


Stage 5: Draft Final Modification Report		At what stage is this document in the process?	
<div>CMP320</div> <div>Mod Title: Island MITS Radial Link Security Factor</div>		<div><div>01</div><div>Proposal Form</div></div> <div><div>02</div><div>Workgroup Consultation</div></div> <div><div>03</div><div>Workgroup Report</div></div> <div><div>04</div><div>Code Administrator Consultation</div></div> <div><div>05</div><div>Draft Final Modification Report</div></div> <div><div>06</div><div>Final Modification Report</div></div>	
<div><div>Purpose of Modification:</div><div>Islands that have a Main Interconnected Transmission System (MITS) Node but are served by a single circuit radial link are exposed to non-cost reflective charging of a 1.8 Security Factor rather than the application of a 1.0 Security Factor. This proposal will apply a 1.0 Security Factor in that situation.</div></div>			
<div><div></div><div></div></div>	<div><div>This Draft Final Modification Report has been prepared in accordance with the terms of CMP320. An electronic version of this document and all other CMP320 related documentation can be found on the National Grid ESO website via the following link:</div><div><a href="https://www.nationalgrideso.com/codes/connection-and-use-system-code-cusc/modifications/island-mits-radial-link-security-factor">https://www.nationalgrideso.com/codes/connection-and-use-system-code-cusc/modifications/island-mits-radial-link-security-factor</a></div><div>The purpose of this document is to assist the CUSC Panel in making its recommendation on whether to implement CMP320.</div></div>		
<div><div></div><div></div></div>	<div><div>High Impact:</div><div>Island based Generation</div></div>		
<div><div></div><div></div></div>	<div><div>Low Impact:</div><div>Non-Island based Users</div></div>		
<div><div></div><div></div></div>	<div><div>The Workgroup concludes:</div><div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>The Workgroup concluded unanimously that the Original better facilitated the Applicable CUSC Objectives than the baseline;</div><div>The Workgroup by majority concluded that both WACM1 and WACM2 better facilitated the Applicable CUSC Objectives than the baseline. 2 Workgroup members abstained from this vote;</div><div>The Workgroup by majority that both WACM1 (5 out of 8 votes) and WACM2 (5 out of 8 votes) better facilitated the Applicable CUSC Objectives than the Original. 2 Workgroup members abstained from this vote; and</div><div>4 Workgroup Members voted that WACM1 was the best option, 4 votes were also cast for WACM2 and 2 votes were cast for the Original.</div></div></div>		

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Timetable		
<b>The Code Administrator recommends the following timetable:</b>		
Initial consideration by Workgroup	23 August 2019	
Workgroup Consultation	6 to 27 September 2019	
Workgroup Report presented to Panel	13 December 2019	
Code Administrator Consultation issued to the Industry	17 December 2019	
Code Administrator Consultation closes	20 January 2020	



Any questions?

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Draft Final Modification Report presented to the CUSC Panel	31 January 2020
Submit Final Modification Report to the Authority	12 February 2020
Authority Decision	18 March 2020
Implementation into CUSC	1 April 2021

## 1 About this document

This document is the Draft Final Modification Report that contains the discussion of the Workgroup which formed in August 2019 to assess and develop the proposal, the responses to the Workgroup Consultation which closed on 27 September 2019 and the Workgroup vote held on 5 December 2019. The Panel reviewed the Workgroup Report at their CUSC Panel meeting on 13 December 2019 and agreed that the Workgroup had met its Terms of Reference and that the Workgroup could be discharged.

CMP320 was raised by SSE Generation Ltd and was submitted to the CUSC Modifications Panel for its consideration on 26 July 2019. The Panel decided to send the Proposal to a Workgroup to be developed and assessed against the Applicable CUSC Objectives. On 5 August 2019, the Code Administrator received a request for Urgency from the Proposer, the majority view of the CUSC Panel was the CMP320 does meet the Urgency criteria and should be treated as Urgent. On 2 September 2019, the Code Administrator received the decision on Urgency from the Authority, the Authority concluded that the modification **shouldn't be** treated as urgent.

CMP320 seeks to amend Section 14 of the CUSC to apply a Security Factor of 1.0 (rather than 1.8) where a MITS node is located on an island which, in turn, is connected to the mainland on a single radial circuit.

- Workgroup Vote took place 5 December 2019
  - Workgroup concluded unanimously that the Original better facilitated the Applicable CUSC Objectives than the baseline;
  - The Workgroup by majority concluded that both WACM1 and WACM2 better facilitated the Applicable CUSC Objectives than the baseline. 2 Workgroup members abstained from this vote as they did not consider these to be valid alternatives;
  - The Workgroup by majority that both WACM1 (5 out of 8 votes) and WACM2 (5 out of 8 votes) better facilitated the Applicable CUSC Objectives than the Original. 2 Workgroup members abstained from this vote; and
  - 4 Workgroup Members voted that WACM1 was the best option, 4 votes were also cast for WACM2 and 2 votes were cast for the Original.

### Workgroup Conclusions

The Workgroup vote was held on 5 December 2019. The Workgroup concluded unanimously that the Original better facilitated the Applicable CUSC Objectives than the baseline.

- The Workgroup by majority concluded that both WACM1 and WACM2 better facilitated the Applicable CUSC Objectives than the baseline. 2 Workgroup members abstained from this vote;
- The Workgroup by majority that both WACM1 (5 out of 8 votes) and WACM2 (5 out of 8 votes) better facilitated the Applicable CUSC Objectives than the Original. 2 Workgroup members abstained from this vote; and
- 4 Workgroup Members voted that WACM1 was the best option, 4 votes were also cast for WACM2 and 2 votes were cast for the Original.

Section 2 of this document (Original Proposal) and Section 3 of this document (Proposer's Solution) are sourced directly from the Proposer and any statements or assertions have not been altered or substantiated/supported or refuted by the Workgroup.

Section 4 of this document contains the discussion by the Workgroup on the Proposal and the potential solution.

### **Code Administrator Consultation Responses**

4 responses were received to the Code Administrator Consultation. A summary of the responses can be found in Section 10 of this document.

All 4 respondents believed that the Original facilitated the applicable CUSC objectives better than the Baseline. 2 respondents believed that WACM1 facilitated the applicable CUSC objectives better than the Baseline and 3 respondents believed that WACM2 facilitated the applicable CUSC objectives better than the Baseline. The full responses can be located in Annex 9.

This Draft Final Modification Report has been prepared in accordance with the terms of the CUSC. An electronic copy can be found on the National Grid ESO's Website:

<https://www.nationalgrideso.com/codes/connection-and-use-system-code-cusc/modifications/island-mits-radial-link-security-factor>

## **2 Terms of Reference**

The CUSC Panel detailed in the Terms of Reference the scope of work for the CMP320 Workgroup and the specific areas that the Workgroup should consider. The table below details these specific areas and where the Workgroup have covered them. The full Terms of Reference can be found in Annex 1.

**Table 1: CMP320 Terms of Reference**

Specific Area	Location in the report
a) The extent to which the MITS connection is financially firm	Section 4
b) Consider the origin of the local circuit security factor and whether those principles need to be considered within the Modification	Section 4

c) Consider impacts on and interactions with SQSS	Section 4
d) Objective criteria for pulling specific circuits out of the treatment of 1.8 security factor and whether or not it impacts on the calculation of the 1.8 security factor	Section 4
e) Ensuring proposed solution doesn't introduce undue discrimination	Section 4

### 3 Original Proposal

***Section 2 (Original Proposal) is sourced directly from the Proposer and any statements or assertions have not been altered or substantiated/supported or refuted by the Workgroup.***

***Section 4 of the Workgroup contains the discussion by the Workgroup on the Proposal and the potential solution.***

**The full Modification Proposal is set out at:**

<https://www.nationalgrideso.com/codes/connection-and-use-system-code-cusc/modifications/island-mits-radial-link-security-factor>

Please click on “Urgency” tab for most current Modification Proposal.

### Defect

As noted in CMP213 Final Modification Report (Volume 1)<sup>1</sup> at paragraph 6.29 “In the baseline charging methodology, the security factor for circuits classed as “wider” in the transmission network is 1.8. This is multiplied by the zonal location tariff for generators to reflect redundancy in the transmission system. However, as many island connection transmission designs are radial spurs and therefore are connected by a single radial circuit to the mainland, there is effectively no redundancy in the transmission circuit.”

The definition of MITS means that it is possible, in certain circumstances beyond the control of the User, that a MITS node<sup>2</sup> maybe created on an Island (served by a single

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<sup>1</sup> <https://www.nationalgrideso.com/document/6246/download>

<sup>2</sup> A node with either (i) more than 4 Transmission Circuits; or (ii) 2 or more Transmission Circuits and a Grid Supply Point.

radial<sup>3</sup> subsea circuit to the mainland). This results in the single circuit being classified as part of the 'wider' system for which a Security Factor of 1.8 is applied; even though only a single circuit (1.0) situation actually arises. This would result in non-cost reflective charges being applied to Generation based on the relevant Island.

## What

The application of the Security Factor where a MITS node is located on an island which, in turn, is connected to the mainland on a single radial subsea circuit needs to be changed from 1.8 to 1.0 if the relevant circumstances apply.

## Why

The change needs to be made to rectify the situation where a Security Factor of 1.8 is applied as part of the current baseline on Islands served by a single radial circuit where the level of security delivered is 1.0 instead of the 1.8 that the Security Factor applies in terms of charges. This results in relevant charges paid by Generators on those Islands that are 80% more expensive than is cost reflective. This situation is expected to arise in the near future as transmission connections and MITS nodes extend to the Scottish Island groupings of the Western Isles, Orkney and Shetland. This matter was explored by NGE SO, the relevant TO and relevant stakeholders at an event on 2 May 2019.

## How

Amend Section 14 of the CUSC to apply a Security Factor of 1.0 (rather than 1.8) where a MITS node is located on an island which, in turn, is connected to the mainland on a single radial subsea circuit.

## 4 Proposer's Solution

***Section 3 (Proposer's solution) is sourced directly from the Proposer and any statements or assertions have not been altered or substantiated/supported or refuted by the Workgroup.***

***Section 4 of the Workgroup contains the discussion by the Workgroup on the Proposal and the potential solution.***

Amend Section 14 of the CUSC to apply a Security Factor of 1.0 (rather than 1.8) where a MITS node is located on an island which, in turn, is connected to the mainland on a single radial circuit.

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<sup>3</sup> Radial circuits are single 'spurs' that link generation and/or demand in one location to the wider interconnected transmission network.

The CUSC will be impacted by this change resulting in a change to the calculation of TNUoS charging by National Grid ESO. We do not expect there to be any significant system impacts from this change.

### **Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?**

This modification is not expected to impact any ongoing SCRs or other significant industry change projects.

### **Consumer Impacts**

This change will lead to more cost reflective charges that, in turn, will result in a more competitive market in terms of generation, which will lead to lower costs for end consumers.

## **5 Workgroup Discussion**

The Workgroup met once on 23 August 2019.

Proposer provided an overview of the Modification Proposal and stated:

- Proposed solution is to apply a security factor of 1.0 rather than 1.8 where a MITS node is located on an island which, in turn, is connected to the mainland on a single radial circuit;
- Current arrangements for Remote Island generation are discriminatory and not cost reflective; and
- CMP320 (by incorporating Remote Island generation) builds on the principles approved by GB-ECM11.

### Terms of Reference

Workgroup were happy with the Terms of Reference agreed at Panel on 26 July 2019

Workgroup then addressed each of these Terms of Reference in turn:

#### a) The extent to which the MITS connection is financially firm

- Anyone who has restrictions on availability will have a Bilateral Agreement, which will set out such restrictions on availability and defines which circuits are impacted and the associated conditions that are applied to those circuits. A Transmission Related Agreement recovers any costs triggered by taking bids in the Balancing Mechanism where the Generator fails to reduce its output as detailed in the Bilateral Agreement. The workgroup was informed that any generators connected to such MITS connections on the Remote Islands would not have financially firm connections and indeed would have such restrictions in their Bilateral Agreements, as would also be the case for local circuits with similar restrictions on availability.



b) Consider the origin of the local circuit security factor and whether those principles need to be considered within the Modification

- It was noted that CMP320 (by incorporating Remote Island generation) simply builds on the principles approved by GBECM-11 “Charging arrangements for generator local assets”<sup>4</sup>. This is because GBECM-11 proposed a lower level of security factor to be applied as individual generators are fully exposed to the consequence of access restrictions that result from their design variations. On the basis that these restrictions applied equally to the Remote Island Connections for the network connecting the island MITS to the mainland MITS, it therefore appeared appropriate to apply the same principle.

c) Consider impacts on and interactions with SQSS

- The National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS) assumes that a Transmission Owner will build to full redundancy. However, when applying to the National Grid ESO for a connection, Generators can choose a Design Variation, which is a connection which is non-compliant with the NETS SQSS. System studies would identify which parts of that solution are not compliant with NETS SQSS and restrictions on availability would be set out in the Generator’s Bilateral Agreement with National Grid ESO.
- It was noted that in this case, it is not necessarily the choice of the Generators that the NETS is not compliant with the NETS SQSS – it is the choice of the Transmission Owner supported by the Cost Benefit Analysis.

d) Objective criteria for pulling specific circuits out of the treatment of 1.8 security factor and whether or not it impacts on the calculation of the 1.8 security factor

- The question considered by the Workgroup is where a circuit that has no redundancy has a Locational Onshore Security Factor of 1.0, how can we be sure that there is no double counting in calculation of 1.8 for the rest of the circuits.
- The Workgroup examined the wording in CUSC Section 14.15.90 (replicated below) to ascertain if the wording was clear enough that there would be no double counting. The Workgroup agreed that it could be read either way.

*“The Locational onshore security factor derived for 2010/11 is 1.8 and is based on an average from a number of sites conducted by The Company to account for future network developments. The security factor is reviewed for each price control period and fixed for the duration”*

- Furthermore, a Workgroup member asked National Grid ESO to confirm the process they follow now. National Grid ESO confirmed that the local circuits are excluded from the calculation of 1.8 and therefore it was agreed that additional legal text needs to be added to make it clear that if any circuit is subject to its own security factor then this circuit would not be used in the calculation of the Locational onshore security factor. The legal text agreed is set out in Section 3 of this Workgroup report.

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<sup>4</sup> <https://www.ofgem.gov.uk/ofgem-publications/52524/151208-ecm-11-decision-letter.pdf>



e) Ensuring proposed solution doesn't introduce undue discrimination

- Proposer confirmed that they are seeking to address the issue for Remote Island generation; however, workgroup members challenged this as potentially discriminatory in relation to other sites with similar arrangements and believed that the solution (and legal text) should look at describing the characteristics of the connection arrangement and the transmission network, rather than being remote island specific which could be seen to be based around geographic considerations as well.
- Proposer confirmed that this broader approach wasn't proposed originally for fear of unforeseen consequences and considers that this is a discrete issue specifically affecting island generation; however, they noted from discussions that broadening could appear to make it more acceptable.
- The Workgroup then debated a number of network circuit topographies (set out in Annex 2) to ascertain which should result in a security factor of 1 being applied to the single circuit. After informed discussion, Workgroup agreed that the new arrangements should apply to the single circuits in Scenarios A to B inclusive (shown in red on the diagrams). The Workgroup then updated and agreed draft legal text to support this, which is set out in Annex 3 of this Workgroup Report.
- Since the workgroup meeting on 23 August, the Proposer confirmed that they would like to leave their Original proposal unchanged to remain focused only on island single circuit situations (as shown in red in scenarios A and C in Annex 2).

## 6 Workgroup Consultation responses

Eleven responses were received to the Workgroup Consultation which closed on the 27 September 2019. One of these responses is to be treated as confidential at respondent's request. The remaining ten responses are set out in Annex 4 of this Workgroup Report.

Workgroup Consultation respondents were largely supportive of the modification and the majority of respondents believed that:

- The Original better facilitated the CUSC Objectives than the Baseline;
- The Workgroup's Terms of Reference had been met;
- The proposed legal text was suitable for the proposed solution; and
- Solution should be specific to remote island generation

However, there were a minority who did not agree with the above view

- One respondent believed that the Original would not better facilitate the CUSC Objectives than the Baseline as they believed that the current proposed legal text does not address the main purpose for the Modification which the respondent stated is "to ensure that single circuit radial links are not exposed to non-cost reflective charging if they become part of the MITS";

- Two respondents proposed small changes to the existing proposed legal text whilst two other respondents did not believe the current legal text was fit for purpose and one of these has proposed a Workgroup Consultation Alternative Requests for the Workgroup to consider; and
- Three respondents were keen that any solution should not be limited to remote island generation and should be extended the solution to cover all connections with the same characteristics. One of these respondents has proposed a Workgroup Consultation Alternative Request for the Workgroup to consider.

As noted above, two Workgroup Consultation Alternative Requests were proposed and at the Workgroup Meetings on 8 October and 8 November, the Workgroup explored these requests, which can be summarised as follows:

- Redefining what a MITS node is in terms of remote islands connected by a single circuit, and to reclassify them as 'local circuits, thus removing the need to amend the wider TNUoS charging methodology; and
- Not limiting the solution to remote island generation and extending the solution to cover all connections with the same characteristics based on the view that otherwise this is discriminatory to onshore generation and there is an increased risk of the Original being rejected by the Authority with no viable alternative option to consider.

**a) Redefining what a MITS node is in terms of remote islands connected by a single circuit, and to reclassify them as 'local circuits, thus removing the need to amend the wider TNUoS charging methodology**

In the view of the proposer of this alternative, the Original proposal appears to be restricted to a solution to a single circuit defect and believes that the Proposer's solution is to address a problem that may only endure for a short time until the second link is built and therefore there would be some redundancy. However, another workgroup member argued that CMP320 deals only with the defect of a single radial subsea circuit and does not believe that the situation where there may be more than one subsea circuit(s) would be a valid alternative for CMP320. This is because it would not address the CMP320 defect, but would instead address a different defect, so would be out of scope of CMP320.

However, the view that this would address a different defect was not shared by some Workgroup members who argued that this proposed that this was simply a different way of addressing the defect albeit the majority of the Workgroup recognised the cross code impacts e.g. MITS Nodes are also defined in the NETS SQSS and Grid Code and potential unintended consequences.

On balance, the Chair felt this was a valid alternative and asked the Workgroup to vote as to whether or not this was a valid alternative. The Workgroup by majority voted that this was a valid alternative and this will henceforth be known as WACM1 and is set out in Annex 6 of this Workgroup Report.

However, the Workgroup also agreed that that further analysis needs to undertaken by National ESO, prior to the Workgroup Vote, to summarise in plain English the analysis done as part of GBECM-11, Project Transmit and the current 5 year TNUoS forecast. Results of this analysis can be found in Annex 8 of this Workgroup Report. A Workgroup Member noted that local charges were originally created, under charging change proposal

GBECM11, to deal with situations where generators had opted for design variations under the SQSS, which resulted in local assets which had lower levels of redundancy than would have normally been the case. Therefore, it was deemed more cost reflective to apply a lower value of security factor to these assets than on the basis that redundancy was included. The Workgroup Member questioned whether any issues would be caused within the charging methodology by classifying remote island assets as local network in circumstances where redundancy existed. The National Grid ESO representative confirmed that this had been checked with colleagues in the charging team, and they were unaware of any issues that this would cause.

**b) Not limiting the solution to remote island generation and extending the solution to cover all connections with the same characteristics**

The Proposer and another Workgroup member believed this should be raised as a separate Modification because the defect is clearly limited to remote island generation. They also argued that the Original would not create undue discrimination because it applies to a group of circuits which the baseline CUSC already explicitly treats differently from other circuits and already deals with on a “case by case basis”, so CMP320 Original will simply adjust the way this existing “case by case basis” is calculated. This case by case basis is set out in section 14.15.14 of the CUSC as per below:

*“14.15.14 The circuit expansion factors for **HVDC circuits and AC subsea cables** are determined on a case by case basis using the costs which are specific to individual projects containing **HVDC or AC subsea circuits**” [emphasis added]*

However, this view was not shared by three Workgroup Members who argued that CUSC 8.20.1<sup>5</sup> is clear that any “Workgroup Alternative CUSC Modification can also relate to the issue identified in the CUSC Modification Proposal”. One respondent also read the defect as remote island generation being an example of the defect rather than the defect being worded to be limited to remote island generation. Additionally, a number of Workgroup members noted that without this alternative, Terms of Reference (e) (ensuring proposed solution doesn’t introduce undue discrimination) would be not be fully met.

On balance, the Chair felt this was a valid alternative and asked the Workgroup to vote as to whether or not this was a valid alternative. The Workgroup by majority voted that this was a valid alternative and this will henceforth be known as WACM2 and is set out in Annex 7 of this Workgroup Report.

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<sup>5</sup> 8.20.1 If the CUSC Modifications Panel has decided not to proceed directly to wider consultation (or where the provisions of Paragraph 8.19.5 apply), a Workgroup will be established, or an existing Standing Group identified and actioned, by the CUSC Modifications Panel to assist the CUSC Modifications Panel in evaluating whether a CUSC Modification Proposal better facilitates achieving the Applicable CUSC Objectives **and whether a Workgroup Alternative CUSC Modification(s) would, as compared with the CUSC Modification Proposal, better facilitate achieving the Applicable CUSC Objectives in relation to the issue or defect identified in the CUSC Modification Proposal.....**

## 7 Workgroup Vote

The Workgroup believe that the Terms of Reference have been fulfilled and CMP320 has been fully considered.

The Workgroup met on 5 December 2019 and voted on:

- Whether the Original, WACM1 and WACM2 would better facilitate the Applicable CUSC Objectives than the baseline;
- Whether WACM1 and WACM2 would better facilitate the Applicable CUSC Objectives than the Original; and
- Which option was best overall?

### CMP320 Workgroup Vote

- The Workgroup concluded unanimously that the Original better facilitated the Applicable CUSC Objectives than the baseline;
- The Workgroup by majority concluded that both WACM1 and WACM2 better facilitated the Applicable CUSC Objectives than the baseline. 2 Workgroup members abstained from this vote;
- The Workgroup by majority that both WACM1 (5 out of 8 votes) and WACM2 (5 out of 8 votes) better facilitated the Applicable CUSC Objectives than the Original. 2 Workgroup members abstained from this vote; and
- 4 Workgroup Members voted that WACM1 was the best option, 4 votes were also cast for WACM2 and 2 votes were cast for the Original.

### Vote recording guidelines:

“Y” = Yes

“N” = No

“-” = Neutral

### Vote 1 – does the Original or WACMs facilitate the objectives better than the Baseline?

Workgroup Member	Better facilitates ACO (a)	Better facilitates ACO (b)	Better facilitates ACO (c)	Better facilitates ACO (d)	Better facilitates ACO (e)	Overall (Y/N)
Aaron Priest – SSE Generation Ltd. (Proposer on behalf of Jennifer Geraghty)						
Original	Y	Y	Y	-	-	Y
WACM 1	Abstained from Voting					
WACM 2	Abstained from Voting					
Voting Statement:						
The Original is more cost reflective, so better facilitates effective competition. It also better takes account of developments in in transmission licensees’ transmission						

businesses, because the defect arises from the development of single radial subsea circuit connections to the Scottish islands. Alternatives are not viewed as valid or bona fide. This is because the alternatives go beyond the specific wording of the defect - for the reasons noted in Sections 5 a) and 5 b) of the Workgroup Report. As the alternatives are not viewed as bona fide, it would be inappropriate to cast a vote on them.

John Tindal – SSE Renewables Developments (UK) Ltd

Original	Y	Y	Y	-	-	Y
WACM 1	Abstained from Voting					
WACM 2	Abstained from Voting					

Voting Statement:

### **Original - Better**

Better regarding cost reflectivity because it corrects a defect whereby generators on an island served by a single radial subsea circuit to the mainland, which is classed as a MITS circuit, would have a locational onshore security factor (currently 1.8) applied to the circuit cost, even though only a single circuit, with associated lower security, actually exists. By improving cost reflectivity, it also better facilitates effective competition. It also better takes account of the developments in transmission licensees' transmission businesses because it deals with an emerging situation which did not previously exist in practice.

### **WACM1 - Abstain**

I abstained from this vote because I do not believe that WACM1 is a valid alternative for this modification proposal because it does not address the CMP320 defect, but instead addresses different alleged defects:

- 1) **Does not address the CMP320 defect:** The defect identified by CMP320 is the magnitude of the security factor which is applied in a scenario where there is an island MITS node served by a single radial link. However, by contrast, this alternative proposal would leave the CMP320 defect intact and in place. This is because even with WACM1, an island situation may still arise whereby a subsea radial circuit still became classed as MITS and still had a non-cost reflective security factor (currently 1.8) applied when that level of security did not exist in practice. So the defect identified by CMP320 is not addressed.
- 2) **Outside scope of defect – multiple circuits to an island** - The justification provided for this alternative being better than the Original also relied on it addressing an alleged defect relating to situations where there was more than one circuit connecting to an island. By contrast, the CMP320 defect relates to single radial circuits only and does not identify the scenario of multiple island circuits as a defect.
- 3) **Outside scope of defect – circuits between MITS nodes, both of which are on an island** – A further justification for this alternative was that “It [Original] does not resolve the non-cost reflective charging of generators paying 1.8x charges for Island only circuits that are behind the redundancy ‘bottleneck’ of

the radial subsea link...”. However, CMP320 proposal does not identify this scenario as a defect and the case has not been made that this scenario is actually a defect.

### **WACM2 – Abstain**

I abstained from this vote because I do not believe that WACM2 is a valid alternative for this modification proposal because it addresses alleged defects which are different from that identified by CMP320 proposal:

- 1) **Outside scope of defect - The only difference in effect between WACM2 and Original is that WACM2 has an additional effect beyond the defect identified by CMP320.** WACM2 solution is in effect the same as Original except the only difference is that it extends the effect to capture mainland circuits. By contrast, the CMP320 proposal defect explicitly only relates to island situations.
- 2) **Outside scope of defect - WACM2 does not address a discrimination –** A justification for WACM2 is that it alleges that the Original creates a new discrimination which WACM2 addresses. However, the Original would not create undue discrimination because it applies to a group of circuits which the baseline CUSC already explicitly treats differently from other circuits and already deals with on a “case by case basis”, so CMP320 Original will simply adjust the way this existing “case by case basis” is calculated.

### **Grahame Neale – National Grid ESO**

Original	Y	Y	Y	-	-	Y
WACM 1	Y	Y	Y	-	-	Y
WACM 2	Y	Y	Y	-	-	Y

### **Voting Statement:**

We believe all the options presented as part of CMP320 are better than the baseline as they more accurately align the TNUoS charges (that remote island generators pay) with the ‘level of service’ these generators receive from the Transmission System in the instances that there is only ‘one route’ between the island and the mainland.

### **Paul Jones – Uniper Energy**

Original	Y	Y	Y	-	-	Y
WACM 1	Y	Y	Y	-	-	Y
WACM 2	Y	Y	Y	-	-	Y

### **Voting Statement:**

The original would ensure more appropriate application of a security factor to the affected circuits, thereby improving cost reflectivity and competition. However, the approach to base it on whether the affected nodes are on remote islands is not strictly relevant to whether different treatment should be applied, compared with relevantly similar assets elsewhere. Therefore, arguably this approach would be discriminatory in

these instances

WACM1 - Classifying nodes on remote islands as not being MITS would be another approach for ensuring more appropriate application of a security factor to the affected circuits in these circumstances. There is a concern that it could be used in instances when it would be inappropriate to consider the assets as local ones. This risk is created mainly as the only consideration determining whether this classification is applied is whether the node is on a remote island, not the configuration of the network assets. Therefore, concerns about discrimination are perhaps more pronounced than with the original proposal.

WACM2 – This approach is similar to the original, but seeks to remove the concerns associated with discrimination as it is not defined in respect of geography.

Paul Mott – EDF Energy Limited

Original	N	Y	Y	-	N	Y
WACM 1	Y	Y	Y	-	Y	Y
WACM 2	Y	Y	Y	-	-	Y

Voting Statement:

**Vote 1 – does the original or WACMs facilitate the objectives better than the Baseline?**

CMP320 original rectifies the situation where a Security Factor of 1.8 is applied as part of the current baseline on Islands served by a single radial circuit where the level of security delivered is 1.0 instead of the 1.8 that the Security Factor applies in terms of charges. This results in relevant charges paid by Generators on those Islands that are 80% more expensive than is cost reflective.

However, CMP320 original doesn't include the comparable situation – the same defect, in a different location – onshore, which is picked up by WACM2. Insofar as CMP320 original doesn't include the comparable situation onshore, it doesn't take forward CAO(a) (competition), in fact it impedes that one.

WACM1 ingeniously takes a simpler approach with less risk of unintended consequences, so it better facilitates (e) promoting efficiency in the implementation and administration of the CUSC arrangements.

**Vote 2– where one or more WACMs exist, does each WACM better facilitates the Applicable CUSC Objectives than the Original Modification Proposal?**

**WACM 1**

Yes - I agree that this WACM 1 takes a simpler approach with less risk of unintended consequences, so (e) Promoting efficiency in the implementation and administration of the CUSC arrangements is much better facilitated by WACM1 than by the Original Modification Proposal. Scottish islands aren't really well tied in to the mainland and the idea of a MITS node being created there breaches some idea of common sense. The rules look a little wrong in this instance for MITS nodes.

**WACM 2**

Yes - CMP320 original doesn't include the comparable situation – the same defect, in



a different location – onshore, which is picked up by WACM2. Insofar as CMP320 original doesn't include the comparable situation onshore, it doesn't take forward CAO(a) (competition), in fact it impedes that one.

#### Simon Swiatek– BayWa RE

Original	Y	Y	Y	-	-	Y
WACM 1	N	N	N	-	-	N
WACM 2	Y	Y	Y	-	-	Y

#### Voting Statement:

The original does address the defect of a security factor of 1.8 being applied where this security factor does not reflect the security of the connection experienced by the generator(s).

WACM2 goes further and addresses this defect in non-island locations. We think both facilitate competition (albeit the original only applies for islands).

WACM1 would prohibit there ever being a MITS on any remote island. We do not think this is a good outcome. It is possible that an extensive transmission system (including MITS nodes) could be built on an island connected to the mainland via a single circuit HVDC link. In this circumstance generators should pay local circuit charges to connect to the on-island MITS but a locational security factor of 1.0 should be applied to the single circuit HVDC link.

#### Lizzie Foot – Hoolan Energy Limited

Original	Y	Y	Y	Y	Y	Y
WACM 1	Y	Y	Y	Y	Y	Y
WACM 2	Y	Y	Y	Y	Y	Y

#### Voting Statement:

When compared to the Baseline: the Original, WACM 1 and WCAM 2 all better facilitate the applicable CUSC objectives than the Baseline by removing the material economic distortion in the calculation of remote island TNUoS.

#### Alex Savvides – Statkraft

Original	Y	Y	-	Y	-	Y
WACM 1	Y	Y	-	Y	Y	Y
WACM 2	Y	Y	-	Y	-	Y

#### Voting Statement:

**Vote 1 – does the original or WACMs facilitate the objectives better than the Baseline?**

The baseline results in a large over-recovery of costs due to a 1.8 security factor being

applied to the remote island transmission links, where there is in fact no redundancy. The original proposal and both WACMs correct this, resulting in more cost reflective charging which enables more effective competition (an improvement against objective a and b).

The remote islands links are to facilitate predominately renewable generation. The baseline appears to contravene the principals of EU directive 2009/72/EC which requires non-discriminatory access and tariffs for renewable energy generators, consequently the original proposal and both WACMs are an improvement against objective d.

WACM 1 is the most efficient way to achieve this, and so is marked as an improvement against objective e.

All proposals under the modification are neutral with respect to objective c.

**Vote 2– where one or more WACMs exist, does each WACM better facilitates the Applicable CUSC Objectives than the Original Modification Proposal?**

## **WACM 1**

In practice the transmission links will connect a large volume of generation from the remote islands to serve demand on the mainland. Although they will solve security of supply issues for users on remote islands, they will predominately function much more closely to a generation circuit with small amount of demand connected than a main integrated part of a transmission system.

The scale and variation of costs expected are also much greater than any difference between or within the existing TNUoS zones.

Under WACM1 in Orkney Costa Head and Hesta Head charges differ by £10/KW, this is more cost reflective than under the original proposal where they will receive the same charge. In this respect, WACM1 better fulfils objectives a) and b).

There is a material possibility that cables may be sized too small for all the low carbon generation that eventually wants to connect, as a result a small amount of additional in-phase low carbon generation or other out of phase low carbon generation may share the connection. Under this situation, the original proposal will result in over recovery of costs, with WACM1 the onshore local circuit counter correction factor methodology will ensure the individual charges reduce with sharing, which is more cost reflective. In this respect, WACM1 better fulfils objectives a) and b).

The mechanism to achieve the reduced security factor in the original proposal is a more complicated change both conceptually and with regard to the required CUSC text alteration. It could also have some complications in future when calculations are completed to derive an updated global onshore locational security factor. In this respect, WACM 1 better facilitates objective e).

Some objections were raised that defining non-MITs nodes by geography rather than network topography could be considered discriminatory. However, the remote island links are fundamentally different in cost, scale and technology to any other similar radial link that does or could in future exist on the mainland. Under the CUSC rules they would have to form their own TNUoS zones. In addition, subsea links are *already* treated differently from mainland cables, as they have their own bespoke expansion factors. For these reasons it is not necessary (or appropriate) for WACM1 to be

generalised to mainland situations where areas of the MITs have single circuit radial links – these situations may function much more as an integral part of a main integrated transmission system.

Dennis Gowland – Fairwind Orkney Ltd.						
Original	Y	Y	Y	-	-	Y
WACM 1	Y	Y	Y	-	-	Y
WACM 2	Y	Y	Y	-	-	Y
<p>Voting Statement:</p> <p>The Original and both Alternatives set out to correct the defect of the default value of 1.8 (SF) levied against single links with no redundancy. All are, therefore, better than the baseline.</p> <p>The Original and WACM2 are very similar and there are merits and potential drawbacks in each case – Original is specific to Subsea Cables, whilst WACM2 seeks to make the application generic to any similar circuit in the Transmission Network.</p> <p>Potential drawbacks for the Original are that the mod may seem to be unduly discriminatory and for WACM2 that unintended consequences or complications of part redundancy may accrue. On balance, and because the particular Island links are already identified in the CUSC section 14(HVDC and AC Subsea Cables), it makes sense to clarify their use in the charging methodology in a simple modification. I think that there is merit in WACM2 going forward together with the Original to the Panel.</p> <p>WACM1 (non-application of MITS status to Remote Island circuits) has a Prima Facie case to address the defect by a determination that Remote Island radial links are always 'Local' where the Local Security Factor is already prescribed in the CUSC as 1.0. Analysis provided by the Proposer of this Alternative and from ESO indicates that the impacts of Island generators at MITS nodes may be becoming such that there is likely to be a net increase in costs compared to being classed as a Local Circuit. The direction of travel of proposed charging modifications resulting from current Ofgem reviews seem to indicate that the only way off effectively sharing with other types of generation is to use the CCF (CUSC 14.15.92) which is only applicable to Local Circuits.</p> <p>Taken overall, I think WACM1 may be the best – though I have some reservations that the modification may be a little previous and could be revisited as a Mod in its own right as other matters begin to clarify.</p>						

Robert Longden – Cornwall Insight Ltd.						
Original	Y	Y	-	-	-	Y
WACM 1	N	N	-	-	-	N

WACM 2	Y	Y	-	-	-	Y
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Voting Statement:

The Original “fixes” the defect but is specific. WACM 1 is not robust and there is no justification for changing the use of a MITS node – it is a “patch”. WACM2 provides a generic solution to the issue based on network topography rather than geography and is the correct way to address the issue

**Vote 2– where one or more WACMs exist, does each WACM better facilitates the Applicable CUSC Objectives than the Original Modification Proposal?**

Workgroup Member	WACM1 better than Original Yes/No	WACM2 better than Original Yes/No
Aaron Priest – SSE Generation Ltd. (Proposer on behalf of Jennifer Geraghty)	Abstained from Voting	Abstained from Voting
John Tindal – SSE Renewables Developments (UK) Ltd	Abstained from Voting	Abstained from Voting
Grahame Neale – National Grid ESO	Yes	Yes
Paul Jones – Uniper Energy	No	Yes
Paul Mott – EDF Energy Limited	Yes	Yes
Simon Swiatek– BayWa RE	No	Yes
Lizzie Foot – Hoolan Energy Limited	Yes	No
Alex Savvides – Statkraft	Yes	Yes
Dennis Gowland – Fairwind Orkney Ltd.	Yes	Neutral
Robert Longden – Cornwall Insight Ltd.	No	Yes

**Vote 3– Which option is the best? (Baseline, Proposer solution (Original Proposal), WACM1 or WACM2)**

Workgroup Member	BEST Option?
Aaron Priest – SSE Generation Ltd. (Proposer on behalf of Jennifer Geraghty)	Original
John Tindal – SSE Renewables Developments (UK) Ltd	Original

Grahame Neale – National Grid ESO	WACM1
Paul Jones – Uniper Energy	WACM2
Paul Mott – EDF Energy Limited	WACM2
Simon Swiatek – BayWa RE	WACM2
Lizzie Foot – Hoolan Energy Limited	WACM1
Alex Savvides – Statkraft	WACM1
Dennis Gowland – Fairwind Orkney Ltd.	WACM1
Robert Longden – Cornwall Insight Ltd.	WACM2

## 8 Relevant Objectives

This section contains the Proposer's view of the relevant applicable CUSC objectives.

### Impact of the modification on the Applicable CUSC Objectives (Charging):

Relevant Objective	Identified impact
(a) That compliance with the use of system charging methodology facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity;	Positive
(b) That compliance with the use of system charging methodology results in charges which reflect, as far as is reasonably practicable, the costs (excluding any payments between transmission licensees which are made under and accordance with the STC) incurred by transmission licensees in their transmission businesses and which are compatible with standard licence condition C26 requirements of a connect and manage connection);	Positive
(c) That, so far as is consistent with sub-paragraphs (a) and (b), the use of system charging methodology, as far as is reasonably practicable, properly takes account of the developments in transmission licensees' transmission businesses;	Positive
(d) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency. These are defined within the National Grid Electricity Transmission plc Licence under Standard Condition C10, paragraph 1 *; and	None

(e) Promoting efficiency in the implementation and administration of the CUSC arrangements.	None
*Objective (d) refers specifically to European Regulation 2009/714/EC. Reference to the Agency is to the Agency for the Cooperation of Energy Regulators (ACER).	

This Modification will ensure that Transmission Network Use of System (TNUoS) charges for Islands which have a MITS node, but are connected to the mainland transmission system via a single radial circuit, are more cost reflective than under the current CUSC baseline. This will better facilitate Applicable Objective (b). In turn, by having more cost reflective charges, competition between generators will be enhanced, thus better facilitating Applicable Objective (a). Finally, this change will bring the baseline CUSC up to date as the transmission system evolves with the introduction of single radial spurs and MITS nodes to Island situation, which will better facilitate Applicable Objective (c).

## 9 Implementation

Workgroup propose implementation for Original, WACM1 or WACM2 to be applicable from 1 April 2021 assuming Ofgem decision by 1 October 2020.

## 10 Code Administrator Consultation Response Summary

The Code Administrator Consultation ran for 20 working days from 17 December 2019 to 5pm on 20 January 2020 with 4 responses received (from Proposer of Original, Proposer of WACM2, ESO, Highlands and Islands). There were a range of views expressed as to whether each of the Original, WACM1 and WACM2 facilitated the applicable CUSC objectives better than the Baseline. In summary:

- All 4 respondents believed that the Original facilitated the applicable CUSC objectives better than the Baseline. The Proposer of the Original expressed a preference for the Original as the best option and reiterated their previously expressed view that neither WACM1 nor WACM2 are valid alternatives;
- 2 respondents believed that WACM1 facilitated the applicable CUSC objectives better than the Baseline. Both of these respondents expressed a preference for WACM1 as the best option. 1 respondent concluded that *“to rigidly state that a MITS node cannot come to exist on an island when it otherwise meets the criterion, without consideration as to the configuration of the network assets, seems to be geographically-discriminatory for no clear reason”*;
- 3 respondents believed that WACM2 facilitated the applicable CUSC objectives better than the Baseline. The Proposer of WACM2 expressed a preference for WACM2 as the best option as the Original is limited to remote island generation situations; and
- There were no proposed changes to legal text.



## 11 Impacts

### Costs

Code Administrator costs	
Total Code Administrator Costs	<b>£7,260</b>

Industry costs	
Resource costs	<b>£13,613</b> – 2 Consultations <ul style="list-style-type: none"><li>• 4 Workgroup meetings</li><li>• 11 Workgroup members</li><li>• 1.5 man days effort per consultation response</li><li>• 7.5 consultation respondents</li></ul>
Total Industry Costs	<b>£53,543</b>

## Annex 1 Terms of Reference

This is the Terms of Reference agreed at the CUSC Panel on 26 July 2019.

## Annex 2 Network Circuit Topographies

These are the network circuit topographies discussed by the Workgroup to ascertain which best represented the situation we are trying to resolve.

## Annex 3 Legal Text

This is the proposed legal text changes for the Original Proposal, WACM1 and WACM2.

## Annex 4 Workgroup Attendance Log

Name	Organisation	Role	23/08/2019	08/10/2019	08/11/2019	05/12/2019
Rob Marshall	Code Administrator, National Grid ESO	Chair	Attended	Did not attend	Did not attend	Did not attend
Paul Mullen	Code Administrator, National Grid ESO	Technical Secretary	Attended	Attended as Chair and Technical Secretary	Attended as Chair and Technical Secretary (via webex)	Attended as Chair and Technical Secretary (via webex)
Grahame Neale	National Grid ESO	Workgroup member	Attended	Attended	Attended (via webex)	Attended
Jennifer Geraghty	SSE Generation Ltd.	Workgroup member/Proposer	Attended (via webex)	Did not attend	Attended (via webex)	Did not attend
John Tindal	SSE Renewables Developments (UK) Ltd	Workgroup member	Attended	Attended	Attended (via webex)	Attended (via webex)
Paul Mott	EDF Energy Limited	Workgroup member	Attended (via webex – part meeting)	Attended	Attended (via webex)	Attended (via webex)
Guy Nicholson	Statkraft UK Ltd.	Workgroup member	Did not attend	Did not attend	Attended (via webex)	Did not attend
Alex Savvides	Statkraft UK Ltd.	Workgroup member (Alternate to Guy Nicholson)	Did not attend	Attended	Attended (via webex)	Attended (via webex)
Robert Longden	Cornwall Insight Ltd	Workgroup member	Attended (via webex)	Did not attend	Attended (via webex)	Attended (via webex)

Paul Jones	Uniper Energy	Workgroup member	Attended	Attended	Attended (via webex)	Attended
Simon Swiatek	BayWa RE	Workgroup member	Attended (via webex)	Attended (via webex)	Attended (via webex)	Did not attend
Lizzie Foot	Hoolan Energy Limited	Workgroup member	Did not attend	Attended	Attended (via webex)	Attended (via webex)
Alan Knight	Hoolan Energy Limited	Workgroup member (Alternate to Lizzie Foot)	Attended (via webex)	Did not attend	Did not attend	Did not attend
Dennis Gowland	Fairwind Orkney Ltd	Workgroup member	Attended (via webex)	Attended	Attended (via webex)	Attended (via webex)
Aaron Priest	Viking Energy Windfarm LLP	Observer	Attended (via webex)	Attended (via webex as Proposer)	Did not attend	Attended (via webex as Proposer)

## Annex 5 Workgroup Consultation Responses

This sets out the Workgroup Consultation Responses received as part of the Workgroup Consultation which ran from 6 September 2019 to 5pm on 27 September 2019.

## Annex 6 Workgroup Alternative Consultation Modification – WACM1

This sets out the Workgroup Alternative Consultation Modification (WACM1).

## Annex 7 Workgroup Alternative Consultation Modification – WACM2

This sets out the Workgroup Alternative Consultation Modification (WACM2).

## Annex 8 WACM1 Analysis

This sets out further analysis for WACM1 to assist Workgroup Members in their decision on the merits of WACM1 at the Workgroup Vote.

## Annex 9 Code Administrator Consultation Responses

This sets out the Code Administrator Consultation Responses received as part of the Code Administrator Consultation which ran from 17 December 2019 to 5pm on 20 January 2020.