

Grid Code Review Panel

Wednesday 22 April 2020

Online Meeting via WebEx

WebEx details

Meeting link (copy into web browser):

<https://uknationalgrid.webex.com/uknationalgrid/j.php?MTID=m7ddd5331e0588c81b57121d3a5fe4d86>

Audio connection:

Telephone: 020 7108 6317

Access code: 592 479 430

Password: JyJ9pmvYx79

Welcome



nationalgridESO

Introductions and Apologies for absence

Apologies

Ross McGhin – Onshore Transmission Operator Representative

Alternate

Richard Woodward – Onshore Transmission Operator Alternate

Presenters

Louise Trodden, NGESO – GC0142

Observers

Approval of Panel Minutes



Actions Log

Review of the actions log





Chair's Update

An update from the Chair about ongoing relevant work, discussions etc.

Authority Decisions

- **GC0096** - Energy Storage
- **GC0105** - System Incidents Reporting
- **GC0107/113** - The open, transparent, non-discriminatory and timely publication...

New modifications submitted





GC0142- Adding Non- Standard Voltages to the Grid Code

Louise Trodden
National Grid ESO

Introduction

History

GSR0021 was raised in 2015 to look at reviewing incorporating 220kV transmission assets into the SQSS.

This was subsequently rejected by Ofgem as it did not offer a solution to further nominal voltages potentially requiring review and addition to both the SQSS and the network.

Future proof- additional equip
Not urgent no customers- limited potential

Decision Letter from Ofgem
GSR0021 Industry Consultation Paper

Proposal

Raise a new modification in response to Ofgem's decision letter dated July 2016.

The objective of this modification will be to capture any future equipment with varying nominal voltages – therefore avoiding frequent amendments to the SQSS and also the Grid Code. The aim will be to do this using defined terms where possible and creating a table of voltages similar to that in the EU codes in both the SQSS and the Grid Code.

Where are these cables?

Current Locations

The Kintyre-Hunterston subsea AC link has two subsea cables between Crossaig on the Kintyre peninsula and Hunterston.

These are connected to the Onshore Transmission System via two 400/220kV supergrid transformers at Hunterston and via two 220/132 kV transformers at Crossaig.

Future

220kV is common EU transmission voltage. It is possible that further equipment of other common voltages (Eg: 380kV, 110kV) could be connected to the GB system in the future.



Why should we review?

Clarity of Requirements

- Unclear what specification or performance is required from equipment at voltages not currently specified within the codes.

Consistency

- SQSS and Grid Code need to be aligned.

Specification

- In including specifications for equipment at voltage not currently covered by the codes.

What Areas of Code are to be Reviewed?

Section of the Grid Code	Grid Code Reference Points
Single Point of Connection	PC.A.8.1 and PC.A.8.3
Grid Voltage Variations	CC.6.1.4
Fault Clearance	CC.6.2.2.2.2 and CC.6.2.3.1.1
General Generating Unit	CC.6.3.2 and CC.6.3.4
Grid Voltage Fluctuations	Table CC.6.7.1 (b)
Steady State Voltage	CC.A.7.2.2.1.2.4
Reactive Capability Table	CC.6.3.2
Grid Voltage Variations	ECC.6.1.4.1
Fault Clearance	ECC.6.2.2.2.2
Grid Voltage Fluctuations	Table ECC.6.7.1 (b)
Protection Arrangement	ECC.6.2.3.1.1

Proposed Grid Code

CC.6.1.4

National Electricity Transmission System Nominal Voltage	Normal Operating Range	Pu
>300kV - 400kV	± 5%	0.95pu-1.05pu
>200kV -300kV	± 10%	0.90pu-1.10pu
<200kV	± 10%	0.90pu-1.10pu

ECC.6.1.4.1

National Electricity Transmission System Nominal Voltage	Normal Operating Range		Time Period for Operation
	Voltage	Pu	
>300kV	V -10% to + 5% V +5% to +10%	0.95pu-1.05pu 1.05pu-1.10pu	Unlimited 15 minutes
>110kV -300kV	± 10%	0.90pu-1.10pu	Unlimited
<110kV	± 6%	0.94pu-1.06pu	Unlimited

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Current Grid Code

National Electricity Transmission System Nominal Voltage

400kV

275kV

132kV

Normal Operating Range

400kV ±5%

275kV ±10%

132kV ±10%

National Electricity Transmission System Nominal Voltage	Normal Operating Range	Time period for Operation
400kV	400kV -10% to +5% 400kV +5% to +10%	Unlimited 15 minutes
275kV	275kV ±10%	Unlimited
132kV	132kV ±10%	Unlimited
110kV	110kV ±10%	Unlimited
Below 110kV	Below 110kV ±6%	Unlimited

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Questions from previous meetings

Grid Code

Are we compliant?

We believe that we are still compliant- this did not seem to be a concern to Ofgem in the previous rejected modification as no customers are currently connected.

At the values set right in the tables?

The tables have had the values amended to show Greater or Less than. Rather than 200-300kV and 300-400kV.

Why would we change the CC when this is for new connections?

We would like to keep consistency through the codes. There are no changes to the specifications, just the layout.

What about the Electrical Standards- Have advised relevant stakeholders of this proposed modification. The stakeholders will confirm if these are also to be modified.

SQSS

Will IEC standards be aligned?

There appears to be no conflict upon review.

The pu value on the table does not match

The table had a error on the presentation- it was the Grid Code, however within the legal text, it was correct.

Will the current cables work to those ranges?

Roddy Wilson at SEE has confirmed that the Kintyre – Hunterston cables are capable of operating over the voltage ranges set out in the proposal for the SQSS.

Is the 200kV cut off ok with the operational limits?

These values were derived from the previous papers that were submitted. (SQSS modification paper dated the 1st April 2015)

What about Offshore specification in Chapter 10?

There are no changes to specification, just the layout of what is already in the codes, however in this case we are not changing the layout of Chapter 10 as this already has ranges of voltages

Summary

This modification is fairly straight forward in that there are not complex changes to be made, and uses the same principles and technical detail of that in the previously rejected modification from Ofgem. Its also worth noting that in the initial papers submitted it was the preferred approach to have a range of voltages in the table.

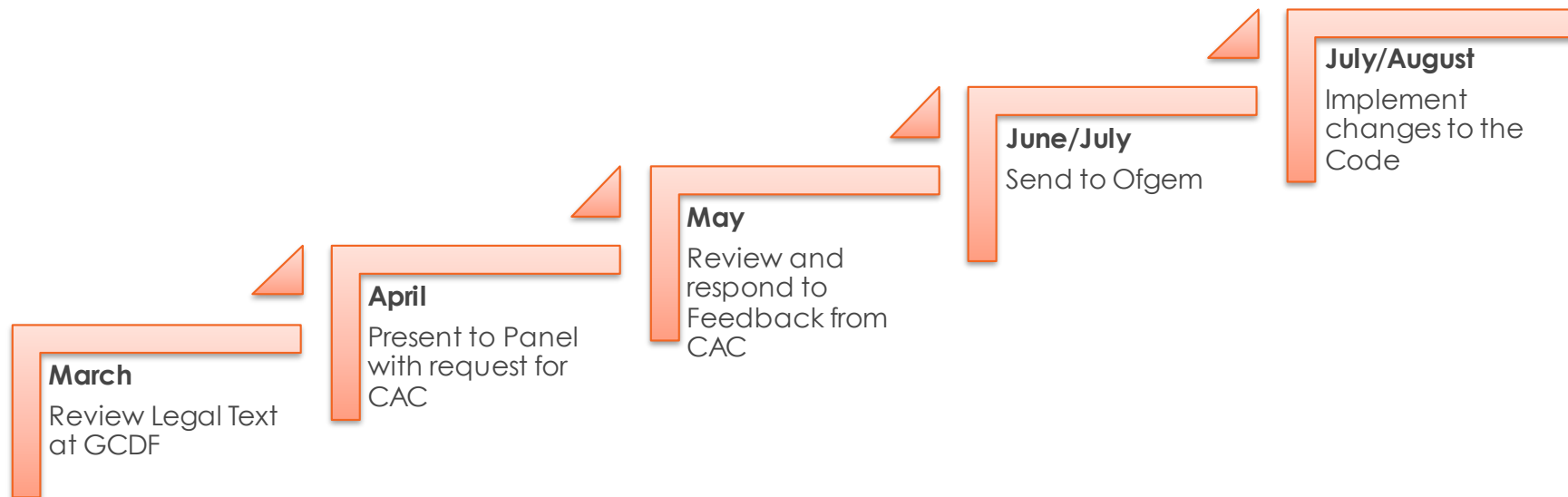
Having said this, it has been reworked to create flexibility of further nominal voltages being introduced in GB, therefore reducing the need to update the codes with further nominal voltages to support alignment for both the Grid Code and SQSS.

Next Steps

The next slide shows the reasons for rejection by Ofgem and the response that this modification proposal makes to them.

Authority's Assessment of the Proposed Modification	How the Proposed Modification Responds.
<p>We agree with the workgroup's change to the definition of the term "supergrid" in Chapter 11. We also agree that the voltage levels proposed by this modification proposal are aligned with IEC 60038. However, we are not convinced of the workgroup's proposed approach to including these in the SQSS.</p>	<p>There is no dispute to the term "'supergrid'" being updated. To keep this in the proposal. Another review of the IEC shows no conflict.</p>
<p>First, the workgroup have not provided sufficient justification for their proposal to adopt approach 1 (as described in section 3 above) for Chapter 6 while approach 2 is already used in Chapter 10 of the SQSS. We further note that the voltage limits as set out in paragraph 27, part VII "Supplies to Installations and to other Networks" of the Electricity Safety, Quality and Continuity Regulations (ESQCR) 2002 are based on approach 2. We think that the modification as proposed will produce unjustified and potentially confusing inconsistency between Chapters 6 and 10 of the SQSS and between the SQSS and ESQCR.</p>	<p>There is a range of voltages already used in Chapter 10 of the SQSS. This proposal aims to provide consistency in the code by also including a range of voltages and seeks to be aligned in its approach with EU codes.</p>
<p>We are also concerned that in the near future more changes to the SQSS may be required to reflect equipment being installed on the network at voltages different to the discrete voltages identified in the SQSS.</p>	<p>By removing specific nominal voltages and creating a table with a range, allows for other voltages to be used in the codes.</p>
<p>In terms of the timing of making the proposed changes to the SQSS, we note that the current installation of 220 kV transmission assets does not include any customer interfaces and therefore the proposed voltage limits do not apply to this installation. We do note though the possibility of 220 kV transmission network assets (as indeed those at other voltage levels) containing customer interfaces being installed in the future.</p>	<p>This change allows flexibility for any future assets to be clear on the requirements and specifications for each nominal voltages.</p>
<p>Given the above concerns, we believe that the workgroup and the SQSS Panel should consider the consistency between Chapters 6 and 10 voltage limits and review the options available to them to find an enduring solution that withstands the current technological limitations, whilst avoiding frequent and unnecessary changes to the SQSS.</p>	<p>This proposal seeks to create tables with voltage ranges so that there are consistencies in voltage limits and allows for further nominal voltages to be introduced without the need to frequently update the codes.</p>

Time Line of Proposed Next Steps



Critical Friend Feedback: GC0142

Code Administrator comments	Amendments made by the Proposer
<ul style="list-style-type: none">▪ Modification title needs to reflect what the modification is actually trying to achieve.▪ The defect needs to be clearly defined.▪ Further clarity needed on the purpose of the modification.▪ Proposed changes to structure/text to enhance the readability of the document.▪ Define all acronyms throughout the proposal form.▪ Clarification needed on the impacted parties and how they will be impacted by this proposal.▪ Clearly specify the requested Governance Route and the reasons for this.▪ Clarify cross code impacts and any proposed SQSS changes.▪ Updated the modification number in the title and footers.▪ Updated key dates (modification submission date and Panel date).▪ Updating the contact details for both the Code Admin rep and the National Grid ESO rep.▪ Hyperlink to reference material added.▪ Suggested adding a Glossary of Terms	<ul style="list-style-type: none">▪ Modification title amended and reference to 220kV removed.▪ Defect amended/more clearly re-defined.▪ Further clarification provided on the purpose of the modification.▪ Proposer did not accept all proposed changes to structure/text, as they were happy with the original document.▪ Acronym's have now been defined in the document.▪ Proposer did not feel further clarification was needed on impacted parties ("Users"), but did add some minor additional text in these sections.▪ The Proposer has specified their preferred Governance Route and the reasons for this.▪ Further clarification provided on Cross-code impacts, including details on the SQSS modification that is going to be raised.▪ Hyperlinks included in the document.▪ The Proposer did not feel a Glossary of Terms was needed at this stage.

Panel Decision

Does the Panel agree that:

- This is a standard governance modification?; and
- This modification should proceed to Code Administrator Consultation?



In Flight Modification Updates

Review of all Grid Code modifications with current status, next steps and any Panel recommendations

Dashboard – Grid Code (as at 14 April 2020)

Category	Nov	Dec	Jan	Feb	Mar	Apr
New Modifications	0	2	0	2	2	1
In-flight Modifications*	18	19	20	20	21	22
Modifications issued for workgroup consultation	0	1 <i>GC0130</i>		1 <i>GC0135</i>	0	1 <i>GC0131</i>
Modifications issued for Code Administrator Consultation	2 - <i>GC0096, GC0105</i>	1 – <i>GC0135</i>		1– <i>GC0107/113</i>	1– <i>GC0133</i>	2– <i>GC0130</i>
Workgroups held	2	1	4	2	1	1
Authority Decisions	0	1 <i>GC0129</i>	0	0	0	0
Implementations	0	0	0	3 <i>GC0125/127/128</i>	1 <i>GC0135</i>	0
Modifications on Hold	2	2	1	1	1	1
Workgroups postponed due to quoracy issues	2 (<i>GC0131, GC0132</i>)	0	0	0	0	0

Grid Code Workgroups for next 3 months (as at 14 April 2020)

Completed	Booked in	To be arranged	No further Workgroups needed	New Mods
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GRID CODE	April	May	June	July
GC0131		w/c 4 May?		
GC0130				
GC0109				
GC0134	Mon 6 April 2020	WG consultation	x?	
GC107/113				
GC0139		Wed 06-May-2020	x?	x?
GC0141		x? May workgroup day?	x?	x?
GC0138		x? May workgroup day?	x?	x?
GC0117			3/6/2020?	
GC0140				
GC0103				
GC0137	Thu 09-Apr-2020			
GC0142				

CUSC Workgroups for next 3 months (as at 14 April 2020)

Completed	Booked in	To be arranged	No further Workgroups needed	New Mods
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CUSC	April	May	June	July
Tranche 1 - TCR Modifications and High Priority Charging Modifications				
CMP327/CMP317	7/4/20 and 15/4/20	x?		
CMP334	20 and 21 April			
CMP335/336			9 and 30 June 2020	
CMP337/CMP338	08/04/2020 and 20/4/20	07/05/2020?		
CMP339	7/4/20 and 15/4/20	x?		
The new CMP332 and CMP340			15/06/20	22 and 23 July 2020
CMP324 / CMP325	x?			

CUSC	April	May	June	July
Tranche 2 - Modifications to be progressed in Q1/Q2 2020 where gaps arise				
CMP311		x?		
CMP326		x?		
CMP316		x?		
CMP304		x?		

CUSC Workgroups for next 3 months (as at 14 April 2020)

Completed	Booked in	To be arranged	No further Workgroups needed	New Mods
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CUSC	April	May	June	July
Tranche 3 - Modifications to be progressed from June 2020 (prioritisation order to be determined Q2 2020)				
CMP286/CMP287				
CMP288/289				
CMP291				
CMP298				
CMP300				
CMP308				
CMP315				
CMP328				
CMP330				
CMP331				
CMP341				

Discussions on Prioritisation



Prioritisation principles

Complexity The defect addressed by the proposed modification has implications for many different areas of the energy system which need to be taken into consideration throughout the process. The technical complexity and cross code impact of the modification will most likely require significant use of industry time and a higher than average number of workgroups to conclude the process.

Importance The perceived value and risk associated with the proposed modification. The value / risk could be considered from a number of different perspectives i.e. financial / regulatory / licence obligations both directly for customer and end consumers more generally.

Urgency A proposed modification which requires speedy consideration within the code governance process, as well as the timescales for implementation within the respective code.



Blockers to Modification Progression

(February, May, August, November)

Break



Workgroup Reports

None



Draft Final Modification Reports

GC0133 - Timely
informing of the GB
NETS System State
condition

GC0132 - Updating the
Grid Code governance
process to ensure we
capture EBGL
change process for
Article 18 Terms and
Conditions (T&Cs)

GC0133 Background

GC0133 was proposed by SSE Generation Ltd and was submitted to the Grid Code Review Panel for its consideration on 29 October 2019.

GC0133 will require the Transmission System Operator (TSO) for GB; National Grid Electricity System Operator (NGESO); to inform, in a timely manner, the System State condition of the GB National Electricity Transmission System (NETS) to market participants.

At the Grid Code Review Panel on 29 October 2019, the Panel unanimously agreed that GC0133 should proceed to Code Administrator Consultation once the Proposer and the ESO representative had agreed the solution and the legal text.

GC0133 Code Administrator Consultation

The Code Administrator Consultation was issued on 12 March 2020 for 15 working days with a closing date of 2 April 2020.

3 responses were received (Drax Power Limited, SSE Generation Limited and National Grid ESO)

On meeting the Grid Code Objectives

The majority of respondents agreed that the Original best met the Grid Code Objectives stating that the Modification increases transparency and provides industry with a clearer indication of the current system state.

However, the National Grid ESO respondent was unclear on the benefits to stakeholders and consumers and is particularly concerned about the considerable potential for media misreporting of the system state or for incorrect conclusions to be drawn from this.

GC0133 Code Administrator Consultation

On Implementation:

Two respondents supported the implementation approach (10 working days following a decision from the Authority). One of these respondents commented that there is no need for either a transition period or a prolonged implementation period as the systems are already in place.

However, the National Grid ESO respondent (whilst noting that “system state is currently monitored and updated by the ESO through the ENTSO-E Awareness System”) proposed implementation ~ 6 months after the Authority’s decision date. This would allow National Grid ESO the time to develop, with stakeholders, the right messaging required and limit the risk of misinterpretation.

No changes to Legal Text proposed

[RW to talk through the System Incident Report]

Next steps

- **Recommendation Vote**
- **Final Modification Report to be issued**
- **Timetable below:**

Stage gate	Date
Circulation of Final Modification Report for Panel review ahead of submission to Authority (5 working days)	27 April 2020
Final Modification Report submitted to Authority for decision	05 May 2020
Anticipated Decision from Authority (25 working days)	11 June 2020
Implementation date	10 working days after Ofgem decision

GC0132: Updating the Grid Code governance process to ensure we capture EBGL change process for Article 18 Terms and Conditions (T&Cs)

Chrissie Brown –
Code Admin NGENSO



Background

- **GC0132** was raised by National Grid ESO and was submitted to the Grid Code Review Panel for their consideration on 27 September 2019
- Quoracy could not be reached for GC0132; two Panel members put themselves forward at the November GCRP meeting to progress the modification. Three Workgroup meetings have been facilitated.
- Three alternatives (WAGCMs) have been developed alongside the Proposer's solution

Workgroup Vote: The Workgroup concluded that all solutions (WAGCM1, WAGCM2 and WAGCM3) better facilitate the Grid Code objectives. They agreed by majority that the best solution is WAGCM1.

GC0132 solutions overview

Proposer solution	<p>One-month consultation carried out at Code Administrator Consultation stage of the process for only those modifications that affect the Article 18 T&Cs related to balancing, as outlined in Annex GR.B.</p> <p>TSO (The Company) to consider responses received and provide justification as to whether responses should be taken into account or not as part of the Draft Final Modification Report stage of the process.</p>
WACGM1	<p>The process that has been drafted for the Original solution would be carried out for all future modifications raised to the Grid Code.</p>
WACGM2	<p>The change would be the same as identified in the Original solution apart from The Company, as TSO would delegate their responsibility under Article 10(6) to the Grid Code Review Panel (GCRP) who would then perform that task, namely that the GCRP "... shall duly consider the views of stakeholders resulting from the consultations undertaken in accordance with paragraphs 2 to 5, prior to its submission for regulatory approval. In all cases, a sound justification for including or not including the views resulting from the consultation shall be provided together with the submission and published in a timely manner before or simultaneously with the publication of the proposal for terms and conditions or methodologies."</p>
WACGM3	<p>This would be a combination of WACGM1 and WACGM2 meaning that the process identified would apply for every future Grid Code modification raised and the GCRP would carry out the responsibilities outlined in Article 10(6).</p>

GC0132 Code Administrator Consultation

The Code Administrator Consultation was issued on 17 March 2020 for 15 working days with a closing date of 7 April 2020.

2 responses were received (one late) - SSE Generation Limited and National Grid ESO

On meeting the Grid Code Objectives

- Both respondents stated that the original Proposal and all alternatives were neutral against objectives (a) to (c)
- Both respondent believed that the original Proposal and all alternatives were positive against objectives (d) in ensuring compliance with European Law
- One respondent believed that WAGCM2 and 3 would be negative against objective (e) as they introduce an unnecessary and confusing change of roles, as well as requiring a decision from Ofgem on the delegation of ESO responsibilities
- The other respondent stated that WAGCM2 and 3 would ensure a consistency in approach between the BSC (as set out in the P392 workgroup discussions) and Grid Code with the Article 10(6) powers being exercised, in both codes, by the respective Panel therefore being positive against objective (e)

On Implementation:

Legal status of 8 October 2019 decision letter questioned – SSE

P392 (Equivalent BSC change) noted 4 August 2019 date used for this – SSE

Next steps

- **Recommendation Vote**
- **Final Modification Report to be issued**
- **Timetable below:**

Stage gate	Date
Circulation of Final Modification Report for Panel review ahead of submission to Authority (5 working days)	24 April 2020
Final Modification Report submitted to Authority for decision	5 May 2020
Anticipated Decision from Authority (25 working days)	10 June 2020
Implementation date	25 June 2020

Reports to the Authority

GC0107/113 - The open, transparent, non-discriminatory and timely publication of the generic and/or Power Generating Module specific values required to be specified by the relevant TSO(s) and / or relevant system operator et al., in accordance with the Requirements for Generators (GC107) and Demand Connection Conditions (GC113)

Submitted to Ofgem on 09 April 2020



Implementation Updates

None



Electrical Standards

Distribution Code Review Panel (DCRP), ENA and its working group have developed modifications to ENA EREC P24



Governance

Consultation timescales during lockdown period



Grid Code Development Forum and Workgroup Day(s)



Grid Code Development Forum and Workgroup Day(s)

April Grid Code Development Forum and Workgroup Days

Workgroup Days – 31 March and 01 April 2020

GCDF – 31 March 2020 – Agenda:-

- SQSS Review update (Aug 2019 Power outage) – National Grid ESO
- 220KV Modification – National Grid ESO

May Grid Code Development Forum and Workgroup Days

Workgroup Days – 05 May and 06 May 2020

GCDF – 06 May 2020 – Draft agenda as follows:-

- Kick start of GC0117 – to be represented by NGESO on behalf of Garth Graham (SSE)
- Emergency & Restoration (E&R) Market suspension – NGESO



Standing Items

- **Distribution Code Panel update**
- **JESG Update**

Update on Other Industry Codes





Horizon Scan

(February, May, August,
November)



Forward Plan Update (Customer Journey)

(January, March, May, July,
September, November)

- Stage gate documentation update (Nisar Ahmed)
- Critical Friend Quarterly Update (Nisar Ahmed)

Stage Gate documentation update

Work to date

- Trial of the new Workgroup Consultation template in February 2020
- Feedback provided by Panels and industry members
- Webinar held to inform industry of the upcoming changes
- Template for Workgroup Consultation finalised
- Trial of Workgroup Report completed on CUSC (TCR modification CMP333)
(GC0131 – Will be the first workgroup report in the new format for GCRP to approve – we would welcome feedback).

Next steps

- Code Administrator Consultation (with and without Workgroup being finalised)
- Draft Final Modification Report and Final Modification Reports to be drafted

How will this work?

- **All new** proposals will use the new templates as they move through the change process
- Modifications that have been in the process for a period of time without progressing to Workgroup Consultation stage will use the new template
- Modifications that have passed the Workgroup Consultation stage will continue on the old templates

How can I feed in?

Please feel free to get in contact with your Panel CA representatives to feedback any comments

Critical Friend Feedback

5 Grid Code Modification Proposals received from 1 February to 14 April inclusive

- All 5 have had all critical friend checks undertaken on;
- For all 5 of these, required communications were sent to Independent Chair, Panel and industry within agreed timescales (i.e. on the next working day after Modification Proposal Submission Date); and
- Note there have been 3 CUSC Modification Proposals raised in the same period.

General areas of feedback (across all CUSC and Grid Code Modifications)

- Proposed simplification of the language;
- Continue to seek definition of acronyms and not assume the reader has a prior understanding of the proposed change;
- Continue to propose changes to the title so clear what the Modification is seeking to achieve; and
- Implementation timescales need to be clearer to allow informed decision on prioritisation.

Feedback we will act on to further improve our service:

- Added further checks to challenge where implementation and consumer benefit not clear;
- Making sure we check that the justification for urgency is clear and linked to Ofgem's Urgency Criteria;
- Internal practical workshops held which have helped embed the process within the team and further enrich it; and
- Continue to have discussions with Proposers ahead of Modification Proposal Submission Date so clear on expectations, level of detail and process.

Any thoughts from Panel so far?

- Are you seeing better quality Modification Proposals?
- Any further feedback?

AOB

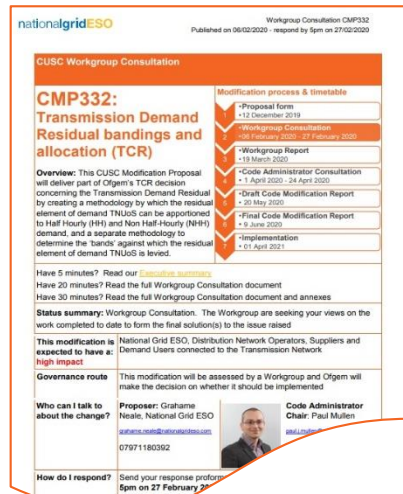
- 1) Garth Graham (SSE) Email on ENCC and blockers (RW)
- 2) General discussion on impacts of coronavirus outbreak (ALL)
- 3) Ofgem Annual call for evidence on ESO Performance (NA)
- 4) Formal thank you to Chrissie Brown (TM - Chair)



ESO Code Administrator performance

Highlights

- Relaunch of Code Administrator website
- Redevelopment of our consultation documents
- Introduction of proposal summaries and executive summaries



Ofgem call for evidence

- Requesting stakeholder feedback on our performance since April 2019
- Feedback requested by 14 May (or end of May)

<https://www.ofgem.gov.uk/publications-and-updates/call-evidence-eso-performance-over-2019-20-regulatory-period>

nationalgrideso.com

National Grid ESO, Faraday House, Warwick Technology Park,
Gallow's Hill, Warwick, CV346DA

national**grid**ESO

A large, textured orange paint splatter graphic on the left side of the slide, with the text 'Next Panel Meeting' written in white inside it.

Next Panel Meeting

10am on 28 May 2020 via WebEx

Papers Day – 19 May 2020

**Modification Proposals to be
submitted by 12 May 2020**

Close and Lunch

