

# WELCOME





# Grid Code Review Panel

Thursday 25 January 2024

Online Meeting via Teams

# Approval of Panel Minutes

Approval of Panel Minutes from the Meeting held

14 December 2023



# Action Log

Action No.	Status	Action	Date raised	Owner	Due	Comments and Updates
440	Open	Update on the status of GC0139 and remaining work required to be given to GCRP following completion of analysis and tender.	28/09/2023	TP	25/01/2024	GC0139 Code Administrator Chair to give a verbal update at January 2024 GCRP.
442	Open	European legislation: provide update covering interactions between GB and EU law with regard to the Grid Code.	28/09/2023	JW	TBC	A response to be given to the Grid Code Review Panel in the new year- Louise Trodden to give an update at the January GCRP.
450	Open	Investigate possibility of Connections Reform changing technical requirements of connectees to the Grid.	23/11/2023	JWe	TBC	Terry Baldwin to give an update at the January GCRP.
451	Open	ESO to provide overview of HND to Grid Code Panel	23/11/2023	TB	25/01/2024	Terry Baldwin advises that it is best to give an update on the HND in February or March as in January as the design is going to change before then.
453	Open	Coordinate with relevant stakeholders to plan next steps for GC0159. Update January Panel on status of GC0159.	14/12/2023	CG		Update at January GCRP.



# Grid Code Panel EU Engagement

Jan 2024

Louise Trodden

# EU Retained Law

- [European Network Codes \(ENC\) | ESO \(nationalgrideso.com\)](https://nationalgrideso.com)

ESO website has links to the relevant codes and Statutory instruments of GB requirements post EU exit

The Third package is the overarching requirement with CEP, Connection, Markets and System operation codes detailing the requirements in these areas

Implementation of the areas which required attention has taken place over a number of years and the JESG steering group was set up to cover the development and implementation of these requirements (this meeting still takes place monthly to share any European related workstream information)

High level of retained law	
<b>Third Package</b>	<ul style="list-style-type: none"><li>• The Third Energy Package facilitates the development of a harmonised European internal energy market. It includes two directives and three regulations, which became law on 3 March 2011.</li></ul>
<b>Clean Energy Package (CEP)</b>	<ul style="list-style-type: none"><li>• The CEP is a suite of European legislation, which aims to decarbonise energy and facilitate better outcomes for consumers.</li><li>• It came into force during 2018/19 and covers the following areas: energy performance in buildings; renewable energy; energy efficiency; governance of the energy union; and electricity market design</li></ul>
<b>Connection Codes</b>	<ul style="list-style-type: none"><li>• Requirements for generators (RfG)</li><li>• Demand connection code (DCC)</li><li>• High Voltage Direct current (HVDC)</li></ul>
<b>Market Code</b>	<ul style="list-style-type: none"><li>• Balancing (EBR)</li></ul>
<b>System Operation Codes</b>	<ul style="list-style-type: none"><li>• System Operation Guideline (SOGL)</li><li>• Emergency and restoration (E&amp;R)</li></ul>

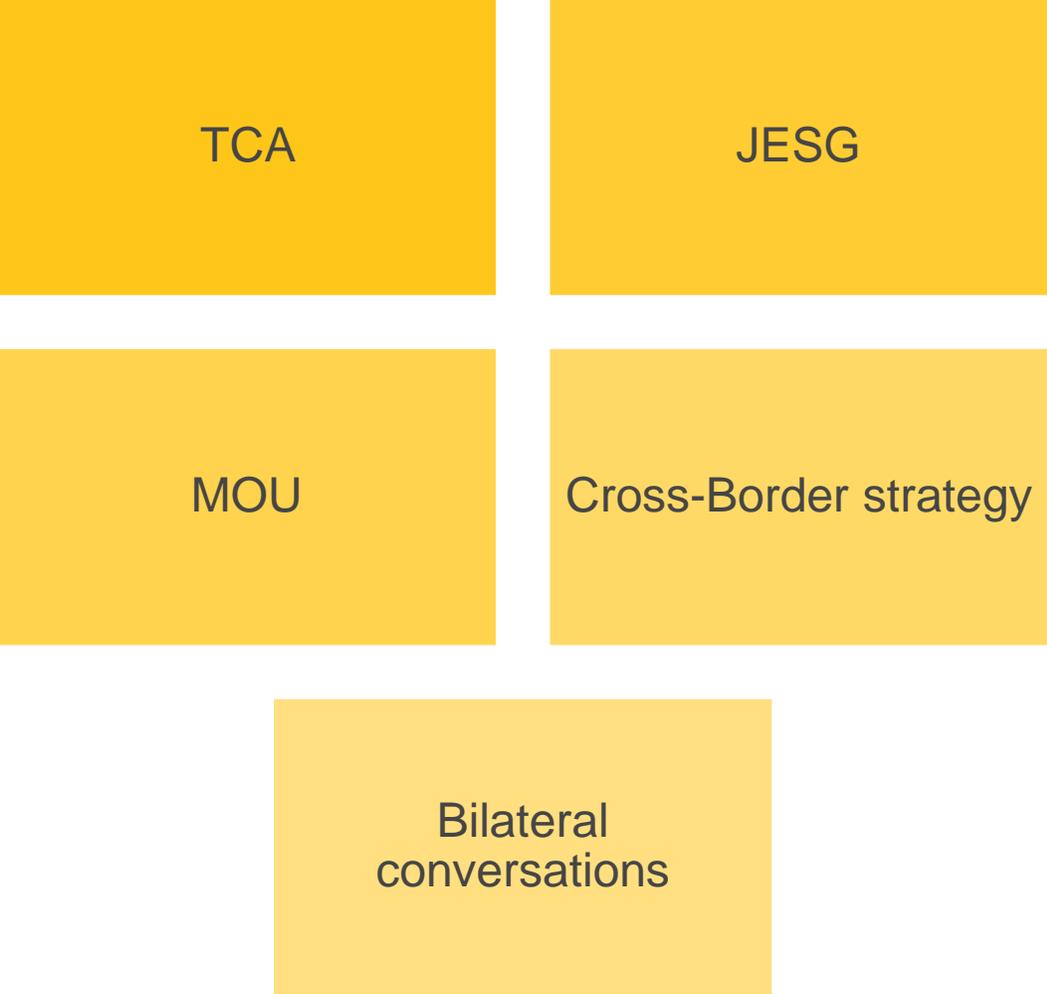
# Engagement with Europe

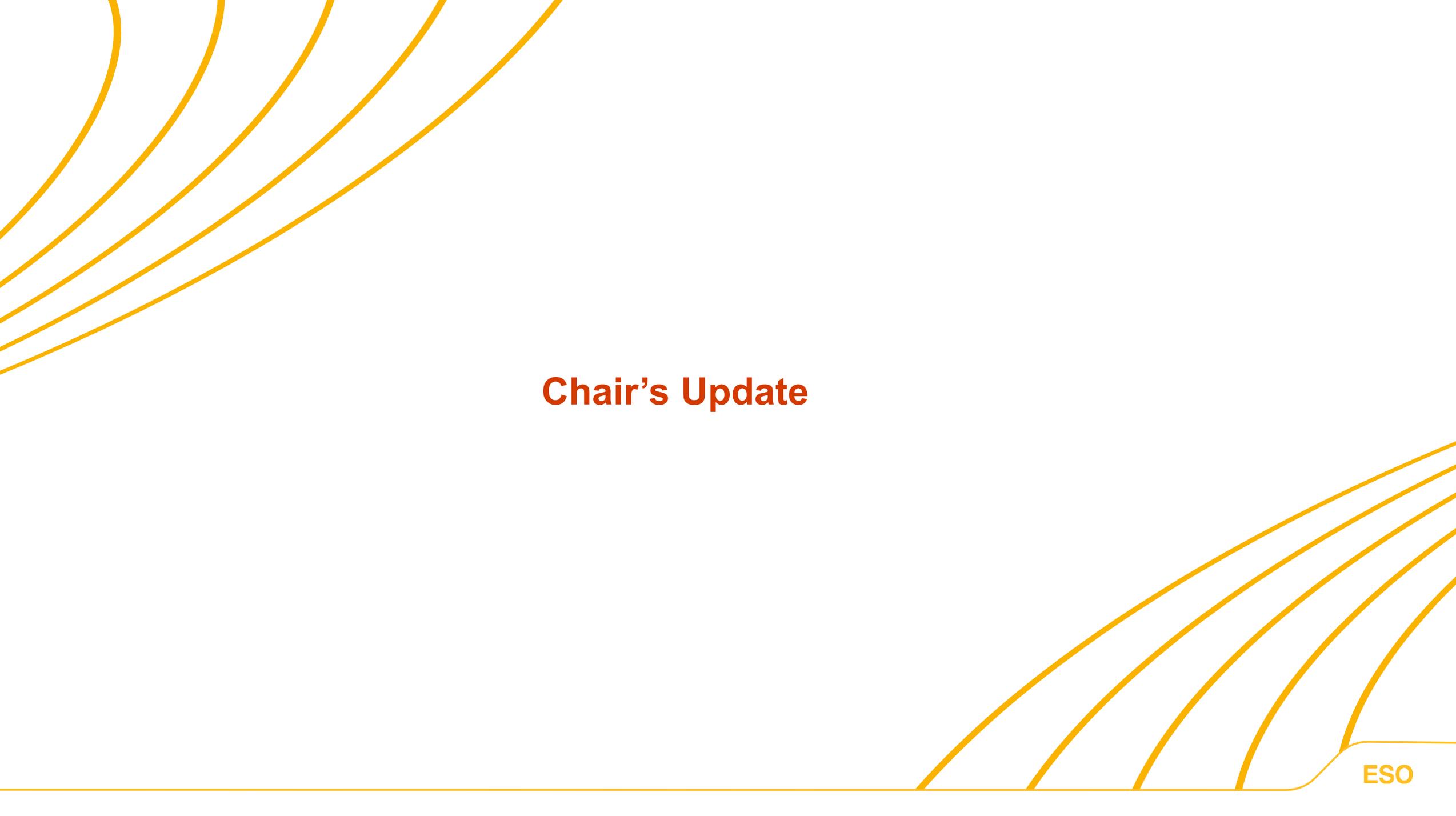
Complicated since GB Exit EU

Work in progress

Key as we still use interconnectors, and this will increase

Regular discussions with Ofgem and DESNZ





## Chair's Update

# Authority Decisions and Update (as at 05 December 2023)



## Decisions Pending

- ❑ [GC0156: Facilitating the Implementation of the Electricity System Restoration Standard](#)

## Decisions Received since last Panel meeting

### Received Final Modification Reports since last Panel Meeting

- ❑ [GC0154: Incorporation of interconnector ramping requirements into the Grid Code as per SOGL Article 119](#)

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

**Standard Governance**



# Critical Friend Feedback – GC0167

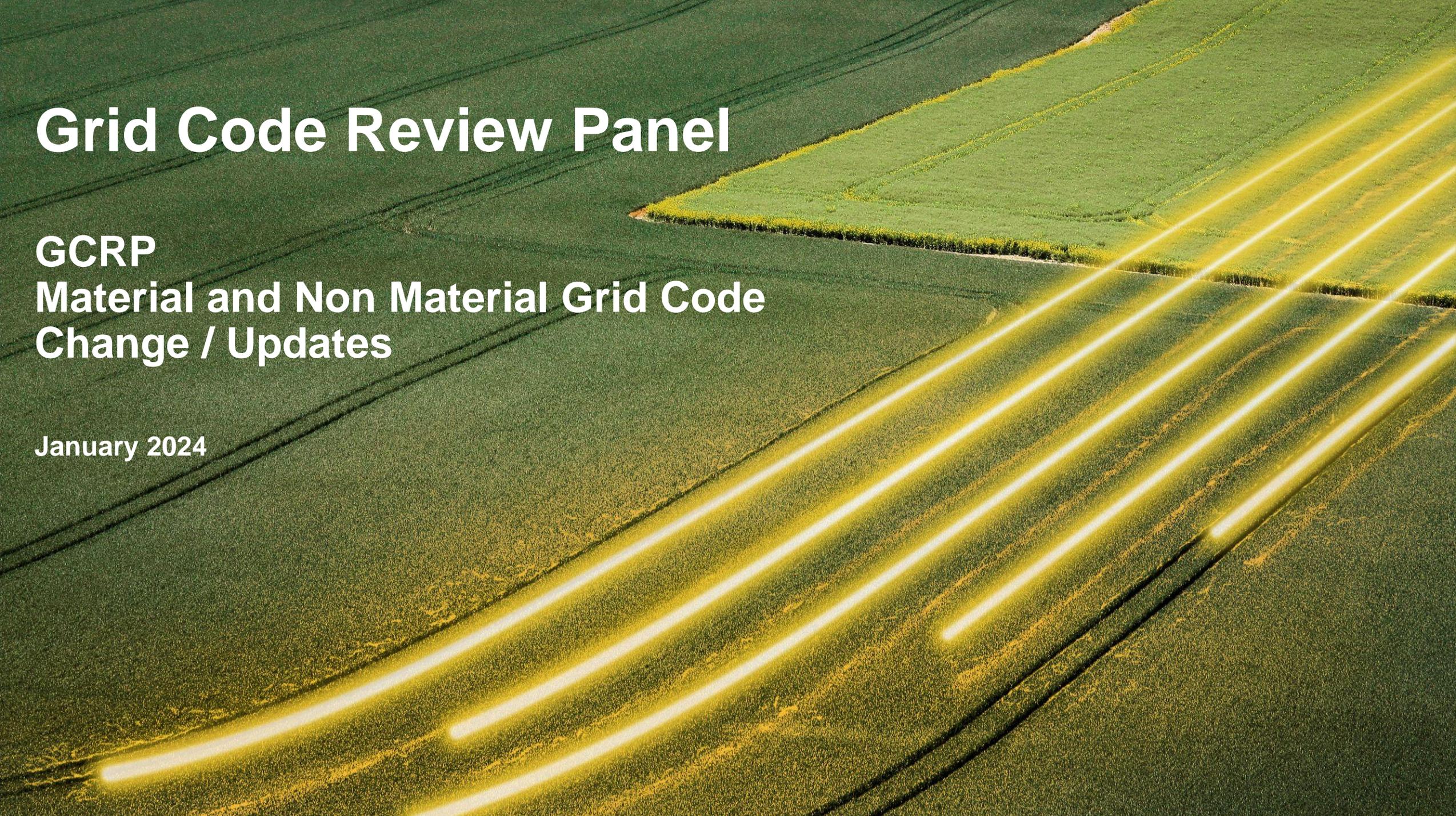
Code Administrator comments	Amendments made by the Proposer
<p>Advised on Governance route</p> <p>Rewording for clarity and simplification</p> <p>Provided timeline</p>	<p>Proposer accepted all amendments made by the Code Administrator</p>

# Timeline for GC0167 – Proposed Timeline - Workgroup

Milestone	Date	Milestone	Date
Modification presented to Panel	25 January 2024	Code Administrator Consultation (1 Month)	27 August 2024 to 27 September 2024
Workgroup Nominations (15 Working Days)	29 January 2024 to 16 February 2024	Draft Final Modification Report (DFMR) issued to Panel (5 working days)	16 October 2024
Workgroup 1 Workgroup 2 Workgroup 3 Workgroup 4  To discuss the proposal, analysis required and begin refining the solution.	07 March 2024 03 April 2024 01 May 2024 29 May 2024	Panel undertake DFMR recommendation vote	24 October 2024
Workgroup Consultation (15 working days)	03 June 2024 to 21 June 2024	Final Modification Report issued to Panel to check votes recorded correctly	25 October 2024 – 31 October 2024
Workgroup 5 Workgroup 6  To review the Workgroup Consultation responses and to finalise the solution	09 July 2024 30 July 2024	Final Modification Report issued to Ofgem	06 November 2024
Workgroup report issued to Panel (5 working days)	14 August 2024	Ofgem decision	TBC
Panel sign off that Workgroup Report has met its Terms of Reference	22 August 2024	Implementation Date	10 working days after decision

# GC0167 – 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 rolling green agricultural fields, likely corn, with several bright yellow light streaks or beams of light cutting across the landscape from the bottom right towards the top right. The text is overlaid on the left side of the image.

# Grid Code Review Panel

**GCRP**  
**Material and Non Material Grid Code**  
**Change / Updates**

January 2024

# Overview

- A review of the Grid Code has identified a range of items which require clarification / correction
- These include but are not limited to:-
  - Corrections arising from issues identified outside the scope of GC0136 (identified as being material but not necessarily substantial)
  - Alignment/clarification between Connection Conditions and European Connection Conditions and general corrections
  - House Keeping Changes and typographical errors

# Corrections arising from GC0136

- These issues are detailed in Annex 3 of the GC0136 of the Final Modification Report (duplicated as Annex 1 in the Grid Code Proposal Modification Form)
- In summary these include:-
  - Glossary and Definitions – TERRE Gate Closure / Caution Notice / Consistency of SI units /
  - BC2.13 – Interconnector Scheduled Transfer / Intraday Cross-Zonal Gate Closure Time – baseline / Glossary and Definitions issue
  - General Conditions – Re-word Paragraph GC.5.2 and GC5.4
  - General Conditions GC11.2 and GC15.1 – confirm if these clauses can be clarified / simplified
  - Consistency issues between Grid Code and G99
  - Change Grid Code references of SHETL to SHET
  - Compliance Processes – CP.A.3.2.1 – Change from open loop response to closed loop response\*  
OC9.6.4 – Requires more work in formulation and to ensure the action is clear\*
- \*Items are potentially a significant change and may be outside the scope of this mod.
- Some of these changes could be quite extensive so any workgroup would need to assess what could reasonably be achieved

# 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.
- ECP.A.6.8.1 is not well written and should be updated to improve clarity

# Housekeeping and Typographical Errors

- Incorrect diagram in Figure ECC.16.3.16(c) – Figure ECC.16.3.16(b) and (c) are the same and should use the diagrams approved in Grid Code modification GC0111.
- There are two paragraphs with the same reference – ECP.A.3.6.7
- References in ECP.A.6.8.1 which refer to ECP.6.3.2.5.2 or ECP.6.3.6.3 should be changed to ECC.6.3.2.5.2 or ECC.6.3.6.3.
- Other typographical issues identified - See Annex 2 of Grid Code Proposal form

# Feedback from January GCDF

- Generally happy with issue to proceed to Panel.
- Additional items highlighted over and above those highlighted include:-
  - Consider if Maximum Export Limit and other dynamic parameters should be formally defined as Grid Code definitions.
  - Ensure all tables in the Data Registration Code are in portrait rather than landscape.
  - Contents pages should be formatted to ensure they are consistent with page numbers.
  - Whether there is scope to change the definition of Seven Year Statement to Electricity Ten Year Statement.
- Some of the issues, especially those raised as a result of GC0136 may be very complex and may warrant a separate Grid Code modification. The Workgroup will need to establish (through the Terms of Reference) what can reasonably be achieved in the Workgroup

# Request of GCRP

- Advise if there are other house keeping issues that need to be addressed over and above those already raised
- Agree the issue should progress via the standard Governance Process with a Workgroup noting that some of the changes are of a material nature
- Some of the post GC0136 changes are quite materially significant and may require bespoke Grid Code changes. As part of this mod, the Workgroup will need to consider what post GC0136 changes can reasonably be accommodated.
- Advise of any other issues relevant to this proposal



# Inflight Modification Updates

Jonathan Whitaker, Code Administrator

# GC0155: Clarification of Fault Ride Through Technical Requirements Timeline Update

	Workgroup Report issued to Panel	DFMR issued to Panel	FMR issued to Ofgem
Previous timeline	14 February 2024	17 April 2024	07 May 2024
New timeline	20 November 2024	19 February 2025	12 March 2025

**Rationale:** The Proposer needs additional time to fully explore the details of their solution in order to have a meaningful Workgroup Consultation.

**Workgroups Remaining: 7**

**Ask of Panel: Agree revised timeline**

# GC0159: Introducing Competitively Appointed Transmission Owners

## Timeline Update

	Workgroup Report issued to Panel	DFMR issued to Panel	FMR issued to Ofgem
Previous timeline	6 December 2023	14 February 2024	26 March 2024
New timeline	14 February 2024	17 April 2024	07 May 2024

**Rationale:** In the December Grid Code Review Panel, the Panel requested that the Workgroup reconvene to consider interactions of the modification with GC0156.

**Workgroups Remaining: 2**

**Ask of Panel: Agree revised timeline**

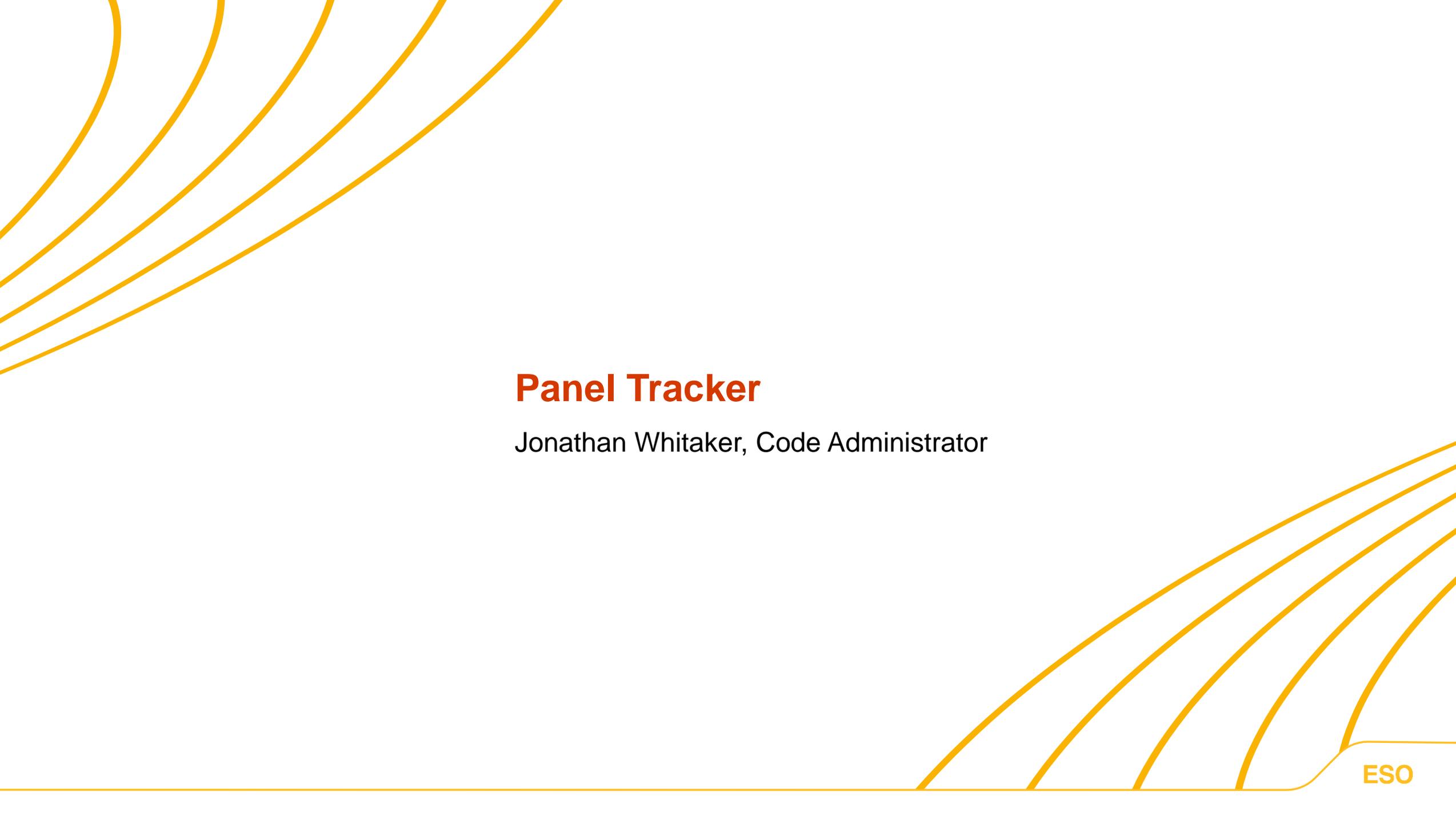
# GC0164: Simplification of Operating Code No.2 Timeline Update

	Workgroup Report issued to Panel	DFMR issued to Panel	FMR issued to Ofgem
Previous timeline	21 March 2024	22 May 2024	17 June 2024
New timeline	19 June 2024	14 August 2024	03 September 2024

**Rationale:** Workgroup members agreed that more time is needed to fully review all suggested updates to the legal text and the original timeline did not allow for this.

**Workgroups Remaining: 6**

**Ask of Panel: Agree revised timeline**



# Panel Tracker

Jonathan Whitaker, Code Administrator

# Prioritisation Stack

## 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



# Workgroup Report

**GC0117: Improving transparency and consistency of access arrangements across GB by the creation of a pan-GB commonality of Power Station requirements**

Milly Lewis (Chair)

# Solutions and Workgroup Vote

## Summary of solutions:

- The Proposer's solution for future Power Stations across GB is to define Large Power Stations as 10MW and above and Small Power Stations as less than 10MW. This proposal is non-retrospective and would be expected to apply from June 2027 when the appropriate ESO Balancing IT systems have been upgraded. The proposal would not apply to any Generator who has submitted a Connection Application to the DNO prior to the implementation of the modification.
- Under WAGCM1, the Power Station thresholds of Small (less than 50MW), Medium (50 – <100MW) and Large (100MW or greater) that currently apply in England and Wales would also be applied in Scotland. For new connections, from the date of implementation, the Large, Medium, and Small Power Station classification criteria would be the same across GB. A Generator who has already submitted a Connection Application to the DNO prior to the implementation would not be impacted by this solution.
- The legal text would be implemented in the Grid Code 10 Business Days after The Authority's decision, but the Original solution would not come into effect until June 2027.

## Summary of Workgroup Vote:

- The Workgroup concluded by majority that neither the Original or WAGCM1 better facilitated the Applicable Objectives than the Baseline.

# Terms of Reference

The Workgroup conclude that they have met their Terms of Reference and the references can be located below and on the next slide:

## Workgroup Term of Reference

- |   |   |
|---|---|
| a) Implementation and costs;  | 'Industry Impact Cost Assessment' and 'Implementation information and additional ESO IT Costs' within <b>Workgroup Considerations</b>                   |
| 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;  | <b>Annex 3 – Legal Text</b>   |
| 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 | 'Workgroup Consultation', 'Questionnaire Feedback' and 'Interaction with the smaller Generators and Aggregators' within <b>Workgroup Considerations</b> |
| d) Consider EBR implications  | <b>Interactions Section</b>   |
| e) The current transmission and generation characteristics in Scotland compared to those in England and Wales and whether the rationale for the thresholds being set at the current levels still applies given the current and projected generation composition and transmission infrastructure;        | <b>Workgroup Considerations</b> and <b>Annex 21 - SSEN Concerns email</b>   |
| f) Cross code impacts (BSC, CUSC and DCode) and impact on EBR;  | 'Interactions' within <b>Workgroup Considerations</b>   |

# Terms of Reference

## Workgroup Term of Reference

- |   |   |
|---|---|
| g) Consider any emerging thinking from the Open Network project;  | 'ENA Open Network Project Update' and 'Connections Reform' within <b>Workgroup Considerations</b>   |
| h) Any interaction with generator licensing thresholds or requirements;   | 'Registered Capacity' within <b>Workgroup Considerations</b>  |
| i) The impacts for stakeholders including NGESO, iDNOs, TOs, DNOs and generators;   | <b>Workgroup Considerations</b> and <b>Annex 13</b> – Threshold Matrix and <b>Annex 19</b> - ESO CBA results  |
| j) Implications for new connectees in relation to data exchange, planning, market engagement and any other areas of change;                                     | <b>Workgroup Considerations</b> , <b>Legal Text</b> and <b>Annex 20</b> - ESO Industry Impact Cost Assessment   |
| k) The implications associated with implementing any changes retrospectively so that they apply to existing connectees rather than just for new connectees; and | 'Retrospectivity discussion' within <b>Workgroup Considerations</b> and <b>Annex 14</b> - Retrospective considerations  |
| l) The implementation options together with the associated costs and benefits.  | 'Industry Analysis of GC0117 impacts' within <b>Workgroup Considerations</b> and <b>Annex 11</b> – NGESO estimated delivery timeframes and costs for proposed solutions |

# GC0117 – 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

# GC0117 Next Steps

Milestone	Date
Code Administrator Consultation	30 January 2024 to 5pm on 01 March 2024
Draft Final Modification Report issued to Panel	13 March 2024
Draft Final Modification Report presented to Panel	21 March 2024
Final Modification Report issued to Panel to check votes recorded correctly (5 working days)	22 March 2024 to 28 March 2024
Submission of Final Modification Report to Ofgem	02 April 2024
Ofgem decision date	TBC
Implementation Date	10 Business Days following Authority Decision, and for Original, 01 June 2027 for IT Systems

# Grid Code Development Forum – Previous and Next

**10 January 2024**

**Presentation: Creation of an Interconnector Framework – Update – Ruby Pelling & Alice Beddow, NGESO**

Following the presentation at the October 2023 GCDF, an update was provided in relation to the next steps for the creation of an Interconnector Framework.

**Non-material Grid Code clarification Housekeeping amendments – Antony Johnson, NGESO**

A presentation was shared in relation to a number of non-material Grid Code Housekeeping changes (including ensuring consistency between the Connection Conditions and European Connection Conditions), in preparation for a Grid Code Modification that will be raised at the January 2024 Grid Code Panel.

**Presentation: Request for EMT Models for Existing Generators – Update – Sami Abdelrahman & Jayaraman Ramachandran, NGESO**

An update was shared by the ESO following the presentation at the September 2023 GCDF in relation to Generators providing EMT Models to the ESO, covering the responses from the questions raised by the forum, and next steps

**7 February 2024 (Deadline for Agenda items - 31 January)**

Agenda items TBC.

## Standing Items

- Distribution Code Panel update (Graeme Vincent)
- JESG Update (information only)
  - Meeting on 09 January 2024
  - Next meeting – 13 February 2024



## Updates on other industry codes

# CUSC Overview - December

## New Modifications:

### CMP426 'TNUoS charges for transmission circuits identified for the HND as onshore transmission'

The Panel unanimously agreed that CMP426 should follow the Standard governance route and proceed to a Workgroup. The Panel agreed the Terms of Reference for the Workgroup. CMP426 documentation can be found [here](#)

### CMP427 'Update to the Transmission Connection Application Process for Onshore Applicants'

This modification proposes that a Letter of Authority (LoA) should be required for new Onshore Transmission Connection Applications. The Panel unanimously recommended that CMP427 met Ofgem's Urgency criteria and therefore recommended urgent treatment. Panel's recommendation was sent on 15 December 2023 seeking an Ofgem decision by 5pm on 21 December 2023. The Panel recommended that CMP427 proceed to a Workgroup. The Panel agreed the Terms of Reference for the Workgroup. CMP427 documentation can be found [here](#)

## Authority Decisions:

### CMP425 'Billing Demand Transmission Residual By Site'

On 13 December 2023, the Authority directed that the Original solution should be made with effect from 01 April 2023

## Workgroup Reports: none

## Draft Final Modification Reports:

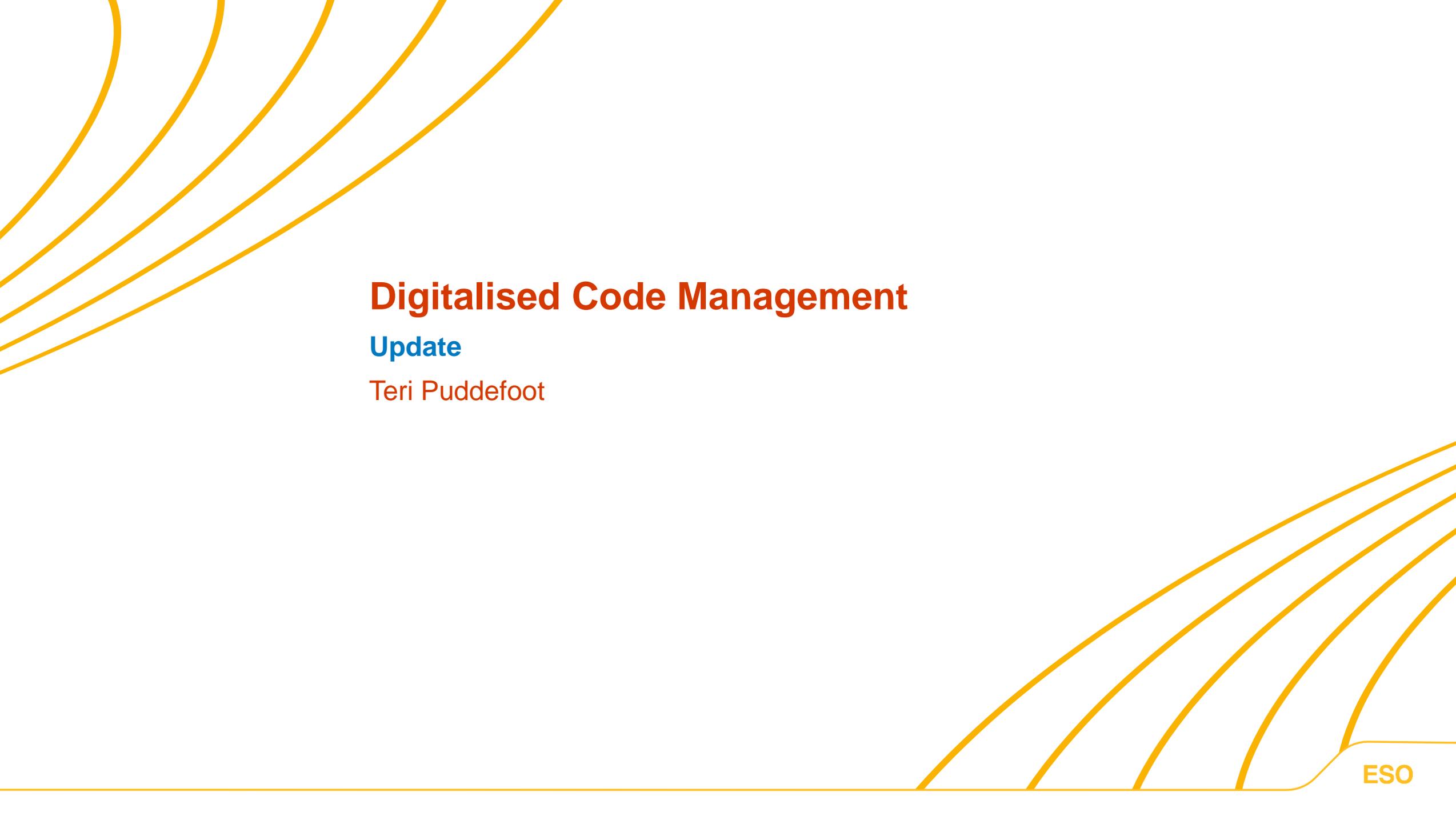
### CMP396 'Re-introduction Of BSUoS on Interconnector Lead Parties'

The Panel has recommended unanimously that the Proposer's solution did not better facilitate the CUSC Applicable Objectives. The Final Modification Report will be sent to Ofgem on 05 January 2024. CMP396 documentation can be found [here](#)

### CMP411: Introduction of Anticipatory Investment (AI) within the Section 14 charging methodologies

The Panel has recommended unanimously that the Proposer's solution better facilitated the CUSC Applicable Objectives. The Final Modification Report will be sent to Ofgem on 05 January 2024. CMP411 documentation can be found [here](#).

**Any Other Business**

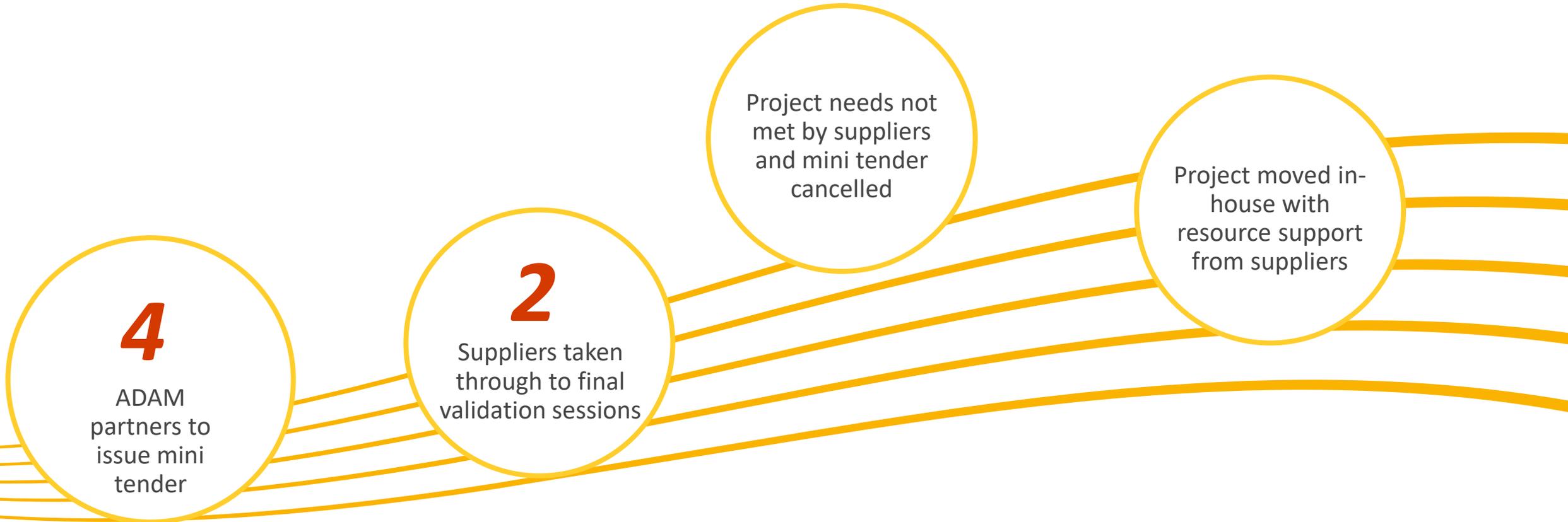


# Digitalised Code Management

Update

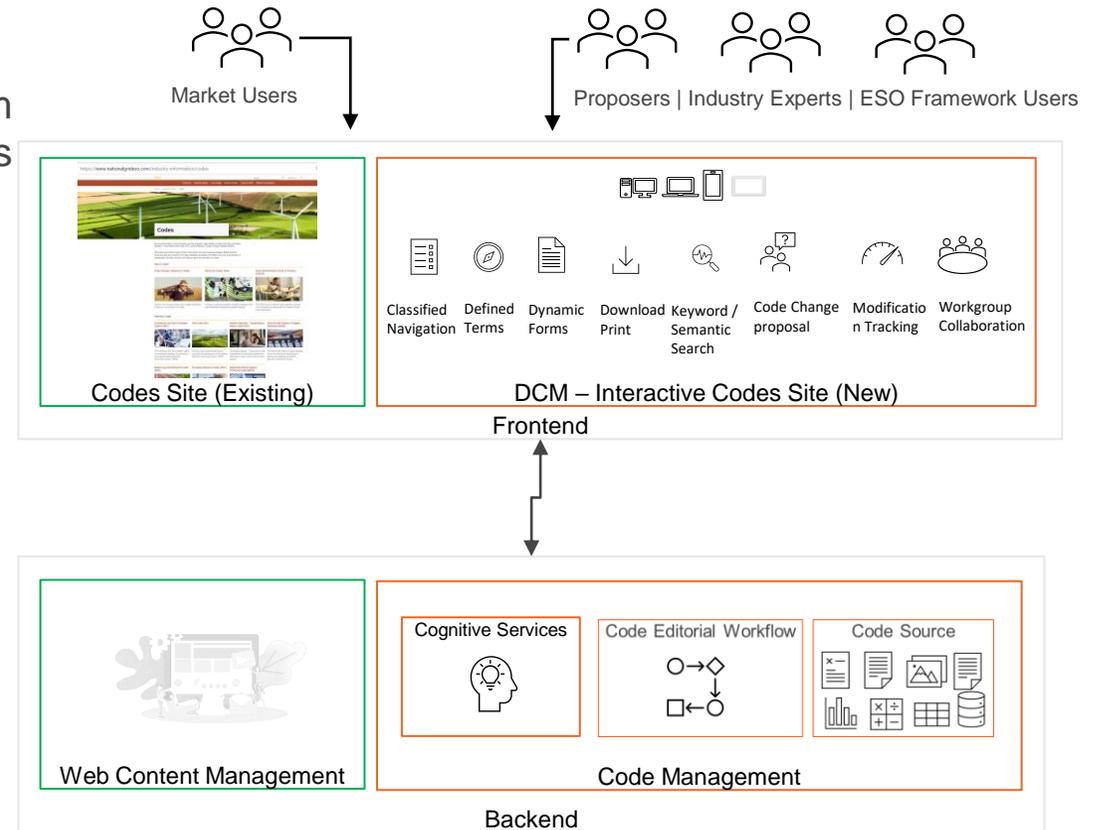
Teri Puddefoot

# Process Update



# Digitalised Code Management – End Target Digital Solution

- Delivering best customer/user experience underpinning digital technologies
- Extending the existing codes website hosted on nationalgrideso.com to deliver interactive digital applications on web and mobile channels and multi-platform touch points
- New interactive web application that will deliver all the new features and existing content using Single Sign On and seamless look and feel
- Using Design Thinking concept to define the user experience that drives the technology selection for best user adoption
- Using de-coupled digital architecture to keep the user experience and technology changes independent of each other
- Technology design includes cloud native, omni channel and highly scalable solution
- Considering use of cognitive and controlled open AI concepts to take advantage of artificial intelligence
- Product development approach and agile ways of working suggested for the delivery. The rollout new application as a minimum viable product (MVP). The MVP to be scaled in phases



# **MVP Functional Scope (Day 1) at high level**

- 1. Design(UX) end to end customer/user experience for DCM that includes frontend and backend process for all personas**
- 2. Building a new DCM Frontend that includes:**
  - Digitalisation (Interactive Website) of Code Grid Code.
  - Digitalisation to include definitions and easy to access defined terms interactively
  - Digitalisation of code to tidy up the formatting issues currently exists in Grid Code pdf
  - Any code changes that are published as per the current process to be reflected/updated to the digitalised new Frontend in real-time

# Enduring Solution – Scope at high level

## 1. Continued Development if the digitalised code

- Hyperlinks to reference material and other codes to be available
- Digitalisation to include the forms as electronic/digital forms that can be downloaded

## 2. Cognitive Search

- Advanced Search functionality

## 3. DCM backend workflows - this includes all the related processes to continue as-is:

- Code change proposal process
- Code administration change process including all the existing tools to be used e.g. Word document, SharePoint, Outlook, Teams etc.
- Publishing Grid Code changes

## Next Steps

- Workshops held with the project team to align on scope and MVP vision
- Iterative design sprints and testing
- Confirm enduring solution – What and when
- Continued work on Workflow and advanced search
- MVP 31<sup>st</sup> March 2024

## Activities ahead of the next Panel Meeting

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**Modification Proposals to be submitted**

07 February 2024

**Papers Day**

14 February 2024

**Panel Meeting**

22 February 2024  
Faraday House

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**Close**



**Trisha McAuley**

**Independent Chair, Grid Code Review Panel**