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## Workgroup Consultation

# GC0173:

# Consistency of Technical and Compliance Requirements between GB and European Users

**Overview:** This modification is designed to ensure alignment between the Grid Code Connection Conditions and European Connection Conditions and interactions with the Compliance Processes and European Compliance Processes in addition to a data clarification issue in the Planning Code regarding thermal storage technologies.

### Modification process & timetable

1. **Proposal Form**
   22 May 2024
2. **Workgroup Consultation**
   20 March 2025 - 20 April 2025
3. **Workgroup Report**
   16 July 2025
4. **Code Administrator Consultation**
   30 July 2025 - 30 August 2025
5. **Draft Final Modification Report**
   17 September 2025
6. **Final Modification Report**
   07 October 2025
7. **Implementation**
   10 business days after Authority decision

**Have 5 minutes?** Read our Executive summary
**Have 60 minutes?** Read the full Workgroup Consultation
**Have 120 minutes?** Read the full Workgroup Consultation and Annexes.

**Status summary:** The Workgroup are seeking your views on the work completed to date to form the final solution to the issue raised.

**This modification is expected to have a: Medium impact** on NESO, Grid Code Users, and Transmission Licensees

**Modification drivers:** Efficiency, Governance and Transparency

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|---|---|---|
| **Governance route** | Standard Governance modification with assessment by a Workgroup | |
| **Who can I talk to about the change?** | **Proposer:** Antony Johnson antony.johnson@nationalenergyso.com | **Code Administrator Chair**: Jess Rivalland jessica.rivalland@nationalenergyso.com |
| **How do I respond?** | Send your response proforma to grid.code@nationalenergyso.com by **5pm** on **20 April 2025** | |

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## Contents

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## Executive Summary

The proposed modification aims to align the relevant Grid Code Connection Conditions and improve consistency with relevant Compliance Processes. Key changes include clarifying definitions, updating the requirements relating to Frequency Sensitive Relays, and addressing known issues in the Grid Code.

### What is the issue?

As currently drafted, there are inconsistencies between the Grid Code Connection Conditions / European Connection Conditions, the relevant Compliance Processes / European Compliance Processes, and also with Engineering Recommendation G99. There are also inappropriate data requirements required for thermal storage technologies.

### What is the solution?

Ensuring alignment between the Grid Code Connection Conditions and European Connection Conditions, in addition to interactions with the Compliance Processes and European Compliance Processes. In addition, the solution will seek to remove unnecessary data requirements for thermal storage technologies and improve the formatting.

**Implementation date:** 10 business days after Authority decision.

### Interactions

Potential interaction with the Electricity Balancing Guideline (EBR).

## What is the issue?

This modification is designed to ensure alignment between the Connection Conditions (CCs) and European Connection Conditions (ECCs) in the Grid Code, in addition to ensuring alignment with the Compliance Processes (CP) and European Compliance Processes (ECP).

This modification aims to ensure consistency between the CCs and the ECCs, as well as ensuring compliance with the EU Network Codes RfG, DCC and HVDC. Additionally, it identifies some minor discrepancies between the ECP and EREC G99.

As part of this modification, it is also proposed to remove some of the data erroneously requested in respect of thermal storage technologies.

### Why change?

As currently drafted, there are inconsistencies between the requirements in the CCs as applicable to GB Code Users and ECCs as applicable to EU Code Users.

In addition, the Compliance Processes and European Compliance Processes that detail how Users are required to demonstrate their ability to satisfy the requirements of the CCs and ECCs have been reviewed to ensure consistency with the proposed changes in addition to identifying any consistency issues with EREC G99.

The opportunity has also been taken to update the Grid Code Planning Code relating to the removal of thermal storage data which is not related to electricity storage and was erroneously included in the Grid Code.

## What is the solution?

### Proposer's solution

The Proposers Solution will cover the following high-level issues:

a. Removal of references to thermal storage technologies in PC.A.3.1.4. e.g. Latent Heat Storage, Thermochemical Storage and Sensible Heat Storage.
b. In CC / ECC3.3.2 change the references to GB Generator and EU Generator to Embedded Medium Power Station not subject to a Bilateral Agreement.

c. Updates to application of frequency sensitive relays provided for in ECC.6.3.13.
d. CC.6.3.12 prohibits the use of rate of change of frequency relays. This prohibition was not carried over into the ECCs when RfG was implemented. It is proposed to update ECC.6.3.12 & 13.
e. Provide clarification of the ancillary services required in ECC.8.1. CC.8.1 defines Ancillary Services requirements in terms of Large and Medium Power Stations and ECC.8.1 defines the requirements in terms of Type C and Type D Power Generating Modules.
f. Amend ECC.8.1 (c) as it contradicts ECC.8.1 (a) for directly connected Medium Power Stations.
g. Clarify the obligations for Embedded Medium Power Stations (BEGAs) defining the requirement for an MSA other than in respect of Embedded Small Power Stations
h. Amend ECP.A.5.8.8, ECP.A.6.4, ECP.A.6.5.1 ECP.A.6.6.8, ECP.A.6.6.10, ECP.A.6.8.1, ECP.A.6.8.2, to improve clarity and correct references and errors where relevant.
i. Amend ECP.A.6.2.1 to confirm that if a Generator has installed a Power Park Module where the reactive capability is independent of the Active Power the 20% Active Power tests are not necessary.
j. Amend ECP.A.6.8.1 to improve clarity.
k. Clarify the Fault Ride Through requirements: The Grid Code specifies the simulation requirements in ECP.A.3.5 which includes unbalanced and several sets of balanced Supergrid voltage faults. EREC G99 currently only asks Users to provide unbalanced fault simulations and a single set of balanced fault simulations.
l. Update the Voltage Control Testing requirements: +/-4% step injection test is missing from EREC G99.

A detailed summary outlining the high-level draft legal text changes is included in Annex 4.

As part of this modification some changes are proposed Balancing Code 3 (BC.3.5.1) and therefore there will be an impact on the Terms and Conditions relating to Balancing Service Providers which fall under Article 18 of the Electricity Balancing Regulation (EBR – EU Regulation 2017/2195). There are however not believed to be any changes to Table 1 or Table 2 of Annex GR.B of the Governance Rules.

## Workgroup considerations

The Workgroup convened 5 times to discuss the identified issue within the scope of the defect, develop potential solutions, and evaluate the proposal in relation to the Applicable Code Objectives.

### Consideration of the Proposer's solution

The Workgroup reviewed the proposed Legal Text and suggested several updates.

One member raised a point regarding the formatting in the Planning Code under clause PC.A.3.1.4., suggesting that it required further review. The proposer looked into this and confirmed that PC.A.3.1.4 did require reformatting. This change including the removal of thermal storage data is part of the Legal Text contained within Annex 3.

The Workgroup reached a consensus on changing the terms "GB Generator" and "EU Generator" in the CCs/ECCs to "Embedded Medium Power Station not subject to a Bilateral Agreement" for clarity.

It was brought to attention that ECC.6.3.2 required corrections to certain references. The NESO SME emphasised that these corrections must be reflected in future drafts of the Legal Text to ensure accuracy and consistency.

Concerns were also addressed regarding the application of frequency sensitive relays. A Workgroup member inquired about any potential risks that the proposed text may undermine the requirements established in the Requirements for Generators (RfG). In response, another member explained that CC.6.3.12 prohibited the use of rate of change of frequency relays, a provision that was not carried over into the European Connection Conditions (ECCs) during the implementation of RfG. This related to a subsequent change made to ECC.6.1.2.3.1. The proposer investigated this and it was confirmed that the revised text would not undermine the EU network Code requirements in respect of rate of change of frequency relays but the Workgroup agreed that there should be no reference to "Frequency Level Relays" as this would undermine the requirements of Article 13(1)(a)(ii) of RfG.

The issue of mandatory Ancillary Services (MAS) was discussed as this is a key item requiring attention as part of the GC0173 modification. The Proposer noted that clarification is needed to the existing Grid Code Legal Text regarding the difference between CC 8.1 and ECC 8.1, which refers to Ancillary Services including mandatory

service agreements (MSAs). The Proposer noted CC8.1 defines Ancillary Services requirements in respect of Large and Medium Power Stations, whereas ECC.8.1, defines

the Ancillary Services requirements in respect of Type C and Type D Power Generating Modules rather than on a Power Station basis. As part of this modification, the Proposer suggested amendments to ECC.8.1 reflect the inconsistencies between CC.8.1 and ECC8.1.

For the European Compliance Processes (ECP), the NESO SME integrated comments from Workgroup members in the Legal Text, with suggestions for examples and corrections.

Workgroup members also reviewed ECP.A.6.2 and ECP.A.6.4. The Proposer shared the first draft of the Legal Text and noted that further comments had been received from the NESO SME, which would be incorporated into the next iteration. In terms of ECP.A.6.5.1, the NESO Engineering Compliance representative suggested the addition of examples in brackets and possibly an extra paragraph within the Legal Text.

Several Workgroup members raised concerns regarding the proposed changes to ECP.A.6.2.1, especially with regard to the 20% operation clause. They discussed the requirements for demonstrating an automatic voltage control facility in power park modules, stating that it may be possible to demonstrate these requirements regardless of their MW output. Requiring tests at 20%, especially where factors such as wind speed need to be included, can result in substantive delays to the commissioning and compliance process.

The concern was that Power Park Modules can provide all of their reactive capability from designated reactive compensation equipment (and hence not dependent upon the generating units) and likewise a similar issue applies to Electricity Storage Modules such as batteries which again are not dependent upon MW output. The proposed changes to require 95% of the 20% capacity to be generating or absorbing could create significant complications, particularly for offshore windfarms, as it would necessitate maintaining certain generation levels that are dependent on wind conditions.

This could lead to severe delays in commissioning and halt installation campaigns, raising concerns about the practicality and the need of such changes to the Grid Code. Workgroup members also wanted to understand why a battery storage system should be exporting or importing Active Power during a 20% test, which is meant to evaluate voltage control rather than production capability. The Workgroup asked NESO to explain the reasoning for this proposed change and what the drivers are as they believe this is outside the scope of the modification. NESO took this issue away and engaged with

interested stakeholders to develop a more appropriate solution which has been reflected in the proposed Legal Text.

In regard to the ECP requirements not being replicated in EREC G99, following a brief discussion, it was agreed that the omissions are not critical, and need not be made as a matter of urgency. The ENA has added them to a list of pending modifications to EREC G99 which can be made at the first opportunity when EREC G99 is next revised. DNO stakeholders can be briefed about the discrepancy between Grid Code and EREC G99 requirements via the ENA's Distributed Energy Resources Technical Forum at a future meeting.

The Workgroup members discussed the costs and implementation associated with the modifications and agreed they are administrative. It was noted that there are no additional costs such as software changes or new obligations on any parties.

The Workgroup members agreed that the existing expert Workgroup members, in conjunction with NESO Legal, were adequate for the Workgroup discussions.

### Draft Legal Text

The draft legal text for this change can be found in Annex 3.

## What is the impact of this change?

### Proposer's assessment against Grid Code Objectives

| Relevant Objective | Identified impact |
|---|---|
| (a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity | **Positive**<br><br>By clarifying the Grid Code as indicated in the Proposers solution, it will improve clarity. This is marginally seen as positive. |

| | |
|---|---|
| (b) Facilitating effective 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 prevent nor restrict competition in the supply or generation of electricity); | **Positive**<br><br>By clarifying the Grid Code as indicated in the Proposers solution, it will improve clarity. This is marginally seen as positive |
| (c) Subject to paragraphs E3.2(b)(i) and E3.2 (b)(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; | **Positive**<br><br>By clarifying the Grid Code as indicated in the Proposers solution, it will improve clarity. This is marginally seen as positive. |
| (d) To efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency; and | **Positive**<br><br>As the NESO is responsible for Administration of the Grid Code, improving clarity is a key objective and therefore we see this modification as positive in respect of this Grid Code objective. |
| (e) To promote efficiency in the implementation and administration of the Grid Code arrangements | **Positive**<br><br>As the NESO is responsible for Administration of the Grid Code, improving clarity is a key objective and therefore we see this<br><br>modification positive in respect of this Grid Code objective. |

## Proposer's assessment of the impact of the modification on the stakeholder / consumer benefit categories

| Stakeholder / consumer benefit categories | Identified impact |
|---|---|
| Improved safety and reliability of the system | **Positive**<br><br>This modification will improve clarity and ensure consistency between GB Code Users (i.e. pre–European Connection Network Codes) and EU Code Users (i.e. post European Connection Network Codes). Whilst not having a direct impact on improved safety and reliability of the System, it will improve clarity which we overall see as positive. |
| Lower bills than would otherwise be the case | **Neutral**<br><br>There will be no impact to lower Bills as a result of this modification. |
| Benefits for society as a whole | **Positive**<br><br>The Grid Code is a complex document running to many pages. Any change which improves clarity to Stakeholders and User's is only seen as positive. |
| Reduced environmental damage | **Neutral**<br><br>There will be no impact to environmental damage as a result of this modification. |
| Improved quality of service | **Positive**<br><br>The Grid Code is a complex document running to many pages. Any change which improves clarity to Stakeholders and User's and hence the quality of service they receive is only seen as positive. |

## When will this change take place?

### Implementation date

10 business days after Authority decision.

### Date decision required by

There is no specific back stop date required for this modification. We aim to submit the final modification report to Ofgem in Q4 2025.

### Implementation approach

As this modification is proposed to ensure consistency between the CCs and ECCs in addition to any wider consistency issues arising from these updates, there are not expected to be any changes to wider systems or processes, although some consideration may need to be given to mandatory services agreements in CC.8.1 and ECC 8.1.

## Interactions

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|---|---|---|---|
| ☐CUSC | ☐BSC | ☐STC | ☐SQSS |
| ☐European Network Codes | ☒ EBR Article 18 T&Cs[1] | ☐Other modifications | ☒Other |

Potential interaction with the Electricity Balancing Guideline (EBR).

## How to respond

### Standard Workgroup Consultation questions

1. Do you believe that the Original Proposal better facilitates the Applicable Objectives?
2. Do you support the proposed implementation approach?
3. Do you have any other comments?
4. Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?

[1] If your modification amends any of the clauses mapped out in Annex GR.B of the Governance Rules section of the Grid Code, it will change the Terms & Conditions relating to Balancing Service Providers. The modification will need to follow the process set out in Article 18 of the Electricity Balancing Regulation (EBR – EU Regulation 2017/2195). All Grid Code modifications must be consulted on for 1 month in the Code Administrator Consultation phase, unless they are Urgent modifications which have no impact on EBR Article 18 T&Cs. N.B. This will also satisfy the requirements of the NCER process.

5. Does the draft legal text satisfy the intent of the modification?

6. Do you agree with the Workgroup's assessment that GC0173 impacts the European Electricity Balancing Regulation (EBR) Article 18 terms and conditions held within the Grid Code?

7. Do you have any comments on the impact of GC0173 on the EBR Objectives?

### Specific Workgroup Consultation questions

8. Do you agree with the proposed Legal Text in ECP.A.6.2.1? If not, please explain your concerns.

The Workgroup is seeking the views of Grid Code Users and other interested parties in relation to the issues noted in this document and specifically in response to the questions above.

Please send your response to grid.code@nationalenergyso.com using the response pro-forma which can be found on the GC0173 modification page.

In accordance with Governance Rules if you wish to raise a Workgroup Consultation Alternative Request please fill in the form which you can find at the above link.

*If you wish to submit a confidential response, mark the relevant box on your consultation proforma. Confidential responses will be disclosed to the Authority in full but, unless agreed otherwise, will not be shared with the Panel, Workgroup or the industry and may therefore not influence the debate to the same extent as a non-confidential response.*

## Acronyms, key terms and reference material

| Acronym / key term | Meaning |
|---|---|
| BSC | Balancing and Settlement Code |
| CMP | CUSC Modification Proposal |
| CUSC | Connection and Use of System Code |
| EBR | Electricity Balancing Guideline |
| ECC | European Connection Conditions |

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|---|---|
| ECP | European Compliance Processes |
| EREC G99 | Engineering Recommendation G99 - Requirements for the connection of generation equipment in parallel with public distribution networks on or after 27 April 2019 |
| GC | Grid Code |
| HVDC | High Voltage DC Network Code (Commission Regulation (EU) 2016/1447) |
| MSA | Mandatory services agreement |
| PC | Planning Code |
| PPM | Power Park Modules |
| RfG | Requirements for Generators Network Code (Commission Regulation (EU) 2016/631) |
| STATCOM | Static Synchronous Compensator |
| STC | System Operator Transmission Owner Code |
| SQSS | Security and Quality of Supply Standards |
| T&Cs | Terms and Conditions |

## Annexes

| Annex | Information |
|---|---|
| Annex 1 | Proposal form |
| Annex 2 | Terms of Reference |
| Annex 3 | Draft Legal Text |
| Annex 4 | Summary table outlining high-level Legal Text changes |
| Annex 5 | Workgroup Consultation Response Proforma |