expect NESO to provide industry with a roadmap for implementation which sets out a clear end date for when BMUs would be expected to comply with the provisions set out in the Grid Code, we

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<sup>20</sup> [P499 BSC Changes for GC0166: New Dynamic Parameters for Limited Duration Assets - Elexon BSC](#)

also expect NESO to give a minimum notice time of a 1 month prior to the requirement for ESMs to submit these values to NESO becoming effective.

We are also aware that some parties are still unclear about how to submit MDO/MDB and the data required for FSoE. We expect NESO to set out clear guidance through existing documentation<sup>21</sup> on how BMUs will be expected to submit MDO, MDB and FSoE information to NESO.

Finally, we note that a respondent to the CAC highlighted that NESO should undertake a post-implementation review. No later than 12 months after implementation. We agree with this and encourage NESO to do a post-implementation review. We expect this review to include:

- a) the impact MDO and MDB had on efficient decision making in the control room
- b) the accuracy of FSoE models and its use in planning timescales
- c) understanding the number of redeclarations and ensuring that they were submitted in accordance with the valid reasons set out in BC2.5.3.4 of Grid Code<sup>22</sup>
- d) considering further improvements to the Proposal, including reviewing how MDO/MDB impact co-located assets

## **Decision notice**

In accordance with Standard Condition E3 of the Electricity System Operator Licence, the Authority hereby directs that Grid Code modification proposal Grid Code GC0166: Introducing new Balancing Mechanism Parameters for Limited Duration Assets be made.

As a consequence of the above, we also approve the amendment to the T&Cs related to balancing resulting from the modification of Sections BC1 and BC2.

**Adam Gilham**

**Head of NESO Regulation**

**Energy System Management and Security**

Signed on behalf of the Authority and authorised for that purpose

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<sup>21</sup> [Data Validation, Consistency & Defaulting Rules](#)

<sup>22</sup> Legal text added to the Grid Code by GC0166