

Grid Code Review Panel

Minutes: 25 February 2021

Grid Code Review Panel Minutes

Date: 25/02/2021 **Location:** Microsoft Teams

Start: 10:00am **End:** 14:00pm

Participants

Attendee	Initials	Company
Trisha McAuley	TM	Independent Panel Chair
Nisar Ahmed	NA	Code Administrator Representative
Joseph Henry	JHe	Panel Technical Secretary (Alternate)
Alan Creighton	AC	Panel Member, Network Operator Representative
Alastair Frew	AF	Panel Member, Generator Representative
Christopher Smith	CS	Panel Member, Offshore Transmission Operator Representative
Gurpal Singh	GS	Authority Representative
Graeme Vincent	GV	Alternate, Network Operator Representative
John Harrower	JHa	Panel Member, Generator Representative
Nadir Hafeez	NH	Authority Representative
Jeremy Caplin	JC	BSC Panel Representative
Robert Longden	RL	Panel Member, Supplier Representative
Rob Wilson	RWi	Panel Member, National Grid ESO
Roddy Wilson	RW	Panel Member, Onshore Transmission Operator Representative
Sigrid Bolik	SB	Panel Member, Generator Representative

Observers/Presenters

Attendee	Initials	Company
David Wildash	DW	National Grid ESO, Presenter
Jeno Abraham	JD	National Grid ESO, Presenter
Paul Mullen	PM	National Grid ESO, Presenter
Phil Smith	PS	Observer/presenter (for GC0130).

Apologies

Attendee	Initials	Company
Steve Cox	SC	Panel Member, Network Operator Representative
Kavita Patel	KP	National Grid ESO (Code Administrator)

1. Introductions and Apologies

8603. Apologies were received from Steve Cox. Joseph Henry attended as alternate for Kavita Patel.

2. Minutes from previous meeting

8604. Subject to the incorporation of minor amendments proposed by AC and RW, the minutes from the Grid Code Review Panel meeting held on the 25 January 2021 were approved.

3. Review of actions log

8605. The Panel reviewed the actions log from the meeting held on 17 December 2020. Actions **389, 390, 391, 392, 393, 395, 396, 397** and **398** were closed as agreed by Panel. The actions log can be found [here](#).

4. Chair's update

8606. The Chair advised that having spoken with Michael Gibbons, Chair of the BSC Panel, she would be in attendance at the March BSC Panel.

8607. The Chair had also advised that the chair of the UNC Panel had been in contact with herself and other Panel Chairs to arrange a meeting to share best practice and experiences ahead of the expected development in the progress of the Energy Codes Review.

5. Code Administrator Survey Update

8608. David Wildash (National Grid ESO) attended the Panel meeting to brief members on the recent independent Code Administrator Survey. DW thanked Panel members who participated in the Code Administrator Survey and noted that continuous improvement is important with regards to Code Administration.

8609. DW advised Panel that the survey results were encouraging, showing a 25% increase in satisfaction scores when compared with the CACoP survey results received in 2020. DW noted that, based on the 2020 CACoP survey results, a similar score would have moved the ESO, as Code Administrator, up to joint 4th position, when compared with the other energy Code Administrators' scores.
8610. The Survey in particular highlighted that there had been improvements in the service offered by the Code Administrator, the ease of use of the website as well as tangible improvements in reports and communications.
8611. DW noted that, whilst these results were encouraging, there were several highlighted improvement areas, as well as suggestions for continuous improvement which were evidenced in the feedback received from Industry. Key areas which the Code Administrator will focus on moving forwards are resource, project management, effective chairing of meetings and innovations such as digitisation of the Grid Code.
8612. RL welcomed the result and commended the Code Administrator for the improvements undertaken. RL stated that increased resource in the ESO is a positive, especially when viewed in light of the limitations on resource and in the changing knowledge base in the industry.
8613. RL suggested that an issues group would potentially be useful and asked whether there was any budget for external support to provide this, or whether this could be provided internally by the ESO. DW stated that, across the ESO, the concept of trials was something the ESO were keen to undertake and that he is open to suggestions and to explore in greater detail.
8614. GN, with regard to industry participation and representation, asked if the ESO would be considering the number of individuals and companies involved in the process, and monitoring how that trend is developing. DW agreed that would be useful and was an indicator of how accessible the process was. JHe advised that this information was available and that he would look into this.
8615. **ACTION:** JHe to look into availability of information on workgroup composition during previous year.
8616. DW advised that he was happy to have conversations offline with RL and GN regarding engagement with Industry and the feasibility of establishing an issues group.
8617. **ACTION:** DW to meet with RL and GN regarding Issues Group and Industry Engagement.
8618. RWi said the balance of parties involved in the codes and the general shift towards smaller organisations with less experience suggested that there may be more of a role for Trade Organisations to get involved. This was noted by the Chair. RL supported this, saying that Trade Organisations may have more budget and resources to support code engagement particularly if this is flagged by their members.

8619. TM noted the positive results, and thanked Panel for offering to engage on the survey outputs. TM thanked Code Administrator staff for efforts in improving the service offered to Industry.

6. Authority Decisions

8620. There were no Authority Decisions.

7. New modifications

8619. There were no new Modifications.

8. ESO Presentation – 25 October 2020 Western HVDC Link Event

8620. Jenö Abraham (JA) presented to the Panel on the 25 October 2020 event. On Sunday 25 October 2020 at 04:41 hours the Western HVDC Link tripped whilst transmitting 1950MW south (Scotland to England). System demand was 18.4GW and system inertia was approximately 141GVAs. Post event review shows reserve and response holding were correct for the given system conditions and the system was secure prior to the fault. The slides which were presented to the Panel are available [here](#).

8621. RL asked JA that, if there wasn't an intertrip from the first faulty pole, then what caused the second pole to trip. JA explained that each pole has their own fault current protection with a time delay, so the second pole would not be aware of the fault with the first. RL asked if the ESO could operate over a certain period with monopole operations. JA confirmed that they could.

8622. AF asked whether it was a pressure transducer that failed. JA said that he would need to come back to AF on this. AF said his reading of the incident was that there wasn't an electrical fault during the incident.

8623. **ACTION:** JA to look into pressure transducer failure and reply to the Panel offline.

8623. AF continued and asked JA for further information regarding frequency swings and low inertia. AF stated that this wasn't an infeed loss but noted that it caused a system event. AF asked whether this had been anticipated. JA said the time of day was important and noted that the inclusion of consequential tripping of embedded generation due to 'loss of mains' protection operation. JA also advised that ESO would not want embedded generation to trip and that the swings are caused by the voltage not settling quickly enough. JA also noted that there was a project looking at this (stability pathfinder), tendering new services to provide more inertia infeed into the network.

8624. AF asked whether this is a new problem and queried whether the inertia is too low at the moment, noting that 200MW load swings are very different to infeed losses. Subsequently, AF asked whether the failure was unique or is it a broader concern. JA said the event was unique due to the large power swing. AF asked if power transfer stopped on the first event or second, or whether it went between the two. JA advised that he would respond (incorporated in above action).

8625. RW asked JA if he could explain the modelling post incident with regard to the drop-off of generation consistent with fall in frequency and explain if it had been possible to replicate the event, especially with regard to the double dip in voltage. JA said that the fault recorder data had been sent to the ESO modelling team, and there is a model which can

look at such events. RW asked if this would lead to a review, questioning if the incident would be mitigated if the power flow was lower at the time of the incident. JA advised that the HVDC link would be used at full output, if available at time of operation.

8626. AC made a query with regard to embedded generation. JA advised that most of the generation dropped off due to vector shift and not RoCoF (*Range of Change of Frequency*). The Accelerated Loss of Mains Change Program (ALoMCP) continues to revise RoCoF settings and remove vector shift relays. JA advised that the thresholds for operation of vector shift and RoCoF act differently in respect of an event and may be triggered at different points.
8627. RWi pointed out that this incident was possibly the worst disturbance without loss of infeed at the worst possible time that the system would see but noted that there was some cause to be encouraged that frequency limits were not exceeded and that there were no significant consequences. RWi also noted that consequential loss of mains operation was expected, but that the ALoMCP is addressing this. RWi also observed that no losses of BMUs should have happened as statutory limits were not breached. JA agreed that the system reacted well and stabilised quickly.
8628. RL asked if the ESO should be securing against this event as a credible fault, or if the fact that the system remained intact was fortuitous. JA agreed that it was a credible fault and that modelling, and monitoring took place of all anticipated contingencies including the Western Link. RL stated that the primary question that needed to be satisfied was why the BMUs (*Balancing Mechanism Units*) came off during this fault.
8629. GN queried whether the RoCoF traces had been measured in 3 locations or whether it was an average. JA stated that this was an average across BMUs within the zones. GN was conscious that the Systems Incident Report only gives a GB average. JA said the RoCoF would be slightly higher if reported locally only. GN asked if the 3 regional values could be included in the System Incident Report moving forwards.
8630. **ACTION:** JA to look into whether regional values could be included in the System Incident Report.
8631. AC asked if we should be concerned that 85MW of transmission connected generation had inappropriate vector shift or RoCoF protection. AC also queried whether the ESO needed to review whether other transmission connected generation had inappropriate protection systems. JA said it was a generator compliance issue. AC was concerned that DNOs are checking compliance on distribution connected generators and questioned if something similar should occur for transmission connected generation. JA said that he would take this away and get back to AC. RWi noted that this could fall within the scope of the GC0138/41 modifications on compliance which were in part an action from the 9 Aug 2019 event to achieve better compliance monitoring.
8632. **ACTION:** JA to review arrangements for Transmission Connected protections and reply offline (incorporated into action above).

9. In flight modification updates

8633. NA outlined the progress of the in-flight modifications where guidance was required from Panel in order to progress further.

GC0130 *'Update on progress of IS solution towards 02 February 2021 implementation date'* Phil Smith (ESO)

8634. PS advised Panel that the timeline set out in January's Panel is still on course and that **GC0130** is on course to be implemented on 18 March 2021.

GC0136 *'Non-material changes to the Grid Code following implementation of the EU Connection Codes'*

8635. Antony Johnson of the ESO presented to the Panel on **GC0136**. AJ advised the Panel that, as part of the development of **GC0136**, some material changes were identified but were not included in the final version due to the need to meet the Self-Governance criteria.

8636. AJ went on to explain the historical context of **GC0136**. Housekeeping corrections resulting from the implementation of the European Connection Network Codes (Requirements for Generators, HVDC and Demand Connection – as in modifications GC0100-102, which together formed the most extensive set of changes to the Grid Code probably since privatisation) were first proposed in **GC0116** *'Correction to the compliance dates included in modifications GC0100-102 for the Requirements for Generators (RfG) and HVDC European Network Codes and other minor housekeeping changes'*.

8637. Initially it was proposed to amend the compliance dates (as these were initially incorrect in the drafting of **GC0100** *'EU Connection Codes GB Implementation – Mod 1'*, **GC0101** *'EU Connection Codes GB Implementation – Mod 2'* and **GC0102** *'EU Connection Codes GB Implementation – Mod 3'*) in addition to other housekeeping changes, as provided for in the **GC0116** Proposal Paper. As there was debate around the materiality of some of the proposed changes, it was agreed to fast track correction of the dates only and leave the other changes until a later modification. **GC0136** was subsequently raised to address the remaining housekeeping changes

8638. AJ highlighted that there have been some lessons learned during the **GC0136** process. Amongst other things, the length of time taken to progress the modification led to the identification of many other additional changes. Furthermore, the materiality of some of the changes led to further debate; the resultant changes were so extensive that they touch every area of the Grid Code. Re-baselining also proved to be an issue, and it was agreed that it would be preferable if such a volume of housekeeping changes to the code was not allowed to build up again.

8639. AJ advised that the outstanding material changes identified as part of **GC0136** don't appear to be significant. The ESO wishes to take advice from Panel but doesn't think that they merit a modification being raised by themselves.

8640. AJ suggested that i) a register of housekeeping or minor changes is kept by the Code Administrator; ii) when a modification proposes changes to a section of the Grid Code, any housekeeping issues identified should be included in the implementation of this; iii) Housekeeping changes that will be incorporated will be noted to panel prior to a Code Admin Consultation and iv) any changes identified as material may need to be considered further to avoid the risk of delaying the main modification.

8641. TM asked if this plan was workable for the Code Administrator. NA advised that he was confident that this would work. RL asked who would identify housekeeping changes, and once it was built up, how would a backlog be managed. AJ advised that the register would be kept by Code Admin, but users could input with regard to housekeeping and the

Code Administrator would keep the register. With regard to the risk that certain parts of the codes may not be updated for some time, AJ recognised RL's concern.

8642. AF said that he would be content with housekeeping being added into modifications relevant to the section. AF said the General Conditions part of the Grid Code is an area which needs to be reviewed as large chunks of it could be deleted as obsolete. TJ advised that the process could deal with material comments, as per the approach taken in **GC0136**, and wouldn't preclude subsequent changes in future. AF noted that adding to future mods could dilute the original proposal.
8643. JHa said care would be needed that any housekeeping added to modifications were accepted by the proposer, and we must be aware of proposer ownership and the WAGCM (*Workgroup Alternative Grid Code Modification proposal*) process. AJ said there are mechanisms to use the alternative approach but had concerns with regard to scenarios where the mod is progressing to a deadline, and the housekeeping ends up delaying the modification.
8644. AC supported the outlined plan as a good idea. Having to wait to introduce housekeeping changes to different parts of the code should not preclude the change being made, provided it is clear. With regard to housekeeping changes being held up by objections, panel could use their powers to manage this. AC stated that housekeeping could be reduced if the quality audit of modifications was more effective.
8645. RWi made the point that housekeeping changes aren't the most important but can build up and become a mountain to climb like **GC0136**. The register should be kept and published online. The process should avoid the need for specific housekeeping modifications improving efficiency.
8646. In response to a question from AF, AJ advised that the material changes not progressed in **GC0136** would probably have to be raised as a separate mod. AF highlighted particular concerns with regard to the General Conditions. NA said that the Code Administrator couldn't commit at this point but would take this away for further thought offline.
8647. **ACTION:** Code Administrator to look into whether material changes would need to be raised as a separate modification.
8648. AC asked whether there should be an action to raise a modification proposal with regard to the non-material changes that arose during the development of **GC0136**. AJ said he would consider this as it would have to be done as a separate modification. AC said priority could be attributed to a modification via the usual process.

GC0146 – '**Solutions for frequency control of Power Park Modules**'

8649. RWi advised that the ESO was having conversations with Orsted with regard to practicality of their proposal, given that the modification looks to change an area of the Grid Code linked to the EU Codes, and that the law would remain the law and would still apply, despite a change to the Grid Code. This needs to be clarified before the workgroup continues.
8650. GN asked whether EU Law is getting in the way of implementing an optimum solution. GN stated that it was his belief that, if this was the case, then this should be called out if it is hindering GB meeting its net zero targets. RWi said RfG (*Requirements for Generators*) is retained European law and as such is now part of GB law. A legislation

change would be needed to change this. RWi stated that there are other routes, such as derogation, being discussed by the ESO and Orsted. RL said he shared GN concerns with regard to impact on future defects. GN asked if the ESO was lobbying ENTSO-E (*European Network of Transmission System Operators*) with regard to codes and asked if the ESO had flagged this at ENTSO-E. RWi highlighted that, post Brexit, we are no longer voting members of ENTSO-E and are awaiting more guidance on GB participation, including regarding the establishment of a Specialised Committee on Energy by GB and the Commission.

Modification Tracker

8651. NA gave a verbal update on Grid Code mod progress and allocation of resources. RL noted that he would appreciate a view of resource across codes to understand the Code Administrator view of the coming months. In response, NA shared a view of the workload across codes for the next 3 months.

8. Discussion on Prioritisation

The Panel reviewed the prioritisation stack. The updated Prioritisation Stack can be found via the Headline Report [here](#).

The following modifications were discussed as, in the Panel's view, they have strategic priorities but are not sufficiently progressing due to their position in the prioritisation stack:

GC0117 '*Improving transparency and consistency of access arrangements across GB by the creation of a pan-GB commonality of PGM requirements*';

GC0148 '*Implementation of EU Emergency and Restoration Code Phase II.*'

8652. It was agreed that **GC0117** and **GC0148** should be allotted resource to hold workgroups in the near future. AC stated that he would like to see both modifications progress reasonably swiftly. RWi said that **GC0148** is going to be an issue if it is delayed indefinitely, although it is not needed to be implemented until December 2022. AF said he was surprised that people had now raised issues as none had been raised at the previous Panel meeting. AC said that he had subsequently had an email exchange with the ESO around the implications of the modification, which had reminded him of some of the issues. NA said there would be capacity to start **GC0117** and **GC0148** in March and April respectively.

8653. GS said that **GC0148** had been discussed with Ofgem's compliance team. The conversations noted the December 2022 implementation date and highlighted that it would be useful if work could commence. AC noted that **GC0148** may have a requirement for changes to equipment on site, in which case there could be timing implications. RWi said that he doesn't anticipate anything complex at the moment and envisages things being straightforward but wanted to commence the working group discussions. RWi suggested that the stack is currently in the correct order.

8654. JHa echoed equipment concerns for generators with **GC0148**. Generators may not have the anticipated equipment and, as such, this may be one to watch. AF said that, to his mind, it would be the DNO (*Distribution Network Operators*) area that would need equipment and could see a requirement on generators to be doing more testing. JHa said this was a concern raised internally and thinks AF may be correct, as requirements may

apply down to 'Type B' generators. RWi said that this issue would be addressed by the workgroup.

8655. **DECISION:** The prioritisation stack remains unchanged.

09. Workgroup Reports

There was one Workgroup report presented to Panel.

GC0109 '*Publication of the various GB electricity Warnings or Notices or Alerts or Declarations or Instructions or Directions etc. ("System Warning Alerts") issued by or to the Network Operator(s).*'

8656. Paul Mullen presented the Workgroup Report from **GC0109** to Panel. **GC0109** seeks to publish on the Balancing Mechanism Reporting Service (BMRS) those System Warning Alerts that are not currently shared with market. PM highlighted to Panel that there were two solutions as part of the modification – the Original, which is specific to publishing in the BMRS, and WAGCM1 which removed this specification.

8657. PM highlighted that the Workgroup Consultation was held between 25 November 2020 and 16 December 2020 with 5 responses (none of which were confidential). The majority of the respondents supported the change and the proposed implementation. However, the ESO response i) Argued for the removal of 3 System Warning Alerts from the scope of **GC0109**; ii) Proposed implementation to be 30 (rather than 10) working days after Authority decision; and iii) Proposed that there is no need to specify BMRS in the legal text.

8658. The workgroup concluded unanimously that both the Original and WAGCM1 were better than the current Grid Code baseline. Minor legal text changes were proposed and accepted by the Panel.

8659. RWi stated that 8 of the 14 categories are already things that the ESO shares on BRMS while it remained unclear what the value of sharing the additional 6 would be and that other than the principle of 'transparency' the workgroup had not addressed this. PM agreed this was largely transparency based.

8660. JC asked whether, based on the WAGCM, was it the intention that a BSC mod be would be raised, or else simply published in BMRS. RWi said that he understood that this was not required and that an Elexon representative had been part of the workgroup. RWi summarised that the difference between the original, which specifies BMRS as the system to be used, and the alternative which does not is effectively zero as the ESO has no intention of using a system other than BMRS. The ESO was concerned that the Grid Code should not be system specific as this inevitably leads to a need for future modifications and cited the example of the outage planning system which has been successively TOPAM, TOGA, TOGA-Ellipse and now is being updated to TOGA replacement/eGAMMA but that none of these changes have required the code to be updated.

8661. GS queried whether the system would be changed. PM said that this was not the ESO's intention. PM advised that the WAGCM does not specify a system. RWi said that the

intention was only to use BMRS and, if that was to change, this would need to be agreed with users.

8662. **DECISION:** Panel unanimously agreed that GC0109 had met its Terms of Reference and could proceed to Code Administrator Consultation.

10. Draft Self- Governance Report

8660. No Draft Self-Governance Modification Reports were presented to Panel.

11. Reports to Authority

8661. There were no reports to the Authority.

12. Implementation updates

8662. There were no implementation updates.

13. Governance

8663. There were no updates on Governance.

14. Grid Code Development Forum (GCDF)

8664. JHe advised Panel that due, to no content being provided for the January GCDF, a cancellation email would shortly be sent out to industry.

8665. RWi advised that the ESO had hoped to use the GCDF slot to discuss the Frequency Risk Control Report but that this would now be done in a webinar on 8 March before being presented to the SQSS (*Security and Quality of Supply Standard*) panel on 29 January 2021. The consultation on the FRCR (*Frequency Risk and Control Report*) is planned to take place from 1-12 March.

8666. NA reminded the Panel that the Transmission Charging Methodology Forum (TCMF) will cover a Codes update in March and that it would be useful for GCRP Panel members to join if interested.

15. Standing Groups

Distribution Code Review Panel Update

8667. There were no updates on DCRP as there has been no meeting since the January Grid Code Review Panel meeting.

Joint European Stakeholder Group (JESG)

8668. The Panel noted that JESG occurred on 9 February 2020.

16. Updates on other Industry Codes

8669. JC advised the Panel that the Elexon panel would appreciate advance notice of any potential modifications to the BSC arising as a result of the current workload on other Code Modifications

17. Blockers to Modification progress (February, May, August, November)

8870. NA advised Panel that Quoracy was no longer a blocker post-GC0131 implementation, and highlighted that Prioritisation was ongoing. Panel noted the delay on **GC0130** as discussed. No industry delays had been evidenced in the previous quarter. It was also noted that there had been no Ofgem send backs.

18. Horizon Scan (February, May, August, November)

8671. NA updated the Panel on Horizon Scanning. NA noted that modifications with regard to SOGL Articles 118 and 119 would be raised in Q2 of 2021.

8672. AC asked whether, post digitisation, the hard copy of the Grid Code would remain the legal document. RWi said this was correct. RWi advised that two pieces of work were required, the actual digitisation, but also any formatting or restructuring which makes digitisation more practicable. This will come out of scope and engagement work.

19. Electrical Standards

The Panel noted the distinct governance route for Electrical Standards items.

8673. AF asked why the NETA (*New Electricity Trading Arrangements*) guide isn't listed in the General Connections list, so is this an Electrical Standards document. It was also noted that NETA was introduced in about 2001 so the arrangements are not really new anymore, and the changes which have occurred since include moving NETA to BETTA (*British Electricity Trading and Transmission Arrangements*).

8674. RWi said he could feed this back. RWi also mentioned it was a reasonable ask of Panel for such changes to be made. AF said it was a National Grid control centre document. RWi advised that if Panel saw it as internal it could be removed from the list but was not sure this is the correct action to take as it is a useful guide. RL said no document should be maintained that specified NETA due to the antiquated reference.

20. Forward Plan Update

8675. No Update for February 2021.

21. Any Other Business (AOB)

8676. NA noted that the ESO staff were unlikely to return to the office any time before June 2021.

8677. RWi provided a link to an ESO Markets Webinar for Panel members as had been referred to by DW earlier.

The next Grid Code Review Panel meeting will be held on 25 March 2021 at 10:00 via Microsoft Teams.

New Modification Proposals to be submitted by 10 March 2021.

Grid Code Review Panel Papers Day is 17 March 2021.