Public

Code Administrator 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 - 05 September 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 Code Administrator Consultation
Have 120 minutes? Read the full Code Administrator Consultation and Annexes.

Status summary: The Workgroup have finalised the Proposer's solution. We are now consulting on this proposed change.

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

Modification drivers: Efficiency, Governance, and Transparency

Governance route	Standard Governance modification with assessment by a Workgroup	
Who can I talk to about the change?	**Proposer:** Antony Johnson antony.johnson@neso.energy	**Code Administrator Chair**: Jess Rivalland jessica.rivalland@neso.energy

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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 and when will it come into effect?

Proposer's 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. The solution seeks to remove unnecessary data requirements for thermal storage technologies and improve the formatting.

Implementation date: 10 Business Days after Authority decision.

What is the impact if this change is made?

The low impact of this modification on NESO, Grid Code Users, and Transmission Licensees arises as the Grid Code is designed to provide greater clarity, consistency, and understanding to Users rather than developing any new requirements. In this specific modification, the opportunity has been taken to clarify a number of requirements, in particular with regard to compliance testing for Generators in respect of Power Park Modules and Electricity Storage Modules and in this respect the modification is seen as having a low impact on industry participants.

Workgroup conclusions: The Workgroup concluded unanimously that the Original Solution better facilitated the Applicable Grid Code Objectives than the Baseline.

Interactions

Interaction with the Electricity Balancing Regulation (EBR).

What is the issue?

This modification is designed to ensure alignment between the Connection Conditions (CC) and European Connection Conditions (ECC) 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 CC and the ECC, as well as ensuring compliance with the EU Network Codes Requirements for Generators (RfG), Demand Connection Code (DCC) and High Voltage DC Network Code (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 CC as applicable to GB Code Users and ECC as applicable to EU Code Users.

In addition, the CP and ECP that detail how Users are required to demonstrate their ability to satisfy the requirements of the CC and ECC 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 covers 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 ECC 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 Mandatory Service Agreements (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, and ECP.A.6.8.2 to improve clarity and correct references and errors where relevant.
i. Amend ECP.A.6.2.1 to clarify the requirements for voltage control testing when operating a Power Park Module below 20% Active Power output.
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.
m. General typographical errors and references corrected over and above those listed above.

A detailed summary outlining the high-level Legal Text changes is included in **Annex 4**.

As part of this modification, some changes are proposed for 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).

Workgroup considerations

The Workgroup convened 6 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 included as 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 CC/ECC to "Embedded Medium Power Station not subject to a Bilateral Agreement" for clarity.

It was brought to the attention of the Workgroup that ECC.6.3.2 required corrections to certain references. The NESO Subject Matter Expert (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 Workgroup 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 ECC 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. 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 MSA. 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 to reflect the inconsistencies between CC.8.1 and ECC8.1.

For the ECP, the NESO SME included 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 Energy Network Association (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. Distribution Network Operator (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.

Workgroup Consultation Summary

The Workgroup held their Workgroup Consultation between 20 March 2025 – 20 April 2025 and received 4 non-confidential responses and 0 confidential responses. The full responses and a summary of the responses can be found **Annexes 5** and **6**.

Objectives which the Proposer's solution better facilitates the Applicable Objectives than the baseline: One respondent chose objective (a), three respondents chose objective (b), three respondents chose objective (c), three respondents chose objective (d), and three respondents chose objective (e).

Support for solution: All respondents were supportive of the proposed solution. One respondent noted that they believe the proposal addresses discontinuities between the CC and ECC, as well as consequential changes in the Compliance Processes and European Compliance Processes.

Support for implementation approach: All respondents were supportive of the chosen implementation approach, making no additional comments.

Alternative Requests: There were no Alternative Requests raised in the consultation responses.

Draft Legal Text: All respondents confirmed that the draft Legal Text satisfied the intent of the modification, with the majority of respondents making no additional comments. One respondent identified editorial points in the draft Legal Text and submitted a marked-up version highlighting those points, to which NESO subsequently responded.

Impact on the Electricity Balancing Regulation (EBR) Article 18 T&Cs: All respondents confirmed that the proposal does impact the EBR Article 18 T&Cs. One respondent noted that they believe there would be a change to Balancing Code 3, which has a minor impact on the EBR.

Agreement with the proposed Legal Text in ECP.A.6.2.1: All respondents agreed with the proposed Legal Text in ECP.A.6.2.1, making no additional comments.

Legal Text

The 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
i. To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;	**Positive** By clarifying the Grid Code as indicated in the Proposers solution, it will improve clarity. This is marginally seen as positive.
ii. 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** By clarifying the Grid Code as indicated in the Proposers solution, it will improve clarity. This is marginally seen as positive.
iii. Subject to paragraphs (i) and (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** By clarifying the Grid Code as indicated in the Proposers solution, it will improve clarity. This is

		marginally seen as positive.
iv.	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** As 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.
v.	To promote efficiency in the implementation and administration of the Grid Code arrangements.	**Positive** As NESO is responsible for Administration of the Grid Code, improving clarity is a key objective and therefore we see this modification positive in respect of this Grid Code objective.

** See Electricity System Operator Licence*

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** 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** There will be no impact to lower Bills as a result of this modification.
Benefits for society as a whole	**Positive** 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** There will be no impact to environmental damage as a result of this modification.
Improved quality of service	**Positive** 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.

Workgroup Vote

The Workgroup met on 06 June 2025 to carry out their Workgroup Vote. The full Workgroup Vote can be found in **Annex 7**. The table below provides a summary of the Workgroup Members' view on the best option to implement this change.

For reference the Applicable Grid Code Objectives are:

i. *To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity*

ii. *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);*

iii. *Subject to sub-paragraphs (i) and (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;*

iv. *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*

v. *To promote efficiency in the implementation and administration of the Grid Code arrangements*

** See Electricity* System Operator Licence

The Workgroup concluded unanimously that the Original Solution better facilitated the Applicable Grid Code Objectives than the Baseline.

Option	Number of voters that voted this option as better than the Baseline
Original	5

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.

Implementation approach

As this modification is proposed to ensure consistency between the CC and ECC 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

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

Interaction with the Electricity Balancing Guideline (EBR).

How to respond

Code Administrator Consultation questions

1. Please provide your assessment for the proposed solution against the Applicable Objectives against the current baseline?
2. Do you have a preferred proposed solution?
3. Do you support the proposed implementation approach?
4. Do you have any other comments?
5. Do you agree with the Workgroup's assessment that the modification does impact the Electricity Balancing Regulation (EBR) Article 18 terms and conditions held within the Code?
6. Do you have any comments on the impact of GC0173 on the EBR Objectives?

Views are invited on the proposals outlined in this consultation, which should be received by **5pm** on **05 September 2025**. Please send your response to grid.code@neso.energy using the response pro-forma which can be found on the modification page.

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 or the industry and may therefore not influence the debate to the same extent as a non-confidential response.

[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.

Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
BEGA	Embedded Medium Power Stations
CC	Connection Conditions
CMP	CUSC Modification Proposal
CP	Compliance Processes
CUSC	Connection and Use of System Code
DCC	Demand Connection Code
DNO	Distribution Network Operator
EBR	Electricity Balancing Guideline
ECC	European Connection Conditions
ECP	European Compliance Processes
ENA	Energy Network Association
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)
MAS	Mandatory Ancillary Services
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	Legal Text
Annex 4	Summary table outlining high-level Legal Text changes
Annex 5	Workgroup Consultation responses
Annex 6	Workgroup Consultation Summary
Annex 7	Workgroup Vote
Annex 8	Workgroup Attendance Record
Annex 9	Workgroup Action Log