



## **STC Panel**

Wednesday 26 April 2023

Online Meeting via Teams

# WELCOME



# Minutes

## Approval of Panel Minutes from the Meeting held

29 March 2023



# Review of Actions within Action Log



# Authority Decisions and Update



## Decisions Received since last Panel meeting

- ❑ **CM085 - To clarify OFTO reactive power requirements at <20% output** – Decision 31 March 2023 sending back **CM085** for further work

## Decisions Pending

- ❑ **CM078 - Connections Triggering Distribution Impact Assessment** - Expected decision date of this and related CUSC Modification (CMP328) was 14 February 2023, decision on **CMP328** received 14 February 2023 and was sent back by Ofgem for further work/clarification, no decision received on **CM078**.
- ❑ **CM080 – Transmission Impact Assessment process** - Expected decision date of this and related CUSC Modification (CMP298) is 26 April 2023
- ❑ **CM088 – Fault Ride Through Definition** – Final Modification Report sent to Ofgem 12 April 2023. Expected decision date TBC



# **New STC/STCP Modifications**

**PM0129 - “Compliance Processes and Modelling amendments following 9 August 2019 Power Disruption” - Update**

**David Halford – National Grid ESO**



# PM0129 Proposal – Model production and sharing of Models following Grid Code Modification – GC0141

David Halford

# Overview of GC0141 Modification

The GC0141 modification was raised by NGENSO in March 2020 to address the concerns raised in Action 3 of the Ofgem report and action 2 of the BEIS report in the 9<sup>th</sup> August 2019 Power Disruption which intends to improve modelling, clarify Fault Ride Through (FRT) compliance requirements and improve the compliance process for complex connections.

The Modification was approved by the Authority on the 12<sup>th</sup> December 2022 and implemented on the 5<sup>th</sup> January 2023, with the following proposed topics and approved decision

Topics	Approved Decision
<i>Independent Engineer</i>	Not required
<i>Compliance Repeat Plan</i>	A user to submit a mandatory compliance statement and self-certification of compliance, confirming Grid Code compliance in full every 5 Years.
<i>RMS &amp; EMT Models</i>	ESO amending the Grid Code Planning Code to specify the type of modelling required (Root Mean Square (RMS) or Electromagnetic Transient (EMT))
<i>Sharing for SSTI/SSCI</i>	ESO to allow it to share relevant modelling information submitted by a User to another User, and that the User receiving the information can only use it to complete the analysis required by ECC.6.3.17.1 and EEC.6.3.17.2 (SSTI and SSCI studies)
<i>Torsional Data</i>	Generating Units with a Completion Date before 1 April 2015, are required to provide the data in accordance with good industry practice and without undue delay when requested by the ESO. Generating Units with a Completion Date after 1 <sup>st</sup> April 2015 is a mediator requirement.
<i>FRT Definitions &amp; Retrospective Requirements</i>	Amend the definition so that Users are required to remain connected and stable for up to 30 minutes following an applicable fault or disturbance
<i>Enhanced FRT Studies</i>	Power Park Modules (PPMs) and HVDC systems must repeat the required simulation studies for foreseeable running arrangements (to be agreed between the ESO and the User)

STCP Modification  
Required

# STCP Proposal

- As a follow-on to the Grid Code Modification, it has been identified that a change will be required to STC Procedure 19-5 for the production and type of models required, and the sharing of models for sub-synchronous torsional interaction (SSTI) and sub-synchronous control interaction (SSCI) studies, in order to harmonise the with the Grid Code.
- The change is to ensure consistency between the Grid Code and STC when the Offshore Transmission System is originally bound by the Grid Code as an OTSUA, but then migrates to an OFTO where STCP19-5 which covers the Offshore Transmission System Compliance Process and Testing applies.
- **The additional requirements apply to new connections and existing connections upgrading their control systems for projects after the 1 September 2022.**
- The proposed legal text was shared with the OFTO Panel Representatives on the 28<sup>th</sup> February for review/comment.
- **The recommendation is that the changes to the STC Procedure 19-5 are approved by the Panel in order to align with the corresponding Grid Code requirements with the implementation of the GC0141 modification.**

# STCP Governance

If a change is developed which has the potential to materially amend an existing STCP the proposer is obligated to seek Panel's views on materiality before proceeding.

When considering the proposed changes to the STCPs, the 1<sup>st</sup> ask on voting members is whether you agree that the change is material.

- If not, then approved/rejected as has been done in the past;
- If material, then the proposer of the change would need to seek Ofgem's written approval to proceed, and to clarify who should approve the change.

Ofgem can then decide either:

- It is acceptable for the Panel to approve/reject the STCP changes (as has been done in the past; or
- They will make the decision themselves.

# PM0129 – the asks of Panel

- **AGREE** that this STCP change should be implemented.
- **AGREE** that this STCP change has material impacts/doesn't have material impacts.
- **NOTE** that Implementation Date will be 12 May 2023 if Panel agree to implement this change and Panel identify no material impacts



# Draft STC/STCP Modifications

None

# In flight Modification Updates / Potential New Modifications

*CM085 - “To Clarify OFTO reactive power requirements at <20% output” – Agree next steps following send-back*

*CM089 - “Implementation of the Electricity System Restoration Standard” - Approve further Terms of Reference?*

*GC0148 – Emergency and Restoration Code – Phase 11 (Update)*

# Authority Send Back

*CM085 - "To Clarify OFTO reactive power requirements at <20% output" – Agree next steps following send-back*

Paul Mullen

# CM085 Authority Send-Back

On 31 March 2023, Ofgem [sent back](#) the CM085 Final Modification Report for further work and directed STC Panel to revise and resubmit the CM085 Final Modification Report

## Reasons for send back

Whereas the FMR recognises concerns raised by (Offshore Transmission Owners) OFTOs regarding the regular utilisation of their reactive power equipment, it fails to address these concerns in sufficient detail for the Authority to understand the impacts on OFTOs.

Additionally, there are further concerns that were raised by Code Administrator Consultation respondents.

We therefore expect the revised FMR to fully explore, perhaps through a workgroup, the impact on OFTOs and address the Code Administrator Consultation respondents' comments some of which are below:

1. Why existing processes cannot be used to access the reactive capability at windfarm outputs below 20%. For consideration are:
  - a. **STC Section C Clause 3.3.2** that allows the National Grid Electricity System Operator (NGESO) to propose modifications to the minimum Offshore Transmission Owner's Services Capability Specification
  - b. **STC Section C Clause 4.14** that requires TOs to respond to NGESO requests for provision of temporary Transmission Services in excess of their Normal Capability Limits. The clause also allows for the Transmission Owner to notify NGESO of any conditions that apply to the use of such temporary Transmission Services at technical limits above their Normal Capability Limits.
  - c. **STCP 11.4** through which Enhanced Operational Capability Limits can be accessed
2. The process through which each OFTO system's capabilities would be calculated and confirm that each OFTOs reactive power compensation equipment would have been tested to this level as part of the commissioning process.
3. The cost benefits to the consumer because of the proposed modification, in particular:
  - a. The amount of reactive power capability that would be unlocked by the proposals that can be relied upon by NGESO in discharging their operational obligations and relevant TOs in discharging their obligations under the SQSS.
  - b. The cost that NGESO would expect to incur to procure the reactive power that could otherwise be unlocked through this modification.
  - c. The additional operation and maintenance costs that would be incurred by the OFTO in providing this service and any consequential impact on an OFTOs tender revenue stream.

# CM085 Authority Send-Back – Governance Rules

7.2.5.15 If the Authority determines that the STC Modification Report is such that the Authority cannot properly form an opinion on the STC Modification Proposal and any Alternative STC Modification(s), it may issue a direction to the STC Modification Panel:

- (a) specifying the additional steps (including drafting or amending existing drafting associated with the STC Modification Proposal and any Alternative STC Modification(s)), revision (including revision to the timetable), analysis or information that it requires in order to form such an opinion; and
- (b) requiring the STC Modification Report to be revised and to be re-submitted

and in the event of the Authority making such a direction STCP 25-2 shall apply.

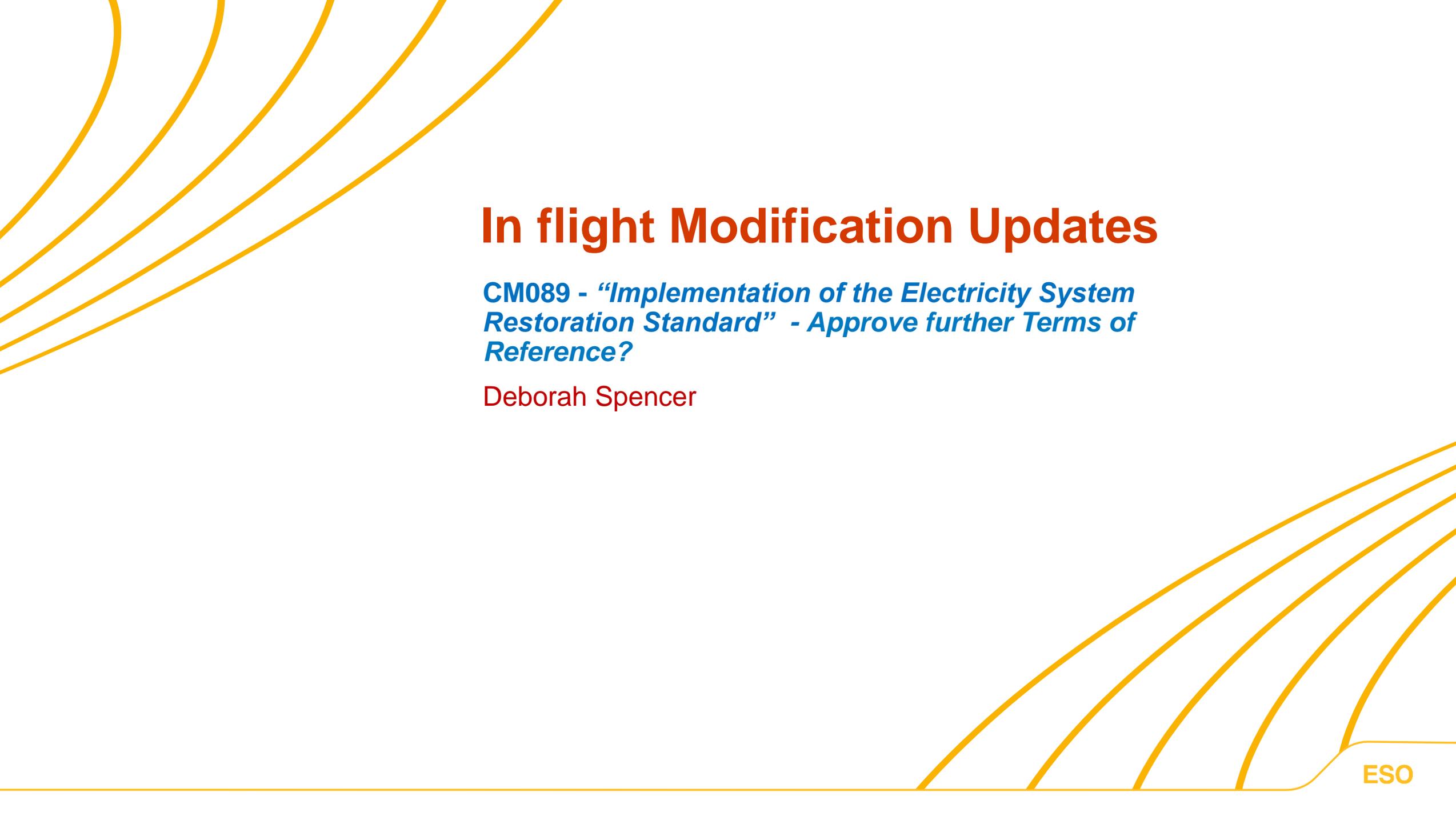
Panel to agree next steps following send-back on 31 March 2023:

**NOTE** that Ofgem are asking the Final Modification Report to be updated

**AGREE** whether or not this needs to be assessed by a Workgroup

**AGREE** Workgroup's Terms of Reference (if Panel determine a Workgroup is needed)

**AGREE** whether or not (following the assessment by the Workgroup) a Code Administrator Consultation is needed to be run before it is re-presented to Panel for Recommendation Vote



# In flight Modification Updates

**CM089 - *“Implementation of the Electricity System Restoration Standard” - Approve further Terms of Reference?***

Deborah Spencer

# Request to change CM089 Terms of Reference

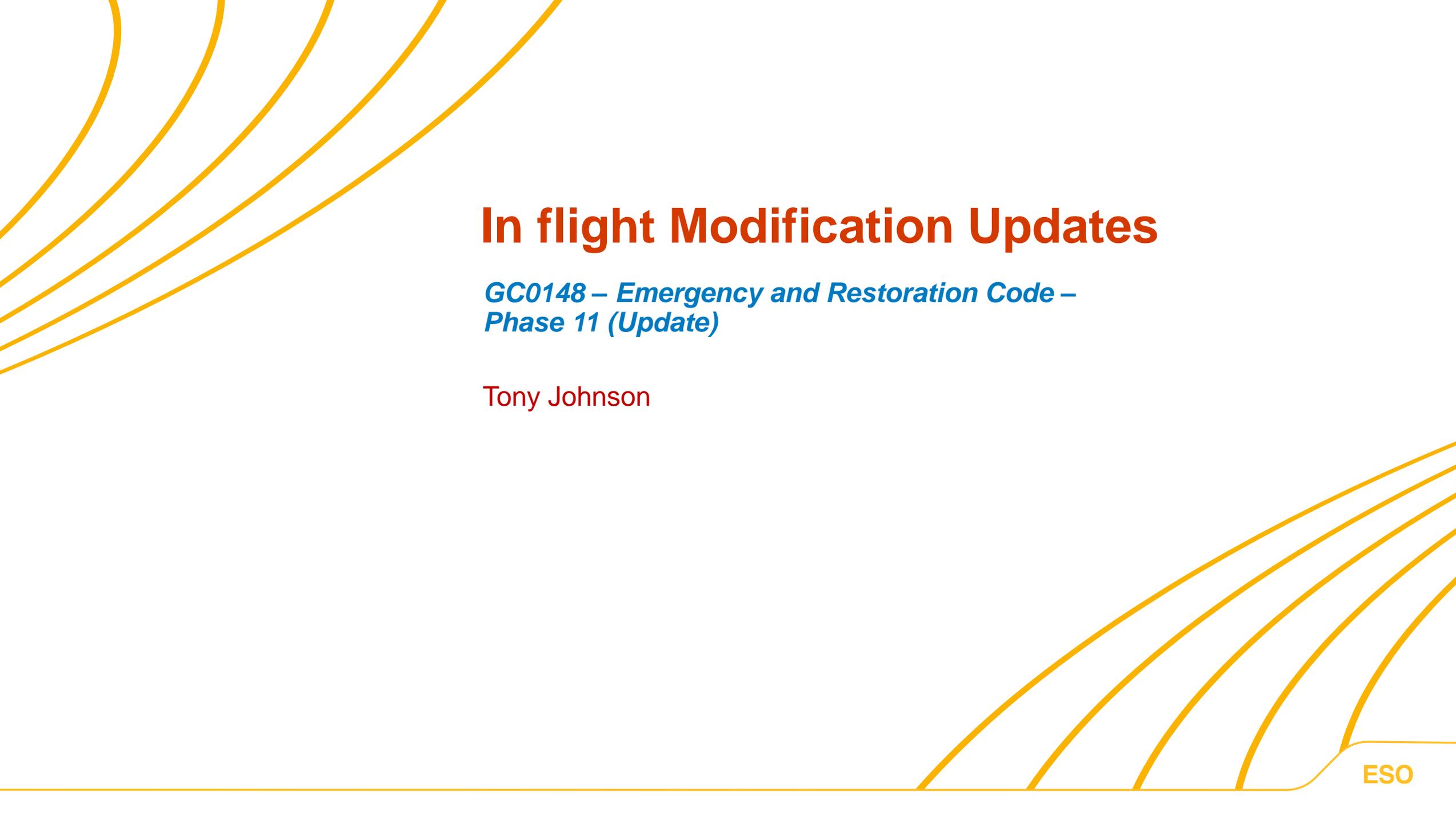
The Workgroup would like to include the following within their Terms of Reference:

## Additional Workgroup Term of Reference

- e) Review STC to confirm whether the contents are in line with GC0156 modifications to the Grid Code.
- f) Confirm if STC requirements for OFTOs under System Restoration are similar to the requirements for onshore TOs under the STC? This will ensure that Users of OFTO networks can participate in the restoration process
- g) Review and update the STC to ensure that network design takes into account but not limited to:
  - An electrically weak network
  - Reactive gain
  - Ability to energise with limited generating capability

## CM089 - the asks of Panel

- **AGREE** the additional points within Terms of Reference?



# In flight Modification Updates

*GC0148 – Emergency and Restoration Code –  
Phase 11 (Update)*

Tony Johnson

# Emergency and Restoration Code – Phase II

GC0148 – Update  
Presentation to STC Panel

26 April 2023

# High Level Objectives of the GC0148 Workgroup

- Address those Articles of EU Emergency and Restoration Code (E&R) which have a Compliance Deadline of 18<sup>th</sup> December 2022
  - Art 15(5) – 15(8) – Low Frequency Demand Disconnection
  - Art 41 – Communications Systems
  - Art 42 (1)(2) and (5) – Critical Tools and Facilities
- Address the outstanding issues of E&R Phase I introduced in 2019
  - The Treatment of Electricity Storage Modules during low System frequencies
  - How non CUSC parties fall under the remit of E&R
- Consider the introduction or otherwise of Distributed Re-Start
- The GC0148 solution comprises the Original and two Alternatives (WAGM1 and WAGM2) which both relate to System State (WGAM 1 – includes the original plus Emergency, Blackout and Restoration States) and (WAGM 2 – includes the original plus Normal, Alert, Emergency, Blackout and Restoration States)

# Documents included in the GC0148 Consultation

- System Defence Plan (updated to include Distributed Re-Start)
- System Restoration Plan (updated to include Distributed Re-Start)
- Test Plan (updated to include Distributed Re-Start)
- Control Telephony Standard
- Legal Text – Critical Tools and Facilities and Governance Arrangements
- Legal Text – Electricity Storage Modules under low System Frequencies
- Legal Text – Distributed Re-Start
- Draft Distributed Re-Start Contracts
- Notification letters
- Code Mapping

# Proposed High Level Grid Code Changes

Grid Code Section	Summary of Update
Glossary and Definitions	Introduction of new definitions – changes to some existing definitions – Eg Critical Tools and Facilities and Test Plan
Planning Code	Data reporting for Electricity Storage Modules when under low System Frequency Conditions
Connection Conditions	Minor amendments to the telephony requirements and the introduction of Critical Tools and Facilities – 72 hour resilience
European Connection Conditions	Minor amendments to the telephony requirements, introduction of Critical Tools and Facilities – 72 hour resilience and requirements on Electricity Storage Modules transitioning from import to export under low frequencies
European Compliance Processes	Simulations and tests on Electricity Storage Modules transitioning from import to export under low frequencies
OC4	New OC - Introduction of System State to reflect WAGM1 and WAGM2
OC5	Minor Amendment to OC5.5.3.3
OC6	Amendments to OC6.6.6 relating to low frequency demand disconnection especially in relation to Electricity Storage Modules
General Conditions	Governance Process around the System Defence Plan, System Restoration Plan and Test Plan

# Current Status (1)

- Distributed Re-Start and associated work (eg Contracts) removed from the GC0148 work and moved into the GC0156 modification
- Grid Code Workgroup Consultation held between 28 March and 27 April 2022
- Following the Workgroup Consultation two WAGM's were introduced to reflect System State.
- The Legal Text was reviewed on 28<sup>th</sup> May 2022 and again on 11 July 2022 following identification of an error in the baseline legal text
- The GCRP voted in favour of the modification in July and the Code Administrator Consultation was held from 3 August 2022 – 5<sup>th</sup> September 2022 – Two responses were received both in favour of the modification
- The issue was presented to the September GCRP and it was submitted to Ofgem for determination in October 2022 but was sent back to the Grid Code Review Panel in January 2023 when the ESO notified Ofgem and BEIS of an issue with Aggregators when identified following a GC0156 meeting in November 2022

## Current Status (2)

- After further GC0148 Workgroup Meetings in March 2023, a presentation to the ADE (Association of Decentralised Energy) and acceptance at the Grid Code Review Panel in March, GC0148 was submitted for the Code Administrator Consultation (3 April 2023 – 4<sup>th</sup> May 2023)
- We now propose to formally raise the consequential GC0148 mod at the STC Panel in May 2023 once the GC0148 solution is more clearly established
- This now interacts with GC0156 (Implementation of the Electricity System Restoration Standard)
- Unfortunately, due to the uncertainty associated with GC0148, the consequential modification process for GC0156 (CM089) have already been raised at the STC Panel ahead of GC0148 with the drafting of CM089 already underway.
- The changes being proposed to the STC and STCP's in respect of GC0148 will be a subset of those for GC0156 but in summary will be limited to Definitions and Critical Tools and Facilities

# Expected Changes to the STC

- As part of this process some changes will be required to the STC and STCP's most of which are consequential
- These are minor as most of the changes apply to "Users" through the Grid Code and Distribution Code
- STC Changes
  - Section D (Planning Coordination)
  - Section J (Interpretation and Definitions)
  - Section K (Technical, Design and Operational Criteria and Performance for Offshore Transmission Systems)

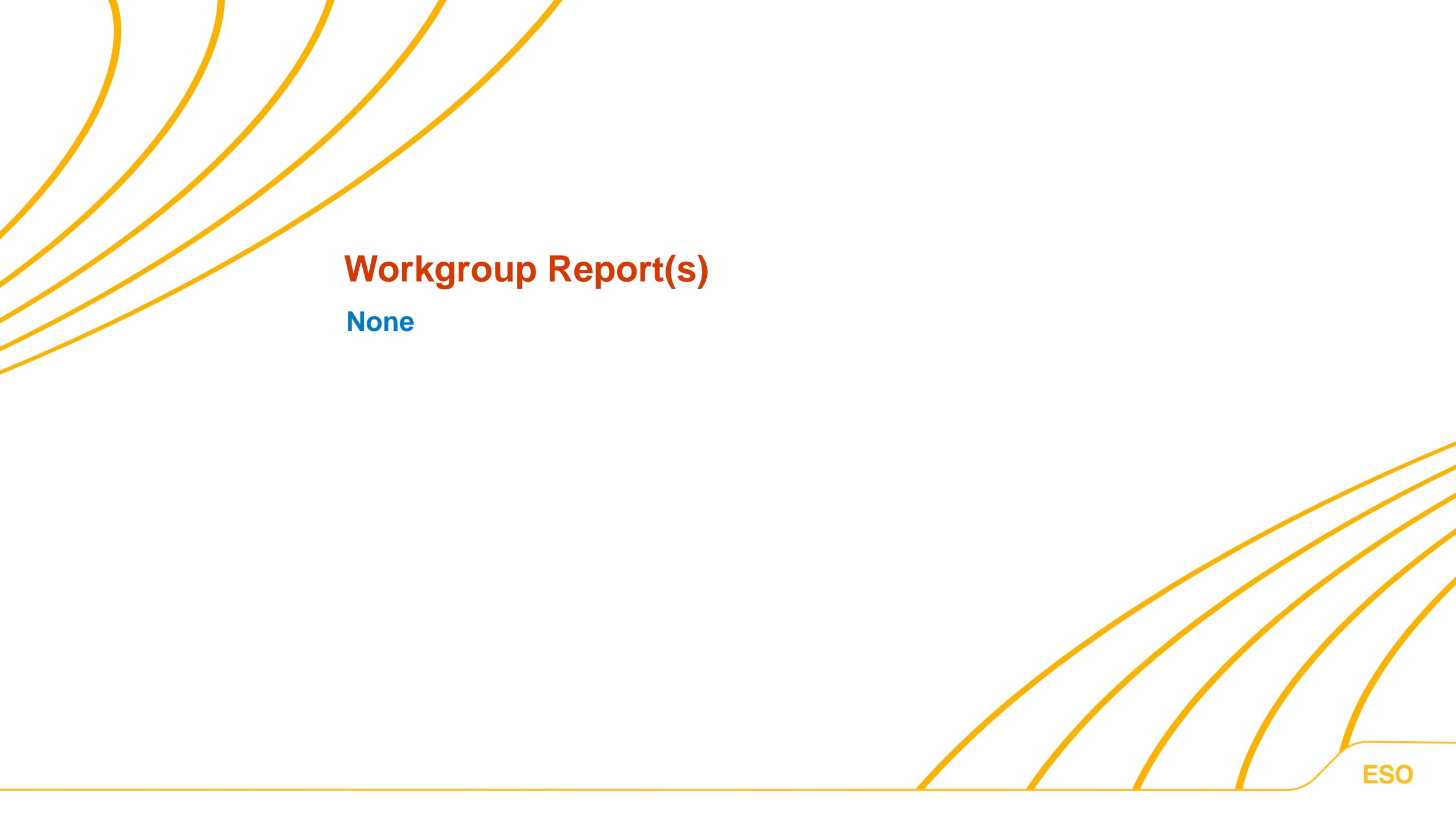
# Expected Changes to the STCPs

- Changes to the STCPs are anticipated to be minor but expected to include
  - STCP 04-5 (Operational Telephony)
  - STCP 04-6 (Offshore Datalink Functional Specification for Telecontrol Communications Interface)
  - STCP 06-1 (Black Start)
  - STCP 06-4 (Contingency Arrangements)
  - Others?

# Request of STC Panel

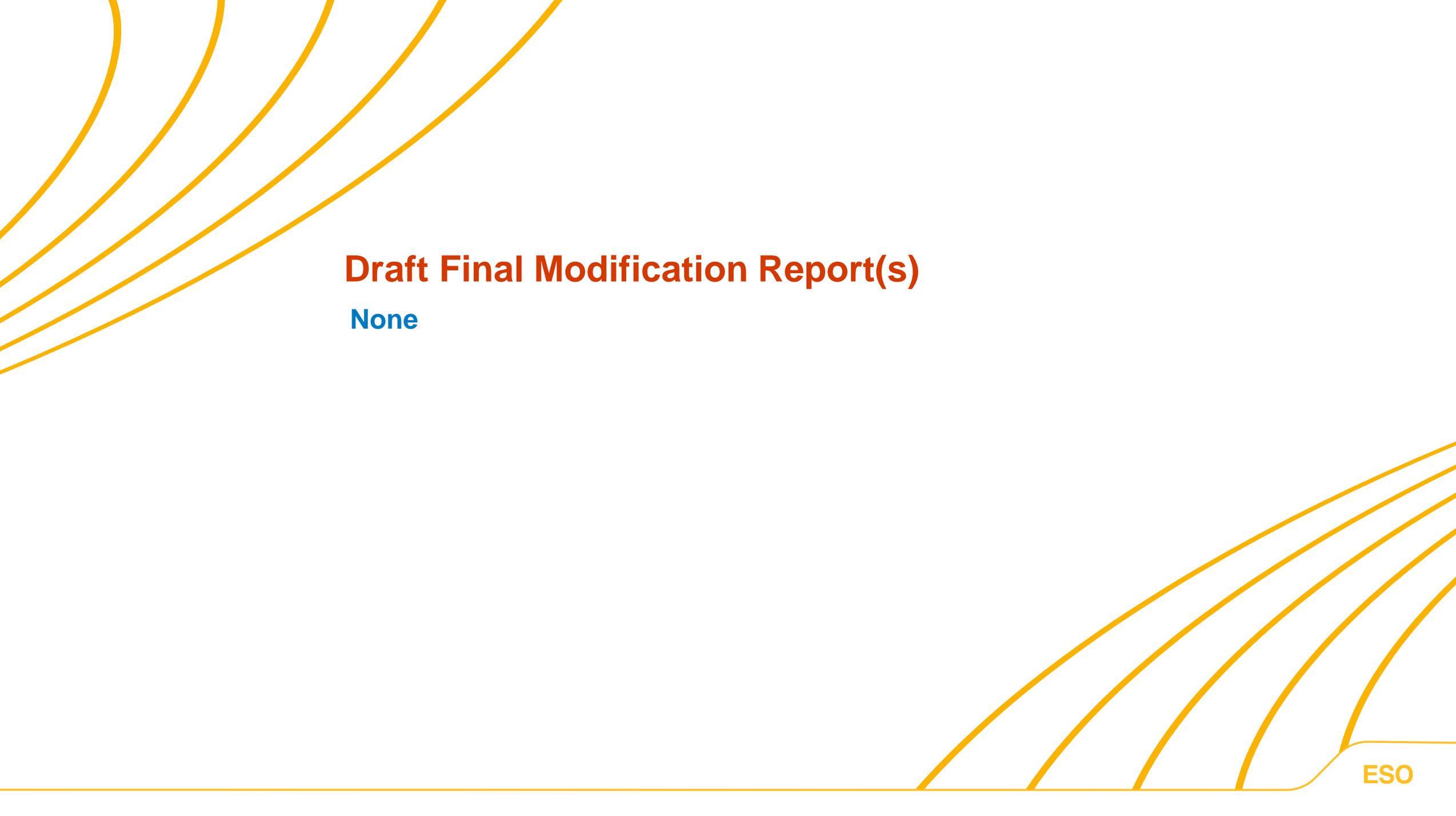
- To be aware of the changes introduced through Grid Code modification GC0148
- Most of the changes apply to Grid Code User's though some (eg Critical Tools and Facilities) will apply to Transmission Licensees
- The ESO will undertake a review of the STC and STCP's to ensure consistency with the GC0148 changes and raise the necessary STC / STCP mods to reflect these
- The changes to the STC and STCP's will be a subset of the modifications proposed as a result of CM089 (Consequential changes arising from GC0156)
- A formal modification will be raised at the may STC Panel meeting. As part of this you will be asked to:
  - Consider if the STCP Amendments are material – the only area where this is expected is in relation to Critical Tools and Facilities though note also the interaction with CM089
  - Should this modification proceed to Workgroup noting the interaction with CM089.

**Do you have initial view on this?**



## Workgroup Report(s)

None



## Draft Final Modification Report(s)

None



**Any Other Business**

**None**

# Next Panel Meeting

**10am on 31 May 2023**

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**Papers Day – 23 May 2023**

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**Modification Proposals to be submitted  
by – 16 May 2023**

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**Close**



**Deborah Spencer**  
STC Panel Chair