

WELCOME





Grid Code Review Panel

Thursday 21 March 2024

Microsoft Teams

Approval of Panel Minutes

Approval of Panel Minutes from the Meeting held

22 February 2024



Action Log

ESO

Grid Code Review Panel Actions Log

March 2024

Open Actions:

Action No.	Status	Action	Date raised	Owner	Due	Comments and Updates
451	Open	ESO to provide overview of HND to Grid Code Panel	23/11/2023	TB	25/04/2024	The HND team recommend this is done at the April Panel meeting as they are to publish a large piece of work in March (tCSNP2).



Chair's Update

Authority Decisions and Update



Decisions Pending

- ☐ [GC0154: Incorporation of interconnector ramping requirements into the Grid Code as per SOGL Article 119](#) – expected decision due 15 March 2024

Decisions Received since last Panel meeting

- ☐ None

Received Final Modification Reports since last Panel Meeting

- ☐ None

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

<https://www.ofgem.gov.uk/publications/code-modificationmodification-proposals-ofgem-decision-expected-publication-dates-timetable>



**New modifications
submitted**



GC0168 - Submission of Electromagnetic Transient Models Grid Code Review Panel (GCRP) - March 2024

Frank Kasibante

Critical Friend Feedback – GC0168

Code Administrator comments	Amendments made by the Proposer
<p>Requested clarity throughout the document.</p> <p>Provided timeline.</p> <p>Requested legal text on the correct baseline version.</p> <p>Requested further information on implementation date, implementation approach and justification for governance route.</p>	<p>Proposer accepted all amendments made by the Code Administrator</p>

GC0168: Submission of Electromagnetic Transient (EMT) Models

What's the issue?

Great Britain's power system is moving towards net zero carbon operation.

This network transition from large synchronous generators to a large number of smaller Inverter-Based Resources (IBR) is causing new and varying challenges to the power system. Examples of these challenges include, control interactions, low fault level, inverter instability, Transient Overvoltage, etc.

The Electricity System Operator (ESO) requires EMT models from Users so that it can analyse and understand how these interactions affect the network under different system conditions.

Why Change?

Unlike for a system with a previously high penetration of synchronous generation which could be adequately analysed and studied with Root Mean Square (RMS) models, an evolving system with a high penetration of IBR requires EMT models to perform more detailed investigations and analyses.

The current requirements in the Grid Code are not sufficient to cover all Users (especially Users connected before September 2022) that the ESO requires EMT models from (including generation connected to the transmission network). This restricts the ability for the ESO to perform system studies, modelling and post fault analysis.

What is the proposed solution?

The proposed solution is to mandate the collection of the EMT models from all relevant Users. This will require updates to clauses in PC.A.6 and PC.A.9.

These models will feed into a wider GB Model enabling investigations at the near term and post fault studies and planning studies. This will enable safe and reliable operation of the system and enhance the security of GB electricity supply.

GC0168: Submission of Electromagnetic Transient Models

What is the benefit for the Grid Code User?

When generators provide EMT models, the ESO will be able to carry out pre-fault and post-fault analysis studies, the outputs of which will lead to accurate operational decisions in the interest of safety and reliability of the system which could ultimately lead to lower operational costs for the benefit of the end consumer.

What is the proposed governance route?

Standard Governance modification with assessment by a Workgroup.

Why is Standard Governance the proposed route?

The proposed change is material and a robust solution needs to be developed by Industry via Work Group.

Ad Hoc Sessions

Based on feedback from the Grid Code Development Forum (GCDF), two Ad Hoc sessions with leading Industry experts were held to refine the defect and get views on proposed legal text. These views have been incorporated and are reflected in the proposed solution.

GC0168: Submission of Electromagnetic Transient Models

Proposed Additional Terms of Reference

- Consider a cost recovery mechanism to receive the model data required to share with CUSC Workgroup.
- Consider use/introduction into the Legal Text of generator classifications types C,D as opposed to Medium and Large.
- Consider approach on collecting models and reference to published guidance/phased application of approach.
- Consider codifying the list of Users who are required to submit EMT models.

GC0168: Submission of Electromagnetic Transient Models

Proposed Approach of Collecting an EMT Model

Legacy Synchronous generator (brushed exciter)	Legacy Synchronous generator pre- H/04 implementation	Non-synchronous generation post H/04 & synchronous generation post H/04 with Power System Stabilisers (PSS)	Synchronous generation post H/04 without Power System Stabilisers (PSS)	Interconnectors	Network Operators and Non-embedded Customers	Post GC141 implementation, all users
Derive EMT from Detailed Planning Data (DPD) submission. However, User to support developing a guidance, validation, review and model retention.	Derived from available data. More data request to Users. Some cases might have to adopt a library model?	EMT model used to support compliance statements assumed to exist and that model retained by the developer to be provided following receipt of ESO request	Derived from available data. More data request to Users. Some cases might have to adopt a library model?	Required to provide EMT evidence; models should be available/available on request now.	EU code Users covered under PC.A.6.7 and PC.6.1.3. ESO request legacy active demands with non-EU grid supply points, SVCs and STATCOMs in DNO network to provide models.	GC0141 rules apply
Compensation Mechanism						
No costs	No costs	If User able to demonstrate original EMT model is not available from manufacturer, ESO will support costs in obtaining that model. Cost also covers User to update original model to get it to work within a larger network. Any cost in updating a model to reflect deviation in behaviour is borne by the User.	No costs	Limited to only any costs in requiring user to update original model to get it to work within a larger network simulation. As with others any costs in updating model to reflect deviation in behaviour from provided model is borne by the user	No cost for EU code Users. Cost covers for GB Code Users to produce models.	GC0141 rules apply

GC0168: Submission of Electromagnetic Transient Models

List of Users by Technology Type who will be required to provide EMT models

User Connection Type	Technology	EMT model requirements on Users connected after 1st of Sep 2022 under current Grid Code	EMT model request under GC0168 from Users connected before and after 1st of Sep 2022
Directly Connected	Non- Synchronous Generator	Yes	Yes
	Synchronous Generator	Yes	Yes
Bilateral Embedded Generator Agreement (BEGA) - Large	Non- Synchronous Generator	Yes	Yes
	Synchronous Generator	Yes	Yes
Bilateral Embedded Generator Agreement (BEGA) - Medium	Non-Synchronous Generator	No	Yes
	Synchronous Generator	No	Yes
Bilateral Embedded Generator Agreement (BEGA) - Small	Non-Synchronous Generator	No	No
	Synchronous Generator	No	No
Bilateral Embedded Licence Exemptible Large Power Station Agreement (BELLA)	Non - Synchronous Generator	Yes	Yes
	Synchronous Generator	Yes	Yes
Licence Exemptible Embedded Medium Power Stations (LEMPS)	Non-Synchronous Generator	No	Yes
	Synchronous Generator	No	Yes
Network Operator	Active elements e.g. SVCs, STATCOMs, demand	No	Yes
Non-embedded customers	Active demand e.g. data centres, electrolyzers etc.	Yes	Yes

Timeline for GC0168 – Proposed Timeline - *Workgroup*

Milestone	Date	Milestone	Date
Modification presented to Panel	21 March 2024	Code Administrator Consultation (1 calendar month)	03 December 2024 to 03 January 2024
Workgroup Nominations (15 Working Days) <i>15 clear working days minimum</i>	26 March 2024 to 18 April 2024	Draft Final Modification Report (DFMR) issued to Panel (5 working days)	22 January 2025
Workgroups 1 to 3 <i>Refine solution and draft legal text, draft and finalise workgroup Consultation</i>	13 June 2024 11 July 2024 08 August 2024	Panel undertake DFMR recommendation vote	30 January 2025
Workgroup Consultation (20 working days)	14 August 2024 to 12 September 2024	Final Modification Report issued to Panel to check votes recorded correctly.	04 February 2025 to 11 February 2025
Workgroups 4 and 5 <i>Review Workgroup Consultation Responses, finalise Workgroup Report and hold Workgroup Vote</i>	01 October 2024 29 October 2024	Final Modification Report issued to Ofgem	13 February 2025
Workgroup report issued to Panel (5 working days)	20 November 2024	Ofgem decision	TBC
Panel sign off that Workgroup Report has met its Terms of Reference	28 November 2024	Implementation Date	10 working days after Ofgem decision

GC0168 – the asks of Panel

- **AGREE** that this Modification should follow Standard Governance (Ofgem decision) rather than the Self-Governance Criteria (Panel decision)
- **AGREE** that this Modification should proceed to Workgroup
- **AGREE** Workgroup Terms of Reference
- **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

An aerial photograph of a green agricultural field, possibly corn, with several bright yellow diagonal streaks running across it from the bottom left towards the top right. The text is overlaid on the left side of the image.

GC0169 - Material changes identified from Grid Code Modification GC0136 and Consistency of requirements between the Connection Conditions and European Connection Conditions

March 2024

Critical Friend Feedback – GC0169

Code Administrator comments	Amendments made by the Proposer
Requested clarity throughout the document	Proposer added further clarity within the document and amended the name of their modification
Links added throughout document	
Suggested modification name change	Proposer suggested that although there are two issues covered by the modification, they believed it should remain as one modification
Suggested that the modification covers multiple defects and should be split out into two modifications	
Suggested that engagement with the Distribution Code Administrator should occur prior to Workgroups commencing, due to the interaction with G99	
Timeline provided	

Overview

- A review of the Grid Code has identified a range of items which require clarification / correction
- These include but are not limited to:-
 - Issues identified outside the scope of GC0136 (identified as being material but not necessarily substantial)
 - Alignment/clarification between the Connection Conditions and European Connection Conditions
 - The Issue was presented to the January GCRP and it was agreed:-
 - The complex elements requiring specialist resource identified as part of GC0136 should be removed from the scope of this work and designated modifications established (one is known relating to CPA.3.2.1)
 - House Keeping Changes and typographical errors should be addressed via a separate self Governance modification

Corrections arising from GC0136

- These issues are detailed in Annex 3 of the GC0136 of the Final Modification Report (Updated as Annex 1 in the Grid Code Proposal Modification Form)
- The opportunity has been taken to identify which items can reasonably be addressed by a Workgroup without requiring specialist resource
- In summary these include:-
 - Glossary and Definitions - Caution Notice / Consistency of SI units / Interconnector Scheduled Transfer / Intraday Cross-Zonal Gate Closure Time
 - Change Grid Code references of SHETL to SHET
 - OC9.6.4 – Requires more work in formulation and to ensure the action is clear
 - BC2.13 – Interconnector Scheduled Transfer / Intraday Cross-Zonal Gate Closure Time / relationship with Glossary and Definitions
 - Ensure consistency between Grid Code and G99
 - General Conditions - Re-word Paragraph GC.5.2 and GC5.4 and confirm if clauses GC11.2 and GC15.1 can be simplified

Alignment between Connection Conditions and European Connection Conditions and General Corrections

- Propose to remove thermal storage technologies in PC.A.3.4.1 eg Latent Heat Storage, Thermochemical Storage and Sensible Heat Storage
- CC/ECC3.3.2 – Change GB Generator and EU Generator to Embedded Medium Power Station not subject to a Bilateral Agreement
- Frequency Sensitive Relays CC/ECC.6.3.13
 - CC.6.3.12 prohibits the use of rate of change of frequency relays which was not carried over into the ECC's when RfG was implemented.
- Mandatory Ancillary Services CC/ECC.8.1
 - Clarification required between CC/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.
 - Amend ECC.8.1 (c) as it contradicts ECC.8.1 (a) for directly connected Medium Power Stations.
 - Clarification for Embedded Medium Power Stations (BEGAs) defining the requirement for an MSA other than in respect of Embedded Small Power Stations
- ECP.A.6.4 and ECP.A.6.2 - correct ECC References
- ECP.A.6.8.1 is not well written and should be updated to improve clarity

Interactions between Grid Code and G99

- Fault Ride Through: The Grid Code specifies the simulation requirements in ECP.A.3.5 which includes unbalanced as well as balanced Supergrid voltage faults. This is missing from G99 where it only asks Users to provide unbalanced fault simulations
- Voltage Control Testing: $\pm 4\%$ step injection test is missing from G99

Request of GCRP

- Note that some issues identified following Grid Code Modification GC0136 are of a specialist nature and will require bespoke modifications (CP.A.3.2.1)
- It would be an advantage for Workgroup Members of this Modification to have some experience of GC0136 and Engineering Recommendation G99. In view of this, consideration should be given to a joint Grid Code / Distribution Code Workgroup

Timeline for GC0169 – Proposed Timeline - *Workgroup*

Milestone	Date	Milestone	Date
Modification presented to Panel	21 March 2024	Code Administrator Consultation (1 Month)	03 December 2024 to 03 January 2024
Workgroup Nominations (15 Working Days)	02 April 2024 to 23 April 2024	Draft Final Modification Report (DFMR) issued to Panel (5 working days)	22 January 2025
Workgroups 1 to 3 To discuss the proposal, analysis required and begin refining the solution.	19 June 2024 24 July 2024 21 August 2024	Panel undertake DFMR recommendation vote	30 January 2025
Workgroup Consultation (15 working days)	28 August 2024 to 18 September 2024	Final Modification Report issued to Panel to check votes recorded correctly	04 February 2025 to 11 February 2025
Workgroup 4 and 5 To review the Workgroup Consultation responses and to finalise the solution	03 October 2024 31 October 2024	Final Modification Report issued to Ofgem	13 February 2025
Workgroup report issued to Panel (5 working days)	20 November 2024	Ofgem decision	TBC
Panel sign off that Workgroup Report has met its Terms of Reference	28 November 2024	Implementation Date	10 working days after Ofgem decision

GC0169 – the asks of Panel

- **AGREE** that this Modification should follow Standard Governance (Ofgem decision) rather than the Self-Governance Criteria (Panel decision)
- **AGREE** that this Modification should proceed to Workgroup
- **AGREE** Workgroup Terms of Reference
- **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

GC0170: Typographical and formatting updates following the implementation of GC0156: Facilitating the Implementation of the Electricity System Restoration Standard

Milly Lewis



Critical Friend Feedback – GC0170

Code Administrator comments	Amendments made by the Proposer
<p>Requested further clarity on legal text changes within Proposal form</p> <p>Requested legal text for modification</p>	<p>Proposer accepted all amendments made by the Code Administrator</p>

Background and Solution

During the course of the GC0156 implementation the following minor typographical and formatting changes were identified and using the Fast Track Self Governance route in a timely manner post implementation means that the Grid Code is as consistent as possible.

Grid Code Reference	Why the is change needed?
Glossary and Definitions	<ul style="list-style-type: none"> •‘Auxiliary Energy Supplies’ There should be a space between be and available •‘Legal Challenge’ The ‘Legal’ was inadvertently removed from the title of the definition of •‘Local Joint Restoration Plan’ Should have a space between a and Restoration •‘Total Shutdown Top Up Restoration Capability’ The previous definition was not removed from the new definition and it references Black Start. Sufficient is also spelt incorrectly •‘Top Up Restoration Contractor’ There should be a space between a and Top
Planning Code	<ul style="list-style-type: none"> •PC.6 Page break added to move to separate page •PC.7 Page break added to move to separate page •PC.A.6.3.1 Contractors was spelt with an additional s
Connection Conditions	<ul style="list-style-type: none"> •CC.6.3.2 e) (iii) There is a comma missing from the clause between GB Generator and Offshore Transmission, and between GB Code User and the Offshore Transmission Licensee
European Connection Conditions	<ul style="list-style-type: none"> •ECC.6.3.7.1.2 Numbering and formatting issues need to be resolved •ECC.7.9 Clause needs to realigned
Operating Code 2	<ul style="list-style-type: none"> •OC2.4.1.3.5 Page break added to move to separate page
Operating Code 5	<ul style="list-style-type: none"> •OC5.7.2.1 g) Relevant Transmission Licensee is spelt incorrectly •OC5.7.2.3 d) (iii) Relevant Transmission Licensee is spelt incorrectly •OC5.7.2.4 This clause has an additional ‘be’ •OC5.7.2.7 Arrangements is spelt incorrectly •OC5.7.3.1 Anchor Restoration is spelt incorrectly

Grid Code Reference	Why the is change needed?
Operating Code 9	<ul style="list-style-type: none"> •OC9.1.1 Across is spelt incorrectly •OC9.4.5.1.1 Restoration is missing from Top Up Restoration Contractors •OC9.4.5.2.1 The commas after Network Operator's System needs to be removed •OC9.4.7.6.3 (d) (ii) Aligning the bottom sentence with the clauses above. •OC9.5.2.3 a) DC Converter Station Owner should not be capitalised •OC9.5.4 Page break added to move to separate page
Data Registration Code	<ul style="list-style-type: none"> •DRC.1.6 Spacing removed ahead of they •DRC.6.1.20 The Schedule information should be underlined for consistency •DRC.6.2 Table Updated to add 16 to All Suppliers and removed from All Network Operators •Schedule 2 – 6Contractors should be replaced with Restoration Contractors and separating the 3rd paragraph after 'appropriate' •Schedule 3 The bottom paragraph is now aligned •Schedule 5 – Page 7 of 11 (e) Fault Clearance is correctly aligned •Schedule 6 - Users Outage information table Page 1 of 3 add space 'This includes' •Schedule 11 Table 11(b) - Data description outturn and outturn Weather Corrected has been reformatted •Schedule 11 Table 11(c) – Heading line has been reformatted •Schedule 15 Page 1 of 3 Opening text has been reformatted •Schedule 16 - Page 1 of 2 Part 1 top wording block last sentence should reference Schedule 16 Part III •Schedule 16 - Page 2 of 2 Part 1 Should include Text as the Unit for Governor Setting Information •Schedule 16 - Part 3 For easier reading should be resized and reformatted
General Conditions	<ul style="list-style-type: none"> •GC.16.2 and GC.A.1.11 References Black Start which should be System Restoration •GC.16.4 Test Plan was missing from the text. •Annex A Table (b) – several issue numbers and dates have been updated.

Grid Code Fast Track Criteria

Fast Track Criteria	<p>A proposed Grid Code Modification Proposal that, if implemented,</p> <ul style="list-style-type: none">(a) would meet the Self-Governance Criteria; and(b) is properly a housekeeping modification required as a result of some error or factual change, including but not limited to:<ul style="list-style-type: none">(i) updating names or addresses listed in the Grid Code;(ii) correcting any minor typographical errors;(iii) correcting formatting and consistency errors, such as paragraph numbering; or(iv) updating out of date references to other documents or paragraphs
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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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Timeline for GC0170 – Proposed Timeline – *Fast Track Self Governance*

Milestone	Date
Draft Fast Track Self-Governance Report presented to Panel	21 March 2024
Panel decision	21 March 2024
Appeals Window (15 working days)	26 March 2024 to 18 April 2024
Implementation Date	22 April 2024

GC0170 – the asks of Panel

- **AGREE** that this Modification should follow Fast Track Self-Governance Criteria (Panel decision, which must be unanimous)
- **NOTE** the proposed timeline and that this Modification will be implemented upon conclusion of the Appeals window (if no objections are received from industry)



Inflight Modification Updates

Milly Lewis, Code Administrator



Break



Connections Reform Code Change Strategy

Connection Reform – Details

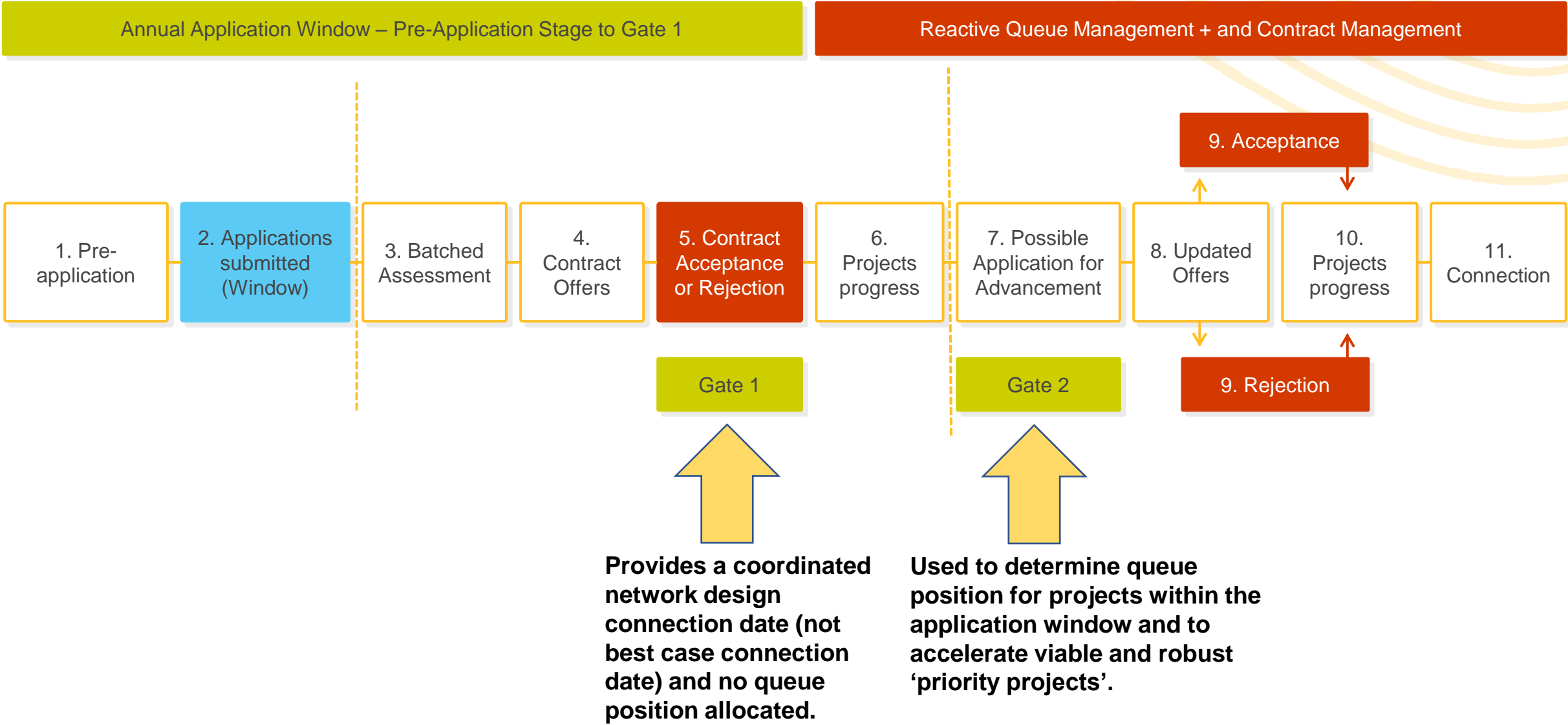
Final Recommendations Include:

- Applicable to all **new generation, interconnection** and **demand** connection applications
- Application **windows** and two formal **gates**
 - Gate 1: connection location and connection date
 - Gate 2: accelerate 'priority projects'
- **Letter of Authority** entry Requirement
- Reserve **capacity for DNOs** - Not to hold up Embedded Generation within the agreed ranges.

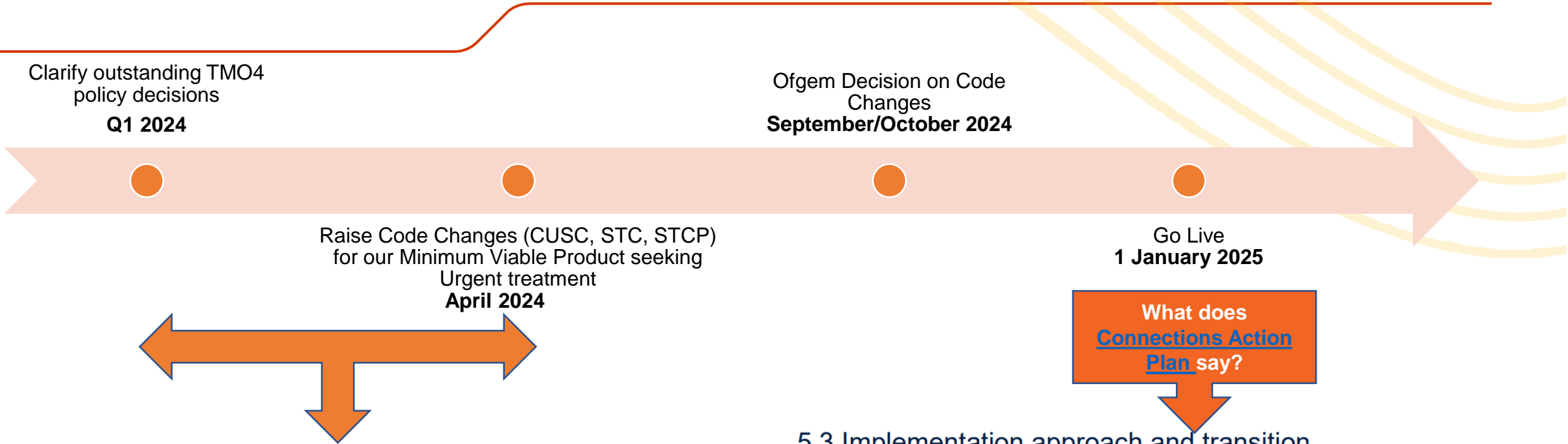
Customer and Consumer Benefits

- Greatest opportunity for **earlier connection dates**, on a **first ready first connected** basis;
- More efficient and **coordinated future planning** of the network
- Supports ability to **build network** more efficiently in **anticipation** of need
- Better **facilitates competition**, innovation and introduction of **non-build solutions**; and
- **Future-proofed** - aligned with other programmes

Reformed connections process overview



Overall Timeline – where do the Code changes fit in?



Deliverable	Timing
Develop Modifications	Ongoing. ESO “virtual” team in place.
Socialise with industry (number of Mods, defects, proposed solutions and timings)	TCMF 29 February 2024 (and further update 4 April 2024) Connections Process Advisory Group 7 March 2024 (already presented 25 January 2024)
Heads up to March 2024 Panels	GCRP 21 March 2024, CUSC 26 March 2024, STC 27 March 2024
Raise Modifications	From April 2024 (as seeking Urgency for some this could be anytime up to actual Panels)

5.3 Implementation approach and transition

Desired Outcome: Connections reforms delivered with a high degree of confidence in quality, pace, ambition and coordination of reform delivery, ensuring greater and faster impact of connection reform in reducing connection times as well as lower system and/or connection costs.

In selecting the most appropriate implementation approach for the Connections Action Plan, we were guided by a range of factors and principles. We want an implementation approach that ensures sufficient industry engagement and efficient and coordinated delivery of changes, taking into account the interests of all stakeholders, as well as wider strategic objectives related to achieving net zero goals and enabling reforms to be substantially delivered by 2025 to ensure energy security and investability across the network.

Proposed Groupings/Sequencing

Modification	Number of Mods Raised and Codes Impacted	To be raised April 2024?	Urgent?
Process and Policy (including introducing Distribution Forecasted Transmission Capacity (DFTC), Pre-Application changes (if needed) and obligations to have and consult on a Connections Network Design Methodology)	4 (1 of each of CUSC, STC, STCPs and DCUSA). <i>Only 2 raised in April 2024 (1 of each of CUSC and STC. STCP changes can follow later)</i> <i>Note that it may be prudent for STCPs to follow STC Urgency timetable although STCPs themselves do not receive Urgent status.</i>	Yes for CUSC and STC No for STCPs (they can follow later) No for DCUSA (consequential Modification that is more for transparency and completeness rather than absolutely needed – timing TBC but could even be after CUSC/STC/STCPs Process and Policy Modification approved)	Yes for CUSC and STC No for STCPs and DCUSA
User Commitment (to amend to align with the new process, as above)	3 (1 of each of CUSC, STC, STCPs)	No – after CUSC/STC/STCPs Process and Policy Modification approved	TBC (we don't think we can raise until Process and Policy Modification approved so "Urgency" depends if we have time)
Letter of Authority (LoA) Phase 2 (current thinking on scope is assessing the feasibility and suitability of applying the LoA to Offshore Transmission Connection Applications. Interconnectors and Modification Applications, a process for duplication checks, changes to red line boundary, land requirements where multiple landowners, validity of LOA e.g. up to M3 Milestone)	1 (for CUSC). No STC or STCP changes needed.	TBC – after LOA Phase 1 approved	TBC – if and after LOA Phase 1 approved. Considering if this will need to be raised as Urgent.



Proposed Groupings/Sequencing - Summary

8 Mods in total with only 2 (3 if LOA Phase 2 Mod needed) to be raised in April 2024

On Methodology, obligations to have and consult on to be included in Process and Policy Modifications but the content and any approvals of such Methodology to be covered outside Code Modification process.

Best case Workgroup structure is a cross code CUSC/STC Process and Policy one (with discussions of content of Connections Network Design Methodology and Distribution Forecasted Transmission Capacity outside Code Modification process).

We would need separate cross code Workgroups for User Commitment and Letter of Authority Phase 2.

Process and Policy – Draft Modification Scope

Defect

- Initial view is: “**The current codified connections process is not aligned with the ESO’s proposals for a reformed connections process**”

In Scope

- Introducing the concept of an annual application window and two formal gates, which are known as Gate 1 and Gate 2 (i.e. the primary process).
 - The frequency and duration of the application window will be 12 months.
- Clarifying what/who goes through the primary process and what/who goes through the secondary processes (e.g. contract novations).
 - New Directly Connected Generation, New Directly Connected Demand, New Interconnectors (and Offshore Hybrid Assets), Relevant Embedded Generation (i.e. between the agreed thresholds), **[Relevant Embedded Demand]** and any Significant Modification Applications in relation to such projects.
- Changing the offer and acceptance timescales to align with the primary process timescales (e.g. a move away from three months for licenced offers).
- Introducing the provision of a co-ordinated network design connection date (and no queue position allocation) at Gate 1.
- Introducing queue position allocation and the potential for (and means of) connection date advancement (via a new advancement application) at Gate 2.
- Setting out the definition of a Priority Project (i.e. projects which have met the Gate 2 criteria) and the general arrangements for Priority Projects.
 - The general arrangements being in relation to the right milestone(s) for Target Model Add-On (TMA) F3 (projects that are ready(ier) to connect) and the relationship between TMA F1 (Projects that have official designation by Government), TMA F2 (projects that demonstrate significant additional consumer, net zero and/or wider economic and societal benefits) and TMA F3.
- Setting out the circumstances in which a project can simultaneously pass Gate 1 and Gate 2.
- Introducing the concept of a Connections Network Design Methodology (i.e. to set out how co-ordinated network design will be undertaken for those applying to connect within an application window and for any connections related anticipatory investment) and the related obligations to publish, keep up-to-date, consult, etc.
- Introducing the concept of Distribution Forecasted Transmission Capacity (DFTC) to replace the Statement of Works and Confirmation of Project Progression processes for projects which can utilise DFTC i.e. to allow DNOs to request firm capacity on an anticipatory basis for such projects.
 - If required, clarifying how embedded generation projects which can utilise DFTC but also choose to have a Bilateral Embedded Generator Agreement (BEGA) can obtain their BEGA.
- [If possible, a fast-track dispute process in respect of ‘clock start’ and the achievement of the Gate 2 criteria]**
- [If required, the potential process deviation in respect of strategic demand applications]**
- [If required, the potential process deviation in respect of option to reserve capacity for The Crown Estate and/or Crown Estate Scotland]**
 - [This includes the ability for the ESO to reject offshore wind applications where such capacity has been reserved in anticipation of future leasing rounds]**

**To be confirmed whether or not the areas highlighted in red text are in scope*



Process and Policy – Draft Modification Scope

Out of Scope

- Any changes to any secondary processes (i.e. any project/request which does not need to go through the primary process).
- The process by which a priority project is designated under TMA F1 and TMA F2.
- The Queue Management approach introduced by CMP376 and the proposed capacity reallocation approach (i.e. Reactive Queue Management Plus as per TMA G).
- Amendments to the Letter of Authority process, including the introduction of duplications checks.
- Except where directly required due to in scope changes, any changes to the standard form connection contracts.
- Changes to Final Sums and/or User Commitment Methodology, and Network Charging Arrangements, including in relation to Application Fees.
- The Connections Network Design Methodology (which will be developed and sit outside of the codes).
- The approach that DNOs will take for to identify the volume of DFTC which will be requested within the primary process (i.e. the DFTC Methodology).
- Changes to the interactivity process (as residing within guidance and so changes will be enacted through updated to the guidance).
- [Amending the Week 24 process (and any associated processes) in respect of the inclusion of embedded demand within the primary process]
- [Introducing or amending any codified arrangements in relation to the Pre-Application Stage]

**To be confirmed whether or not the areas highlighted in red text are out of scope*

Other Notes

- Where appropriate, guidance will support the reformed process which is to be codified, with such guidance having a defined review and update process.
- The scope does not include any amendment to our proposed reformed process which could be triggered through the Connections Action Plan.
- Assumptions may need to be made about overarching licence condition changes.

Ask of Panel: Note that we are currently developing the Modification paperwork based on the proposed scope and do not currently propose any changes to Grid Code so please feed back if you disagree with this to paul.j.mullen@nationalgrideso.com or michael.oxenham1@nationalgrideso.com



Workgroup Report

**GC0159: Introducing Competitively Appointed
Transmission Owners**

Milly Lewis

Key points to note to the Panel

- The Workgroup Report was presented to Panel on the 14 December 2023. The Panel agreed that further work was necessary on the interactions with GC0156.
- The Workgroup convened on the 28 February 2024 and agreed with proposed changes to the legal text. The Workgroup confirmed their vote following this.

Solution and Workgroup Vote

Solution:

- The objective of this modification is to implement minimum change to the Grid Code to facilitate the introduction of CATOs. The approach taken is to extend existing relevant Onshore TO provisions as far as appropriate, reflecting Ofgem's expected licencing regime.

Summary of Workgroup Vote:

- The Workgroup concluded by majority that the GC0159 Original better facilitated the applicable Grid Code Objectives than the Baseline.

Terms of Reference

The Workgroup concluded that they have met the Terms of Reference and the references can be located below:

Workgroup Term of Reference	Location in Workgroup Report
a) Implementation and costs;	Proposer's solution
b) 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;	Legal Text Annex 6
c) 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;	Distribution list Annex 8
d) Consider EBR implications;	Interactions Section
e) Consider interactions and impacts on wider Grid Code modifications in particular GC0103, GC0117 and GC0156 modifications; and	Interactions Section (GC0156 considerations page 9 & 10 of Workgroup Report)
f) Consider the alignment with cross code impacts and their timelines.	Interactions Section
g) Ensure that the proposed Grid Code changes effectively implement the CATO regime in a proportionate manner, adopting minimum necessary change.	Legal text Annex 6

GC0159 – the asks of Panel

- **AGREE** that the Workgroup have met their Terms of Reference
- **AGREE** that this Modification can proceed to Code Administrator Consultation
- **NOTE** that this Modification does impact the Electricity Balancing Regulation (EBR) Article 18 terms and conditions held within the Grid Code
- **NOTE** the ongoing timeline

GC0159 Next Steps

Milestone	Date
Code Administrator Consultation (1 month)	26 March 2024 to 5pm on 26 April 2024
Draft Final Modification Report issued to Panel	22 May 2024
Draft Final Modification Report presented to Panel	30 May 2024
Final Modification Report issued to Panel to check votes recorded correctly (5 working days)	03 June 2024 to 07 June 2024
Submission of Final Modification Report to Ofgem	11 June 2024
Ofgem decision date	Expected Q3 2024
Implementation Date	10 WD after Authority decision



Workgroup Report

**GC0163: GB Grid Forming (GBGF) - Removal of Virtual
Impedance restriction**

Elana Byrne

Key points to note to the Panel

- GC0163 is a Self Governance modification being assessed by a Workgroup. It was initially proposed to go straight to Code Administrator Consultation however at the October Grid Code Review Panel, it was requested that a Workgroup be formed to consider whether there are any unintended consequences of removing the virtual impedance restriction which could affect system security.
- Following a Workgroup Consultation, comments were acknowledged by the Workgroup and the Workgroup's responses can be found within the Workgroup Report against the corresponding comments. In response to a consultation response, a small change was agreed by the Workgroup and incorporated within the legal text for additional clarification.

Solution and Workgroup Vote

Solution:

It is proposed to make minor changes to the European Connection Conditions (ECC) and the Glossary & Definitions within the Grid Code to require only an internal impedance rather than specifying that the impedance comprises of real physical values. N.B. Changes will also be reflected in the ESO [GB Grid Forming Compliance Guidance Note](#) for relevant developers and manufacturers.

Summary of Workgroup Vote:

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

Terms of Reference

The Workgroup concluded that they have met the Terms of Reference and the references can be located below:

Workgroup Term of Reference	Location in Workgroup Report
a) Implementation and costs;	'When will this change take place?' section
b) 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;	Legal text section and Annex 4 (Legal Text)
c) 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; and	Annex 6 (Workgroup Vote) gives detail of Workgroup Membership.
d) Consider EBR implications	'Interactions' section
e) Consider whether there are any unintended consequences of removing the virtual impedance restriction which could affect system security	'Workgroup Considerations' section
f) Consider whether removing the virtual impedance restriction would conflict with the specified Self Governance criteria.	'Workgroup Considerations' section

GC0163 – the asks of Panel

- **AGREE** that the Workgroup have met their Terms of Reference
- **AGREE** that this Modification can proceed to Code Administrator Consultation
- **NOTE** that this Modification does not impact the Electricity Balancing Regulation (EBR) Article 18 terms and conditions held within the Grid Code
- **NOTE** the ongoing timeline

GC0163 Next Steps

Milestone	Date
Code Administrator Consultation	02 April 2024 to 5pm on 02 May 2024
Draft Self Governance Modification Report issued to Panel	22 May 2024
Draft Self Governance Modification Report presented to Panel	30 May 2024
Final Self Governance Modification Report issued to Panel to check votes recorded correctly (5 working days)	03 June 2024 to 07 June 2024
Appeals Window (15 working days)	10 June 2024 to 28 June 2024
Implementation Date (5 working days after closure of Appeals Window)	05 July 2024

Grid Code - Prioritisation Stack



Mod Number	Previous Priority No:	Priority No.	Title
GC0139	2	1	Enhanced Planning Data Exchange to Facilitate Whole System Planning
GC0117	3	2	Improving transparency and consistency of access arrangements across GB by the creation of a pan-GB commonality of PGM requirements
GC0155	4	3	Clarification of Fault Ride Through Technical Requirements
GC0163	5	4	GB Grid Forming (GBGF) - Removal of Virtual Impedance restriction
GC0159	6	5	Introducing Competitively Appointed Transmission Owners
GC0166	7	6	Introducing new Balancing Programme Parameters for Limited Duration Assets
GC0164	8	7	Simplification of Operating Code No.2
GC0103	9	8	The introduction of harmonised Applicable Electrical Standards in GB to ensure compliance with the EU Connection Codes
GC0140	10	9	Grid Code Sandbox: enabling derogation from certain obligations to support small-scale trials of innovative propositions



Implementation Update

**GC0156: Facilitating the Implementation of the Electricity
System Restoration Standard**

Milly Lewis

Grid Code Development Forum – Previous and Next

06 March 2024

Presentation: Fax Machine Replacement – Update – Paul Bainbridge, NGESO

An update was provided in relation to the replacement of Fax Machines currently used for communication between the ESO Control Room and Users.

Presentation: Overview of the approved code modifications for the implementation of the Electricity System Restoration Standard (ESRS) – Folasade Adenola / Fyali Jibji-Bukar, NGESO

Following the approval of the code modifications in relation to the implementation of the Electricity System Restoration Standard, an overview of the approved modifications and the impacts to Users was shared.

Presentation: Proposed changes to the Grid Code in the treatment of Embedded Small Power Stations with a Bilateral Embedded Generation Agreement - Update (BEGA) – Tanmay Kadam, NGESO

Following the feedback from the presentation at the November 2023 GCDF, an update was shared detailing proposed changes to the Grid Code in respect of the compliance process for Embedded Small Power Stations with a Bilateral Embedded Generation Agreement (BEGA) prior to a submission of a Grid Code Modification Proposal.

03 April 2024 (Deadline for Agenda items - 27 March)

Agenda items TBC.



Standing Items

- Distribution Code Panel update (Alan Creighton)
- JESG Update (information only)
 - Next meeting – 09 April 2024



Updates on other industry codes

CUSC Overview – February

New Modifications:

CMP430 ‘Adjustments to TNUoS Charging from 2025 to support the Market Wide Half Hourly Settlement (MHHS) Programme’

The Panel unanimously recommended that CMP430 met Ofgem’s Urgency criteria (a) and therefore recommended urgent treatment. Panel’s recommendation was sent on 26 February 2024 seeking an Ofgem decision by 5pm on 29 February 2024. The Panel recommended that CMP430 proceed to a Workgroup. The Panel agreed the Terms of Reference for the Workgroup. CMP430 documentation can be found [here](#).

CMP431 ‘Adjustments to TNUoS Charging from 2025 to support the Market Wide Half Hourly Settlement (MHHS) Programme (Non-Charging)’

The Panel unanimously recommended that CMP431 met Ofgem’s Urgency criteria (a) and therefore recommended urgent treatment. Panel’s recommendation was sent on 26 February 2024 seeking an Ofgem decision by 5pm on 29 February 2024. The Panel recommended that CMP431 proceed to a Workgroup with CMP430 to be responsible for the evaluation of the separate CUSC Modification Proposals. The Panel agreed the Terms of Reference for the Workgroup. CMP431 documentation can be found [here](#)

Authority Decisions:

CMP344: Clarification of Transmission Licensee revenue recovery and the treatment of revenue adjustments in the Charging Methodology

The Authority sent back on 12 February 2024. Documentation can be found [here](#).

Workgroup Reports: none

CMP413: Rolling 10-year wider TNUoS generation tariffs

The Panel agreed that the Terms of Reference have been met and agreed for CMP413 to proceed to Code Administrator Consultation. The Code Administrator Consultation was published on 26 February 2024 and this will close on 18 March 2024. CMP413 documentation can be found [here](#).

CMP418: Refine the allocation of Dynamic Reactive Compensation Equipment (DRCE) costs at OFTO transfer

The Panel agreed that the Terms of Reference have been met and agreed for CMP418 to proceed to Code Administrator Consultation. The Code Administrator Consultation will be published on 29 February 2024 and this will close on 21 March 2024. CMP418 documentation can be found [here](#)

Draft Final Modification Reports:

CMP427: Update to the Transmission Connection Application Process for Onshore Applicants

The Panel concluded that in order to complete the Panel Recommendation Vote, the Proposer should update the legal text to align with the solution outlined in the Code Administrator Consultation document and gain agreement from the Workgroup ahead of a Second Code Administrator Consultation being issued to industry. Panel’s recommendation and request for an extended timeline was sent on 23 February 2024 which the Authority approved on 26 February 2024. CMP427 documentation can be found [here](#)



Any Other Business

Activities ahead of the next Panel Meeting

Grid Code Development Forum

03 April 2024

Modification Proposals to be submitted

10 April 2024

Papers Day

17 April 2024

Panel Meeting

25 April 2024
Faraday House

Close



Trisha McAuley

Independent Chair, Grid Code Review Panel