

Grid Code Review Panel

Thursday 26 August 2021

Online Meeting via Teams



WELCOME

As we continue to operate in these uncertain times and following best practice from other businesses, we want to adapt to be able to facilitate the governance process in the best possible way. Since moving to virtual Panel meetings, we have found it harder to accurately capture minutes and attribute comments correctly to attendees. We are also conscious of the impact of short periods of poor sound quality. With your consent, we wish to use WebEx to record all Panel meetings to help us accurately document minutes. We want to assure you that the recordings will be explicitly used to document minutes only and the same protocol for Panel meetings still applies in terms of strict confidentiality. As has always been the case, the draft minutes will be sent to Panel and the Chair for approval each month. Once the minutes are approved, the recording will be deleted. A reminder of this and consent will be sought at the beginning of each meeting, to be noted in the minutes.

As the independent Panel Chair, we have tested the appropriateness of recording Panel meetings with Trisha McAuley who is supportive of the approach. We welcome any comments or feedback on this.



Hybrid Working

Rob Marshall, National Grid ESO

Hybrid working

Facilities

We are upgrading the capabilities of our conference suite in Faraday House to better facilitate hybrid meetings – With some people meeting in person and others joining remotely

- New audio connections are being installed and calibrated
- All our meeting rooms will be equipped with cameras at the front of the room
- Rooms will be available with capacities of 6-16 people

Timelines

Currently ESO continues to have social distancing measures in place within its offices. These are anticipated to be reduced/removed in September as part of a phased return to the office for our people.

Approval of Panel Minutes

Minutes of the Panel meeting held 24 June and 29 July 2021 to be approved at the August Panel.

Actions Log

Review of the actions log



Chair's Update

Update from the Chair

Authority Decisions and Update



Update:

Decision: GC0134 *Removing the telephony requirements for small, distributed and aggregated market participants who are active in the Balancing Mechanism*

18 August 2021 – approved for implementation

The Authority's publication on decisions can be found on their website below:

https://www.ofgem.gov.uk/system/files/docs/2021/05/edd_table_for_publication_wc_240521_final_clean_v_002.pdf

New modifications submitted

One new modification submitted for August 2021

GC0152 - Updating the Grid Code governance process to ensure we capture network code on electricity emergency and restoration (NCER) change process for Article 4 Terms and Conditions (T&Cs)





GC0152 – Updating the Grid Code governance process to align with the Emergency and Restoration Code Terms and Conditions (T&Cs) change process

History and Purpose

EU
Commission
Regulation
2017/2196
established a
network code
on electricity
emergency
and
restoration
(NCER).



NGESO
required to
submit
proposals to
Ofgem in
accordance
with NCER;



Requirement
is to Map E&R
T&Cs for
system
defence and
system
restoration
service
providers



NCER Article
4 further
states that
any
amendment to
these T&Cs
needs to be
consulted on
with
stakeholders
for a period of
not less than
one calendar
month



Ofgem
approved
mapping of
T&Cs on
13/07/21

History and Purpose

- The ESO's proposals relating to Emergency and Restoration Network Code (NCER) were approved by Ofgem on 13 July 2021
- This included a mapping from the Grid Code to the Terms and Conditions to be a system defense or system restoration service provider
- In their decision letter [Ofgem Letter](#) Ofgem recommended a minor change to align the Grid Code amendment process to the change process set out for the T&Cs in the NCER
- Ofgem further noted that this should be progressed through the self-governance route

GC0152– Legal Text Solution

This modification makes minor changes in order to formalise EBGL Article 18 GC0132 to achieve the cross-referencing of the T&Cs as required.

Legal text amendments to GR.B Regulated Sections:

Addition to mapping of NCER Article 4 T&Cs for system defence and system restoration service providers to the Grid Code, inserting table as displayed on [Proposal Form GC0152](#)

- **ANNEX GR.B** Add second title- i) “Mapping of EGBL A18 for balancing service providers and balancing responsible parties to the Grid Code.” ii) Mapping of E&R T&Cs for system defence and system restoration service providers. *insert second mapping table below ii)
- **GR18.9** Changed to “Retained EU Law” to reflect GC0149 enactment
- **GR22.2 (m)** Changed to “Retained EU Law” to reflect GC0149 enactment
- The consequences of the changes to the mapped clauses in the GC are that it will require a minimum 1 month consultation (this is a very similar process to EBGL A 18 as implemented in GC0132)
- No new or changed obligations are placed on any party by this amendment – the amended text is an addition to Annex GR.B Regulated Sections mapping of EGBL Article 18 T&Cs for balancing service providers and balancing responsible parties to the Grid Code.

Critical Friend Feedback: GC0152

Code Administrator comments	Amendments made by the Proposer
Critical Friend check completed with no amendments suggested.	Timetable updated following discussion with Code Administrator.
Query raised regarding proposed implementation date.	Impact on BSC identified following query from Code Administrator. Elexon informed.

Grid Code Self-Governance Criteria

Self-Governance Criteria	<p>A proposed Modification that, if implemented,</p> <ul style="list-style-type: none">(a) is unlikely to have a material effect on:<ul style="list-style-type: none">(i) existing or future electricity consumers; and(ii) competition in the generation, storage, distribution, or supply of electricity or any commercial activities connected with the generation, storage, distribution or supply of electricity; and(iii) the operation of the National Electricity Transmission System; and(iv) matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies; and(v) the Grid Code's governance procedures or the Grid Code's modification procedures, and(b) is unlikely to discriminate between different classes of Users.(c) other than where the modification meets the Fast Track Criteria, will not constitute an amendment to the Regulated Sections of the Grid Code.
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Proposer's justification for Self-Governance

- Ofgem are comfortable with this mod going via the self-governance route as advised by letter dated 13th July 2021 from Adam Gilham Senior Manager ESMS. The letter
- approves the SGU list and the High Priority SGU list
- acknowledges that the list of the measures to be implemented by those SGUs are set out within the Grid Code
- acknowledges that the T&Cs are already set out within the Grid Code, Balancing and Settlement Code (BSC) and the ESO's black start strategy and procurement methodology
- Approved the mapping of the system defence and system restoration service provider T&Cs to the Grid Code
- Elexon highlighted that including reference to BSC in the annex means this mod is not future-proofed. What is the considered best course of action?

RECOMMENDATION TO PANEL: Panel is asked to agree that this proposed amendment is self-governance and can proceed straight to Code Admin Consultation

GC0152 – Asks of Panel

- **AGREE** that this Modification meets the Self-Governance Criteria (Panel decision) rather than Standard Governance (Ofgem decision)
- **AGREE** that this Modification should proceed to Code Administrator Consultation
- **NOTE** that there appear not to be any impacts on the Electricity Balancing Regulation (EBR) Article 18 terms and conditions held within the Grid Code
- **NOTE** the proposed timeline





Online voting template demo
Matt Baller National Grid ESO



Inflight Modification Updates

Nisar Ahmed, Code Administrator

Dashboard – Grid Code (as at 18 August 2021)

Category	April	May	June	July	August
New Modifications	1 <i>GC0149</i>	0	2 <i>GC0150</i> <i>GC0151</i>	0	1 <i>GC0152</i>
In-flight Modifications	17	17	18	18	19
Modifications issued for workgroup consultation	0	0	0	1 <i>GC0151 (30 Jul)</i>	0
Modifications issued for Code Administrator Consultation	1 <i>GC0133 (13 April)</i>	2 <i>GC0134 (7 May)</i> <i>GC0149 (14 May)</i>	0	1 <i>GC0150 (01 Jul)</i>	0
Workgroups held	3	3	3	7	4
Authority Decisions	0	0	0	1 <i>GC0109</i>	1 <i>GC0134</i>
Implementations	0	2 <i>GC0144 – 26 May</i> <i>GC0147 – 17 May</i>	0	0	1 <i>GC0109 23 Aug</i>

In flight Modifications update – the asks of Panel

GC0138

NOTE: Workgroup need more time to review the Workgroup report / to be presented to the September Panel

GC0151

NOTE: Consultation responses are being summarised and Workgroup meeting is on the 19/08/2021 to discuss responses and alternatives.



Workgroup Reports

GC0137 Minimum Specification Required for Provision of GB Grid Forming (GBGF) Capability (formerly Virtual Synchronous Machine/VSM Capability)

Nisar Ahmed, Code Administrator

GC0137 Update

- GC0137 Workgroup Report presented to July 2021 GRCP
- Prior to the Panel Meeting a number of comments were received from a Panel member (Graeme Vincent) which were agreed by the Panel as being slightly more than typographical and requiring some clarification.
- It was agreed to update and agree the legal text with the Panel Member (Graeme Vincent) prior to circulating the text to the Workgroup for final comment.
- The revised text was circulated to GC0137 Workgroup Members on the 5th August with a response date of the 16th August
- Additional comments (Alastair Frew) were received which have been incorporated into the legal text
- A small amendment has been introduced to the Workgroup Report (as well as the legal text) to reflect the requirements for Dynamic System Monitoring. A further issue relating to fault ride has been reflected in the Workgroup Report which will need to be considered by the Expert Group but the legal text as drafted remains correct.
- The Panel are requested to consider the updated report and legal text and take a view on whether it should proceed to the Code Administrator Consultation (CAC).

GC0137 – Background

The purpose of this modification is simply to develop the minimum Grid Code technical specification for a GB Grid Forming Capability (which was formerly referred to as a Virtual Synchronous Machine - “VSM”). The market arrangements will then be addressed as a separate piece of work once the specification and technical requirements are in place.

The specification will enable parties to offer an additional grid stability service. This will be fundamental to ensuring future Grid Stability, facilitating the target of zero carbon System operation by 2025.

The implementation of this modification and the subsequent launch of a commercial market would result in the provision of additional stability services operated by the ESO. The primary aim being the ability to run the entire electricity transmission system on low carbon generation sources that include nuclear power, whilst at the same time ensuring a safe, secure and economic system.

For Generators, Interconnectors and other “Providers” it will provide them with a potential new revenue stream. In order to take part in such a market, Generators, Interconnectors and other “Providers” may wish to amend/modify their plant, or potentially amend or incorporate new software to enable them to satisfy the requirements of the specification if they wished to enter this future market.

GC0137 Workgroup Solution

This will enable Grid Forming capability – in that the affected plant provides the same type of performance from that traditionally associated with synchronous generators. Such plant would support the Grid during unplanned events/faults particularly in respect of: -

- i) limiting the rate of change of system frequency following the loss of a generating unit or load;
- ii) injecting instantaneous active power into the system at the time of a fault as a result of the corresponding phase change;
- iii) injecting instantaneous Fast Fault Current into the system at the time of a fault as a result of the corresponding voltage change;
- iv) Contributing to damping power;
- v) Limiting vector shift;
- vi) Contributing to synchronising torque;
- vii) Contributing to the maintenance of an improved voltage profile during a fault – a fundamental pre-requisite for fault ride through.

GC0137 Workgroup consultation and summary responses

The Workgroup held their Workgroup Consultation between 30 March to 30 April which resulted in 15 responses and 1 confidential response was received.

Following on from the consultation, the support for the establishment of an Expert Group to develop a “Best Practice Guide” was also reaffirmed by the workgroup. This would enable the Grid Code to remain at a reasonably high level and relatively flexible whilst the detail can be addressed through a Best Practice Guide and would cover the detail relating to modelling, testing, simulation, compliance together with worked examples and what would be considered to be a good level of performance.

This would be a separate piece of work falling outside the scope of the GC0137 modification.

The aim of this work is therefore to define a minimum non-mandatory specification in the Grid Code which would provide a frame work for a future stability market. The market elements are a separate piece of work which will be addressed outside of this modification but would be designed to be flexible and transparent and open to any party with any technology so long as that technology is capable of meeting the requirements of the specification. Even if a developer owns and operates a plant with the required capability there is no requirement for them to enter the market if they do not wish to and equally there would be no requirement for older non-compliant plant to meet these requirements.

Workgroup consultation and summary responses

The Workgroup met on 21 June 2021 to carry out their Workgroup vote in respect of the solution and legal text. The Workgroup concluded by majority that the Original better facilitated the Applicable Objectives than the Baseline

Option	Number of voters that voted this option as better than the Baseline
Original	17
Baseline	1

GC0137 Legal Text changes

Panel Member has sent in some clerical changes and doesn't impact the solution but improves it. Looking for Panel to agree in principle to go to Code Administrator Consultation.

- **GR 22.4 Do Panel consider the amendments “typographical”?**

Yes → Instruct Code Administrator to make changes to legal text and issue to Panel for 5 working days to review before proceeding to Code Admin Consultation

No → Direct back to the workgroup and represent workgroup report at August Panel

GR.22.4 A draft of the **Grid Code Modification Report** shall be tabled at the **Panel Meeting** prior to submission of that **Grid Code Modification Report** to the **Authority** as set in accordance with the timetable established pursuant to GR.19.1 at which the Panel may consider any minor changes to the legal drafting and:

i (i) if the change required is a typographical error the **Grid Code Review**

Panel may instruct the **Code Administrator** to make the appropriate change and the **Panel Chairman** will undertake the **Grid Code Review Panel Recommendation Vote**; or

i (ii) if the change required is not considered to be a typographical error then

the **Grid Code Review Panel** may direct the **Workgroup** to review the change. If the **Workgroup** unanimously agree that the change is minor the **Grid Code Review Panel** may instruct the **Code Administrator** to make the appropriate change and the **Panel Chairman** will undertake the **Grid Code Review Panel Recommendation Vote** otherwise the **Code Administrator** shall issue the **Grid Code Modification Proposal** for further **Code Administrator** consultation after which the **Panel Chairman** will undertake the **Grid Code Review Panel Recommendation Vote**.

i (iii) if a change is not required after consideration, the **Panel Chairman** will undertake the **Grid Code Review Panel Recommendation Vote**.

GC0137 Terms of Reference

Workgroup Term of Reference	Location in Workgroup Report (to be completed at Workgroup Report stage)
Implementation and costs;	Page 50
Review draft legal text should it have been provided. If legal text is not submitted within the Grid Code Modification Proposal the Workgroup should be instructed to assist in the developing of the legal text; and	Annex 19
Consider whether any further Industry experts or stakeholders should be invited to participate within the Workgroup to ensure that all potentially affected stakeholders have the opportunity to be represented in the Workgroup. Demonstrate what has been done to cover this clearly in the report	Nominations for this workgroup achieved a quorate and diverse membership of 40+ members.
Consider EBGL implications	Page 8
Agree the minimum specification for Virtual Synchronous Machine (VSM) capability and define the term clearly.	Referenced throughout the report
Consider what the testing requirements would be	Page 33
Consider if adding the minimum specification to the Grid Code is a limiting factor to innovation	Page 42
Consider the related developments in the market and how that may affect the minimum specification (e.g. phase 2 of the stability pathfinder)	Page 42
Consider the inadvertent impact of the minimum specification for Virtual Synchronous Machine (VSM) capability on existing users	Referenced throughout the report
Consider other code impacts a)	Page 8
Consider examples of VSM technology	Referenced throughout the report

GC0137 the asks of Panel

- **AGREE** that the Workgroup have met their Terms of Reference
- **AGREE** that this Modification can proceed to Code Administrator Consultation (subject to the legal text changes being made and approved by the workgroup)
- **NOTE** that this Modification does not impact the European Electricity Balancing Guideline (EBGL) Article 18 terms and conditions held within the Grid Code?
- **NOTE** the ongoing timeline (subject to change based on legal text amendments)

GC0137 - Timeline



Draft Final Modification Reports (DFMR)

GC0150 - Housekeeping change post- GC0147 implementation

Nisar Ahmed, Code Administrator

GC0150 Background

Ofgem's decision on 'GC0147: Last resort disconnection of Embedded Generation – enduring solution' recommended that a minor housekeeping change should be made to clarify an area of cross-referencing in the new 'Embedded Generation Control' section OC6B of the code.

This change is required for clarification only. No new or revised obligations are placed on any parties as a result but Ofgem's view is that it makes the solution clearer.

The solution cross-references the priority order set out in GC0147 and included in OC6B in which embedded generators are to be considered for control actions. In Ofgem's view as included in their decision, it makes it clearer that this should be used where possible in the implementation of any instructions for embedded generation control as given by the ESO to DNOs.

GC0150 – Code Administrator Consultation

The Code Administrator Consultation was issued on the 30 June 2021 closed on 30 July 2021 and received one response from NGENSO

On whether the Original better facilitates the Grid Code Objectives?

GC0150 is a minor change suggested by Ofgem in their decision on GC0147. It clarifies cross-referencing of the priority order in which embedded generators may considerably be included in the implementation by DNOs of an embedded generation control instruction issued by the ESO. As such, it better fulfils objective (c) by improving clarity of the GC0147 solution which is intended to maintain system security.

GC0150 – Code Administrator Consultation

On supporting implementation approach

Yes – this is a very minor change.

GC0150 - Asks of the Panel

- **NOTE** that this Modification does not impact the Electricity Balancing Reform regulation (EBR) Article 18 terms and conditions held within the Grid Code?
- **VOTE** whether or not to determine implementation
 - Does the Original or proposal better facilitate the objectives than the current Grid Code arrangements?
- **NOTE** next steps

GC0150 Timeline

Milestone	Date
Self Governance DFMR presented to Panel	26 August 2021
Self Governance FMR sent to Panel for review (5 working days)	07 September 2021
Appeals Window	07 September – 29 September 2021
Implementation	04 October 2021

The background features several decorative yellow lines. In the top left, there are several thin, curved lines that sweep upwards and to the right. In the bottom left, there are several thin, curved lines that sweep downwards and to the right. On the right side, there are several thick, straight lines that sweep upwards and to the right, creating a sense of movement and energy.

Reports to Authority

None

Implementation Update

GC0134 *Removing the telephony requirements for small, distributed and aggregated market participants who are active in the Balancing Mechanism*

Approved by the Authority 18 August 2021. The Authority has directed that the Original proposal of this Modification be implemented on 01 September 2021.

The background features several abstract, flowing yellow lines. Some lines are curved and looped, while others are straight and diagonal, creating a sense of movement and energy.

Governance

None



Grid Code Development Forum and Workgroup Day(s)

Nisar Ahmed, Code Admin NGESO

Grid Code Development Forum

GCDF 04 August 2021

Cancelled due to no agenda items

GCDF 07 September 2021

Standing Items

- **Distribution Code Panel update (Alan Creighton)**
- **JESG Update (information only)**

JESG Update

Joint European Stakeholder Group meeting was cancelled which was due on Tuesday 10 August 2021.

The next JESG meeting will be on [14 September 2021](#) starting at 10am.

Updates on other industry codes



Blockers to Modification Progression

(February, May, August, November)

Blocker Code	May		June		July		Comments
	Count	Mods affected	Count	Mods affected	Count	Mods affected	
Quoracy	0	-	0	-	0	-	With the implementation of GC0131 quoracy is no longer a significant blocker.
Prioritisation	0	-	0	-	0	-	GC0151 – Urgent modification has affected Code Admin workload. Not a blocker for other modifications
ESO delay	1	GC0126	1	GC0126	1	GC0126	GC0126 – The implementation timeline has been delayed due to Covid-19 complications; implementation is currently targeted in December 2021.
Code Administration delay	0	-	0	-	0	-	
Industry delay	0	-	0	-	0	-	
Legal issues		-		-	1	GC0137	Legal text amendments were suggested by Panel resulting in a one month delay for the workgroup report
Ofgem send back		-		-	1	GC0133	Send back from Ofgem required further work on benefits and risks to be covered in the Final Modification Report



Horizon scan

(February, May, August, November)

Horizon Scan

	2021												2022											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
SOGL Article 118 & 119							Q2		Mod to be raised in Q2															
Energy Codes Review													Q1 '22	Work not expected to begin before 2022										
Whole System Grid Code Digitisation								Scoping & engagement					Q1 '22	Mods to be raised in 2022 if required										
Early Competition/Offshore					Scoping & engagement								Expected to start in 2022											
RFG Phase 2													Expected to start in 2022											



Electrical Standards

None



Forward Plan Update/Customer Journey)

Critical Friend Quarterly Update – Nisar Ahmed
(January, April, July and October)

AOB

1. ESO Plug in Newsletter
2. General discussion on impacts of coronavirus outbreak on Grid Code (ALL)

Next Panel Meeting

**10am on 30 September 2021 via
Microsoft Teams**

Papers Day – 22 September 2021

**Modification Proposals to be
submitted by 15 September 2021**

Close



Trisha McAuley
Independent Chair, GCRP