



STC Panel

Wednesday 24 April 2024

Online Meeting via Teams

WELCOME



Approval of Panel Minutes

Approval of Panel Minutes from the Meeting held

27 March 2024



Action Log



Authority Decisions and Update



Decisions Pending

Modification	Final Modification Report Received	Expected Decision Date
CM079 - Consideration of STC/STCP changes in relation to CMP330/374	11 December 2023	08 May 2024
CM085 - To clarify OFTO reactive power requirements at low windfarm outputs	11 March 2024	07 June 2024
CM086 - Introducing competitively Appointed Transmission Owners & Transmission Service Providers	11 March 2024	30 September 2024
CM087 - Introducing Connections Process to facilitate Competitively Appointed Transmission Owners	11 March 2024	30 September 2024

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

CM095 - Implementing Connections Reform
CM096 - Application of Gate 2 Criteria to existing
contracted background

Paul Mullen, ESO



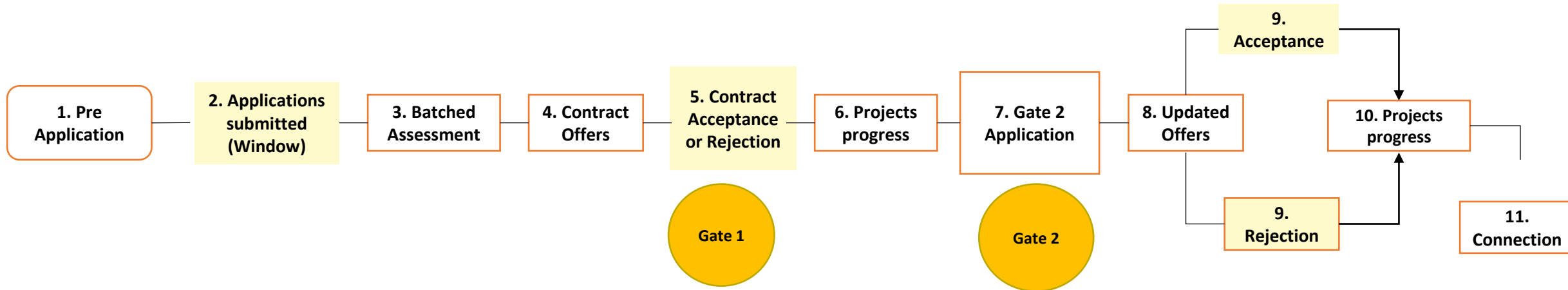
Critical Friend Feedback – CM095 and CM096

Code Administrator comments	Amendments made by the Proposer
Timeline and scope of Workgroup meetings commentary Formatting and spelling amendments	Proposer accepted all amendments made by the Code Administrator

Target Model Option (TMO) 4 – Dec 23

Annual Application Window – Pre-Application Stage to Gate 1

Reactive Queue Management + and Contract Management



Final Recommendations – December 2023

Whether queue position would be allocated at Gate 1 or Gate 2

Appropriate milestone for Gate 2

Application window frequency and duration

What has changed?

- Total connections queue could reach 800GW by the end of 2024
- Industry interventions successful, but outpaced by growth
- Considered options for further and faster reform

Recommendation
Extend reformed process to
contracted projects



TMO4+ (Gate 2 to Whole Queue Approach)

TMO4+ Key Points

First ready, first connected approach

Queue positions, connection dates and points = Gate 2

Indicative connection dates and points = Gate 1

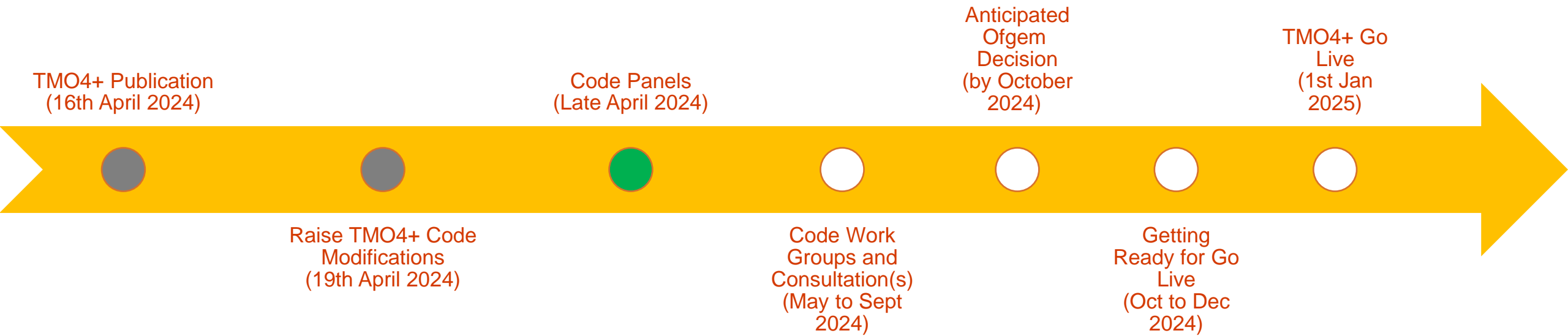
No user commitment or queue management milestones for contracted projects Pre-Gate 2

Existing queue given time to demonstrate Gate 2

Analysis predicts:

- Could potentially more than halve the size of the queue, enabling earlier connection dates for projects that have met Gate 2.
- Earlier connection dates (projects that met Gate 2)

Implementation



We will continue to provide updates at industry forums and via governance groups. Industry will have the opportunity to participate in the Code Modification Workgroups and/or respond to consultations

Code Modifications



Code Modification Structure

Implementing Connections Reform (CUSC and STC) (Urgent)

Prospective application of Application Windows and Gates i.e. Gate 1 and Gate 2

Gate 1 Indicative Connection Dates and Connection Points

No User Commitment or Queue Management Milestones at Gate 1

Gate 2 Criteria and Changes to Queue Management Milestones

Letter of Authority Phase 2 e.g. Offshore, Duplication Checks, etc

Distribution Forecasted Transmission Capacity

Gate 2 to Whole Queue (CUSC and STC) (Urgent)

Retrospective Application of Gate 2 to Whole Queue – Potential Advanced Connection Dates

Pre-Gate 2 Indicative Connection Dates and Connection Points

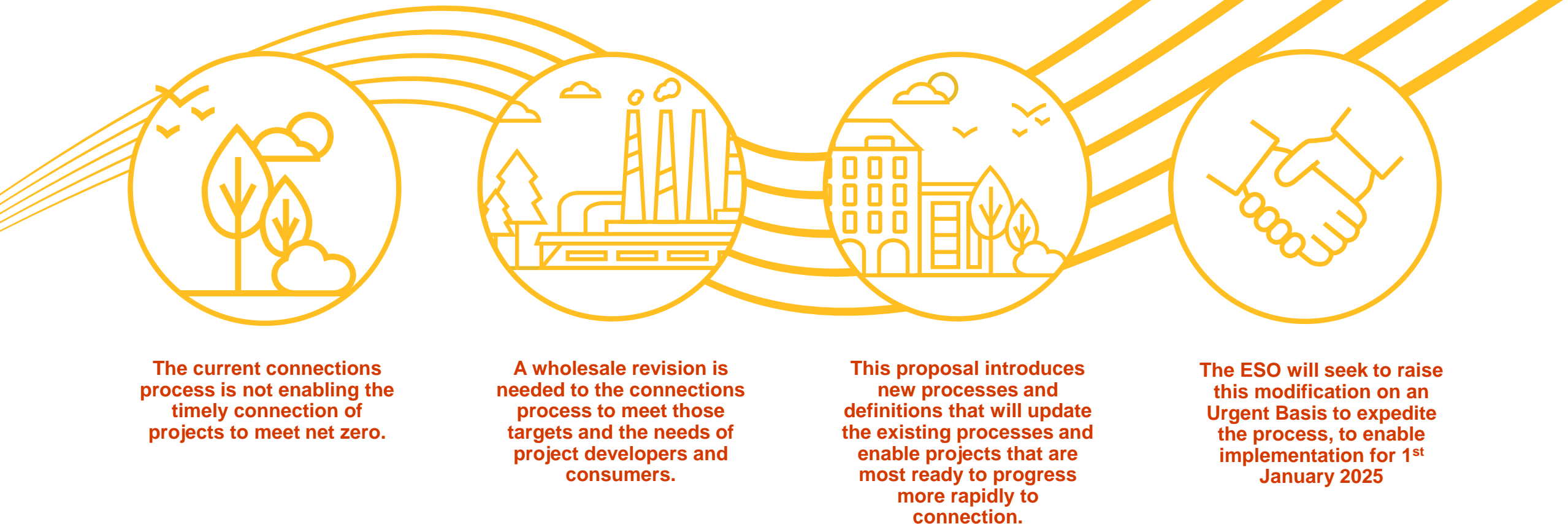
Pre-Gate 2 Removal of User Commitment and Queue Management Milestones

Transitional Arrangements

There will also be STCP changes (in parallel) and potentially DCUSA changes (at some point) as a result of the CUSC and STC changes.

CM095 - Implementing Connections Reform

Context



What does the modification propose (1)?

- The current connections process is not enabling the timely connection of projects to meet net zero. A wholesale revision is needed to the connections process to meet those targets and the needs of project developers and consumers. This proposal introduces new processes and definitions that will update the existing processes and enable projects that are most ready to connect more efficiently.
- 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.
- These reforms are to be delivered by January 2025, as expressed by Ofgem and DESNZ in the [Connections Action Plan](#) (November 2023).

What does the modification propose (2)?

- The issue we are now seeking to resolve with this code modification as part of Phase 3 (detailed process design and implementation) of our GB Connections Reform project is to update the current and relevant codified aspects of the connection process (assuming the necessary corresponding licence changes are undertaken by Ofgem in due course), to align with our recommendations for a reformed connections process.

MVP Scope/Solution (1)

Element	Description
Introducing an annual application window and two formal gates, which are known as Gate 1 and Gate 2 (i.e. the primary process).	New connections process based on an annual application window and two formal gates - we need to agree the most efficient process for the ESO to submit Gate 1 applications to the Transmission Owners.
Clarifying which projects go through the primary process.	New Directly Connected Generation, New Directly Connected Demand, New Interconnectors (and Offshore Hybrid Assets), New Relevant Embedded Small Power Stations (via the DNO), New Relevant Embedded Medium Power Stations (via the DNO), New Embedded Large Power Stations and any significant Modification Applications in relation to such projects
Clarifying any deviations from primary process e.g. for certain technologies.	Giving certainty to industry as to where process differs for certain Customer groups
Setting out the process and criteria in relation to Application Windows and Gate 1, including introducing an offshore Letter of Authority equivalent as an application window entry requirement for offshore projects	Amend process and timescales to reflect (at a high-level) the proposed reformed Connections process and timescales including the TO to ESO contractual arrangements
Setting out the criteria for demonstrating Gate 2 has been achieved and setting out the obligations imposed once Gate 2 has been achieved.	Gate 2 criteria will be agreed as part of the associated CUSC Modification and we welcome Transmission Owners on the solutions that are developed in the joint CUSC/STC Workgroup

MVP Scope/Solution (2)

Element	Description
Updating LoA process	CUSC will set out what are allowable amendments to red line boundaries once Gate 2 has been achieved; and the introduction of Duplication Checks on Gate 2 projects – no STC changes envisaged as process will be managed by the ESO with the developer.
Setting out the general arrangements in relation to Gate 2	Ensuring clarity of how and when Gate 2 milestones are met
Changing the offer and acceptance timescales to align with the primary process timescales (e.g. a move away from three months for making licenced offers)	Moving away from 3 month window to align with primary process
Introducing the concept of a Connections Network Design Methodology (the content and any approvals of this to be covered outside Code Modification process)	The final recommendation for a reformed connections process includes a move away from an incremental and ad-hoc approach to assessing applications and network requirements, to a batched window-based approach to facilitate a more co-ordinated approach to network design for connections
Introducing the concept of a Distribution Forecasted Transmission Capacity (DFTC) submission process for Distribution Network Operator's (DNOs) to forecast capacity on an anticipatory basis for Relevant Embedded Small Power Stations or Relevant Embedded Medium Power Stations in the Application Window.	We intend to create a DFTC process so that DNOs can forecast capacity within application windows on an anticipatory basis. DNO's will do this within an application window by submitting a DFTC forecast, and at Gate 1, the DNOs will receive back indicative connection dates and locations.

MVP Scope/Solution (3)

Element	Description
Set out the process for how DNOs notify the ESO of Relevant Embedded Small Power Stations or Relevant Embedded Medium Power Stations which meet Gate 2 criteria.	The submission of projects that meet Gate 2 criteria will be issued to the ESO by the DNO via a batched submission. This process will need to be defined.

Proposer’s Justification vs Ofgem’s Urgency Criteria

The Proposer recommends that this modification should be treated as an Urgent Modification proposal and be assessed by a Workgroup.

Ofgem’s Urgency Criteria	Proposer’s Justification
a) A significant commercial impact on parties, consumers or other stakeholder(s).	<p>We consider that Urgent treatment of the “Application of Gate 2 Criteria to existing contracted background” Modification is also required in parallel in order to have combined significant impact from the go live date of 1 January 2025.</p> <p>Since publication of the Connections Action Plan in November 2023, the transmission and distribution connection queue has continued to grow relentlessly and, at the current rate of growth, the total connections queue is likely to exceed 800GW by the end of 2024. Without intervention, we expect this trend to continue with a forecast average increase of ~20GW for transmission being added every month beyond end 2024, which could lead to a 1000GW+ queue by the time necessary changes are in place if an urgent timeline is not followed.</p> <p>This modification is intended to ensure that viable, ready to progress projects can receive earlier connection dates, and more quickly remove speculative connection applications from the queue. This should address the current issue that ready to progress projects are held up behind stalled, slow to progress or speculative applications. The gated process, proposed by this change, supports this by prioritising readier and/or more viable projects as it avoids allocating capacity to projects that aren’t ready to progress. (Please see the Proposal Form for full details)</p>
b) A significant impact on the safety and security of the electricity and/or gas systems.	n/a
c) A party to be in breach of any relevant legal requirements	n/a

Timeline for ICR – Proposed Urgent Timeline - *Workgroup*

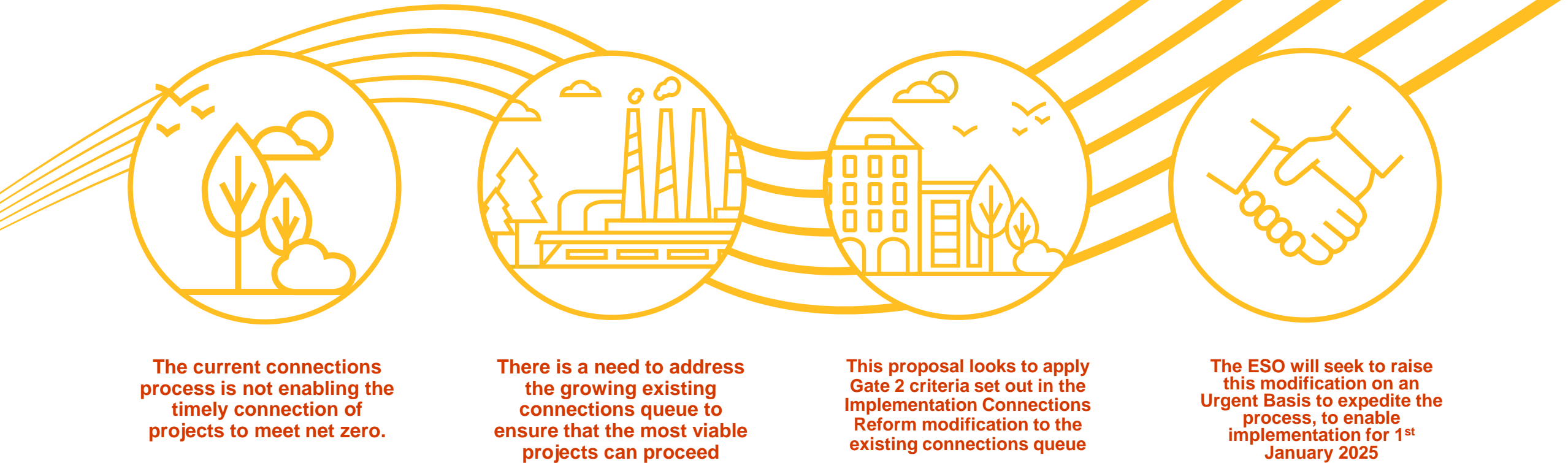
Milestone	Date	Milestone	Date
Modification presented to Panel	24 April 2024	Code Administrator Consultation (9 Business Days)	19 August 2024 to 02 September 2024
Workgroup Nominations (4 Business Days)	26 April 2024 to 02 May 2024	Draft Final Modification Report (DFMR) issued to Panel (3 Business Days)	09 September 2024
Ofgem grant Urgency	01 May 2024(5pm)	Panel undertake DFMR recommendation vote (Special Panel)	13 September 2024 (by 2pm)
Assuming Ofgem have granted Urgency Workgroup meetings 1 - 10	07 May 2024 14 May 2024 16 May 2024 22 May 2024 28 May 2024 05 June 2024 11 June 2024 13 June 2024 18 June 2024 20 June 2024	Final Modification Report issued to Panel to check votes recorded correctly	13 September 2024 (by 4pm)
Workgroup Consultation (8 Business Days)	25 June 2024 – 05 July 2024	Final Modification Report issued to Ofgem	13 September 2024 (by 5pm)
Workgroup meeting 11 - 15	16 July 2024 18 July 2024 24 July 2024 30 July 2024 06 August 2024	Ofgem decision (11 Business Days)	30 September 2024
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Special Panel sign off that Workgroup Report has met its Terms of Reference	16 August 2024		

Outline of Workgroup(s) Meeting Topics

WG meeting 1	<ul style="list-style-type: none">Set the scene, ToR, timeline, ways of working, context -why connections reform, what are the issues and solutions, what is and isn't scope, cross code impacts, who is impacted and how?
WG meeting 2	<ul style="list-style-type: none">Clarifying which projects go through the primary process.Clarifying any deviations from primary process e.g. for certain technologies.
WG meeting 3 and WG meeting 4	<ul style="list-style-type: none">Introducing an annual application window and two formal gates, which are known as Gate 1 and Gate 2 (i.e. the primary process).Setting out the process and criteria in relation to Application Windows and Gate 1, including introducing an offshore Letter of Authority as an application window entry requirement for offshore projectsChanging 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 concept of a Distribution Forecasted Transmission Capacity (DFTC) submission process for Distribution Network Operator's (DNOs) to forecast capacity on an anticipatory basis for Relevant Embedded Small Power Stations or Relevant Embedded Medium Power Stations in the Application Window.Changing ESO's connection offer timescales to align with the primary process timescales (i.e. a move away from three months for making licenced offers).Introducing the concept of a Connections Network Design Methodology (the content and any approvals of this to be covered outside the Code Modification process).
WG meetings 5 to 8	<ul style="list-style-type: none">Setting out the criteria for demonstrating Gate 2 has been achieved and setting out the obligations imposed once Gate 2 has been achieved.<ul style="list-style-type: none">Incorporate necessary amendments of M1 and M3 Queue Management Milestones in relation to projects which have met the Gate 2 criteria.For Letter of Authority:<ul style="list-style-type: none">Setting out what are allowable amendments to red line boundaries once Gate 2 has been achieved; andThe introduction of Duplication Checks on Gate 2 projects.Setting out the general arrangements in relation to Gate 2Changing the offer and acceptance timescales to align with the primary process timescales (e.g. a move away from three months for licenced offers).Set out the process for how DNOs notify the ESO of Relevant Embedded Small Power Stations or Relevant Embedded Medium Power Stations which meet Gate 2 criteria.
WG meeting 9 and WG meeting 10	<ul style="list-style-type: none">Implementation approachIdentify which STCPs will change (STC only)Identify which sections of legal text will change (Separate CUSC and STC)Finalise WG Consultation (Separate CUSC and STC)
WG meeting 11	<ul style="list-style-type: none">Assess WG Consultation responses, discuss new pointsDiscuss potential alternatives and agree who develops these
WG meeting 12 and WG meeting 13	<ul style="list-style-type: none">Finalise WG Alternatives (CUSC 1st then reflect in STC)Legal Text (Separate CUSC and STC)
WG meeting 14	<ul style="list-style-type: none">Finalise Legal Text (Separate CUSC and STC)WG Alternative Vote (Separate CUSC and STC)This is where we are re: Alternatives (Separate CUSC and STC)
WG meeting 15	<ul style="list-style-type: none">Workgroup Report (Separate CUSC and STC)Workgroup Vote (Separate CUSC and STC)

CM096 - Application of Gate 2 Criteria to existing contracted background

Context



What does the modification propose (1)?

- The size and rate of growth of the connections queue means that significant action is required as soon as possible to better manage the current queue. Not taking action to address the current queue will mean that new applications under our proposed Connections Reform model will initially be at the back of what could be ~800GW queue, with initial connection dates into the 2040s. The proposal seeks to address this with the application of Gate 2 criteria to the existing connections queue.
- Desired Outcome: To ensure that viable, ready to progress projects can receive earlier connection dates.

What does the modification propose (2)?

- The modification is seeking to apply the Gate 2 process and criteria to relevant parties with contracts providing for connection and use of system which are not connected or haven't reached their Completion Date at the Go-Live Date.
- The ESO is recommending that aspects of the reformed connections process specifically Gate 2 and queue position allocation at Gate 2, need to be extended to the contracted background in order to deliver meaningful impact.

Scope/Solution

Element	Description
Extending the Gate 2 concept to apply to existing connection contracts	This would be from the planned Go-Live Date of 1 January 2025
Changes to the contractual arrangements for those existing contracted parties that have not met the Gate 2 criteria by the Go-Live Date of 1 January 2025	For example, disapplying User Commitment and Queue Management Milestones from projects which have not yet met the Gate 2 criteria, and also removing queue position, confirmed connection date and connection site
The transitional arrangements in relation to changes to the contractual arrangements	Agree Transmission Owner/ESO contractual arrangements for those existing contracted parties who have not met Gate 2

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b) A significant impact on the safety and security of the electricity and/or gas systems.	n/a
c) A party to be in breach of any relevant legal requirements	n/a

Timeline for CM096 – Proposed Urgent Timeline - *Workgroup*

Milestone	Date	Milestone	Date
Modification presented to Panel	24 April 2024	Code Administrator Consultation (9 Business Days)	19 August 2024 to 02 September 2024
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WG meeting 2 and WG meeting 3	<ul style="list-style-type: none">• Extending the Gate 2 concept to apply to existing connection contracts (from planned for Go-Live Date of 1 January 2025).• Changes to the contractual arrangements for those existing contracted parties that have not met the Gate 2 criteria by the Go-Live Date of 1 January 2025.• Implementation approach.
WG meeting 4 and WG meeting 5	<ul style="list-style-type: none">• Identify which sections of legal text will change (Separate CUSC and STC)• Finalise WG Consultation (Separate CUSC and STC)
WG meeting 6	<ul style="list-style-type: none">• Assess WG Consultation responses, discuss new points• Discuss potential alternatives and agree who develops these
WG meeting 7 and WG meeting 8	<ul style="list-style-type: none">• Finalise WG Alternatives (CUSC 1st then reflect in STC)• Legal Text (Separate CUSC and STC)
WG meeting 9	<ul style="list-style-type: none">• Finalise Legal Text (Separate CUSC and STC)• WG Alternative Vote (Separate CUSC and STC)• This is where we are re: Alternatives (Separate CUSC and STC)
WG meeting 10	<ul style="list-style-type: none">• Workgroup Report (Separate CUSC and STC)• Workgroup Vote (Separate CUSC and STC)

CM095 - the asks of Panel

- **AGREE** that this Modification has a clear defect and scope
- **AGREE** that this Modification should proceed to Workgroup
- **VOTE** whether or not to recommend Urgency
- **AGREE** timetable for Urgency
- **AGREE** Workgroup Terms of Reference
- **NOTE** next steps:
 - Under STC Section 7.2.6.2, we will now consult the Authority as to whether this Modification is an Urgent STC Modification Proposal
 - Letter to be sent to Ofgem 25 April 2024
 - Ofgem approval of Urgent treatment sought by 5pm on 01 May 2024
 - 1st Workgroup to be held 07 May 2024

CM096 - the asks of Panel

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Updates on other industry codes

21 March 2024 Grid Code Review Panel [Panel Papers and Headline Report](#)

22 March 2024 CUSC Panel [Panel Papers and Headline Report](#)

09 April 2024 SQSS Special Panel [Panel Papers and Headline Report](#)



Any Other Business



EMT Model Requirements for Transmission Owners – A Heads Up ahead of proposing an STC Modification

Brief Context and Proposed Solution

As Great Britain's (GB) power system moves towards a net zero carbon operation; the number of Inverter-Based Resources (IBR) is expected to increase, with the amount of synchronous generation in the grid to decline which will significantly change the characteristics of the GB network. These changes give rise to the potential control interactions between the devices across the network leading to risks of oscillations and inverter stability.

The ESO requires Root Mean Square (RMS) and Electromagnetic Transient (EMT) models from relevant Transmission Owners (TOs) so that it can analyse and understand how these interactions affect the network under different system conditions.

There is currently no requirements in the System Owner Transmission Owner Code (STC) for TOs to submit them, as well as enabling the ESO to share both EMT and RMS models to Users. This restricts the ability for the ESO to perform system studies, modelling and post fault analysis

The proposed solution is to mandate the collection of the EMT and RMS models from TOs and provide for a possibility to share these models with Users, to relevant enable studies. These models will feed into a wider GB Model enabling investigations, post fault studies and planning studies. This will help to enable safe and reliable operation of the system and enhance the security of GB electricity supply

A modification to the STC will be proposed at the next available opportunity to provide the ESO with the ability to request these models

Ad hoc discussions have been held with TO representatives to provide their input towards refining the defect and to propose solutions ahead of proposing a modification.

Activities ahead of the next Panel Meeting

Grid Code Development Forum

09 May 2024

Modification Proposal Deadline for May Panel

14 May 2024

Papers Day

21 May 2024

Panel Meeting

29 May 2024
Microsoft Teams

Close



Deborah Spencer
Chair STC Panel