

Workgroup Consultation Response Proforma**CMP315:** TNUoS Review of the expansion constant and the elements of the transmission system charged for and**CMP375:** Enduring Expansion Constant & Expansion Factor Review

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses to cusc.team@nationalgrideso.com by **5pm on 17 May 2022**. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration.

If you have any queries on the content of this consultation, please contact Paul Mullen Paul.j.mullen@nationalgrideso.com or cusc.team@nationalgrideso.com

Respondent details	Please enter your details
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I wish my response to be:

(Please mark the relevant box)

☒ Non-Confidential

☐ Confidential

Note: A confidential response will be disclosed to the Authority in full but, unless agreed otherwise, will not be shared with the Panel or the industry and may therefore not influence the debate to the same extent as a non-confidential response.

For reference the Applicable CUSC (charging) Objectives are:

- 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;*
- 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);*
- 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;*

- d. Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency *; and*
- e. Promoting efficiency in the implementation and administration of the system charging methodology.*

**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).*

Please express your views in the right-hand side of the table below, including your rationale.

Standard Workgroup Consultation questions								
1	Do you believe that the CMP315 Original Proposal better facilitates the Applicable Objectives?	<p>Mark the Objectives which you believe each solution better facilitates:</p> <table border="1"> <tr> <td>Original</td> <td><input type="checkbox"/>A</td> <td><input type="checkbox"/>B</td> <td><input type="checkbox"/>C</td> <td><input type="checkbox"/>D</td> <td><input type="checkbox"/>E</td> </tr> </table> <p>CMP315 seeks to reflect existing network costs in the calculation of the expansion constant (EC) and expansion factors (EF). Including spare capacity in the calculation changes a core principle of the existing methodology that locational charges should reflect the minimum expansion cost in accordance with applicable standards. This change in principle would sharpen locational charges in manner that is not reflective of efficient expansion of the network and therefore does not better facilitate any of the Applicable Objectives.</p>	Original	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D	<input type="checkbox"/> E
Original	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D	<input type="checkbox"/> E			
2	Do you believe that the CMP375 Original Proposal better facilitates the Applicable Objectives?	<p>Mark the Objectives which you believe each solution better facilitates:</p> <table border="1"> <tr> <td>Original</td> <td><input checked="" type="checkbox"/>A</td> <td><input checked="" type="checkbox"/>B</td> <td><input checked="" type="checkbox"/>C</td> <td><input checked="" type="checkbox"/>D</td> <td><input checked="" type="checkbox"/>E</td> </tr> </table> <p>CMP375 seeks to change the inputs for calculation of the EC and EFs to reflect a broader range of expansion works. This approach has the potential to improve cost-reflectivity and better facilitate the Applicable Objectives if the additional works and derivation of associated expansion costs reflect the cost of long term network <u>expansion</u>.</p> <p>However, the apparent lack of a rigorous rationale or data for assessing the scope of additional works or the derivation of the EC and EFs means that it is not possible to determine whether the proposal will ultimately better facilitate the Applicable Objectives. Given the limited time to agree the rationale, dataset and EC/EF calculation method we are concerned that implementing another temporary solution in April 2023 ahead of the methodological outcome of TNUoS Task Force may create significant uncertainty for only short-term benefit.</p> <p>We therefore believe that the merits of simply extending the status quo (i.e. the CMP353 holding position) pending the outcome of the TNUoS Task Force should be seriously considered. In that case the valuable work undertaken by the workgroup could be subsumed into the Task Force's more holistic remit..</p>	Original	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> D	<input checked="" type="checkbox"/> E
Original	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> D	<input checked="" type="checkbox"/> E			
3	Do you support the proposed	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						

	implementation approach?	CMP375, and the LCP approach in particular, has the potential to update the EC methodology to make it more reflective of realistic expansion costs. The LCP approach of allocating non-circuit build costs to actual circuits is more rational and reflective of reality and more likely to avoid unexpected and non-reflective distortions in charges, as further described in response to Q11.
4	Do you have any other comments?	<p>The lack of data in the consultation makes it difficult to assess the impact of the proposed changes.</p> <p>It is essential for delivery of net zero that any changes to locational charges foster economically efficient network development. A CMP375 modification would at best be an improved 'sticking-plaster' ahead of the enduring solution to be established by the TNUoS Task Force.</p> <p>Delays to the release of the terms of reference for the TNUoS Task Force means that it is impossible to assess which (if any) aspects of this code modification may be revisited or subsumed once the taskforces commence. Although we are mindful that this is not within the gift of the workgroup to solve, we still wish to highlight the challenge this presents.</p> <p>In light of the lack of available data, the very substantial uncertainties associated with possible outcomes of the proposal and the limited time available to agree and implement a change in April 2023 we believe that it may be better to extend the holding position of CMP353 than to apply another imperfect, non-enduring arrangement ahead of outcome of the TNUoS Task Force.</p> <p>We would also like to highlight that the consultation doesn't make any mention of HVDC circuits, which are likely to dominate expansion costs in Scotland over the next 10-15 years. Although HVDC expansion costs are insensitive to the EC it is worth considering the likely impact of including cheaper reinforcements and life extension works in the derivation of the EC and EFs. The limited opportunities to build new onshore overhead lines means that subsea HVDC circuits have displaced onshore overhead line circuits as the primary means of expanding north-south network capacity. Effectively HVDC links are becoming the dominant tool for network capacity expansion and have become the new "new build". This displacement of network expansion from onshore overhead lines to offshore cables with project-specific EFs means that the cost of expensive offshore expansion is not reflected back into the EC. If the proposed changes are implemented then it is likely that the EC and associated onshore circuit EFs will tend to be moderated by an</p>

		<p>increasing predominance of cheaper reinforcements and life extension works, while the HVDC expansion costs will continue to be fully reflective of their new build cost (there are few, if any, opportunities to reinforce or extend the life of HVDC links). This could result in an increasing HVDC EF and higher tariffs in Scotland, dominated by those high EFs. It is worth considering whether this tendency is truly reflective of the relative costs of onshore and offshore capacity or a consequence of divergent opportunities.</p>
5	<p>Do you wish to raise a Workgroup Consultation Alternative Request for the Workgroup to consider?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Request to consider extending CMP353: We believe that the workgroup should consider the alternative option to retain the holding position implemented by CMP353. This is not because we believe that CMP353 is an acceptable long term solution or that CMP375 and its direction of travel is flawed. However, we are concerned that CMP375 will be another temporary, imperfect solution which, although probably an improvement on CMP353, will introduce more charging uncertainty for only short-term gain. The greater purpose is to establish a holistic enduring methodology for cost-reflective locational charging through the TNUoS Task Force.</p> <p>Click or tap here to enter text.</p> <p>Click or tap here to enter text.</p>

Specific Workgroup Consultation questions

6	<p>Do you agree with the CMP315 and CMP375 Proposers' conclusions that the Expansion Constant should also include circuit reinforcement, non-circuit works and life extension works in addition to new circuit build. Are there any other reinforcement types that should be included? Please provide justification for your response.</p>	<p>We agree that reinforcement works <u>that expand circuit capacity</u> should be used, in addition to new build circuit works, in the derivation of the EC and EFs. Inclusion of such reinforcement works is consistent with the principle that locational tariffs should reflect the long run marginal cost of network expansion which clearly results from a mix of new build circuits and reinforcements.</p> <p>Although we agree that the use of <i>non-circuit</i> reinforcements is valid in principle in the derivation of the EC and EFs, non-circuit assets do not <i>transport</i> power and therefore uprating those assets does not in itself <i>expand</i> transport capacity. It is therefore necessary to estimate the circuit length and capacity expansion that the non-circuit works facilitate. For instance, uprating a transformer from 240MVA to 360MVA only expands transport capacity to the extent that it facilitates additional secured power flows across the network. In order to properly reflect the true expansion cost of these reinforcements it is therefore crucial to estimate the consequential capacity expansion and the applicable circuit length. We believe that this can only be properly achieved by associating non-circuit reinforcement costs with circuits and using those costs as additional inputs to the EC and EFs, as proposed by LCP, rather than by the creation of proxy circuits. However, although we agree with LCP's high-level principle we are concerned from the limited information presented to date that their proposed method for deriving the EC and EFs from those costs may not adequately reflect the associated network expansion costs.</p> <p>Life extension works that do not expand network capacity should not be used as inputs for deriving the EC and EFs because doing so is not consistent with reflecting the marginal <u>expansion</u> cost. However, it may be appropriate to develop a systematic approach whereby life extension works are taken into account in the annuitisation of new-build circuits. For instance, rather than assuming a 50-year life for an overhead line a more extensive life-cycle could be assuming incorporating life extension works. Extending the assumed circuit life of overhead line could appropriately reduce the EC and applicable EFs although the significance of its impact may be limited by depreciation.</p> <p>SMART reinforcements that facilitate commercially firm generation give rise to constraint costs which are funded by non-locational BSUoS charges. If these reinforcements were fully reflected in the EC and EFs then this would create a</p>
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7	<p>CMP315 and CMP375 have different proportions of each reinforcement type in the basket for the calculation of the Expansion Constant because the Proposers have different interpretations as to what the Expansion Constant should represent. Which one of these interpretations do you agree with or do you have a different approach? Please provide justification for your response.</p>	<p>As reasoned in Q1 we believe that the underlying principle of CMP315 is inconsistent with the charging objective of reflecting the cost of efficient network expansion. As a consequence we believe that its rationale for considering inputs to calculation of the EC and EFs is inherently flawed.</p> <p>As reasoned in Q2 we support the underlying “expansion principle” of CMP375 (i.e. that charges should reflect the long run marginal expansion costs). However, there needs to be more rigorous scrutiny of the works that are included (as described in Q6) and the relative proportions of those works against this expansion principle.</p> <p>The LCP “variant” of CMP375 proposes using a cost dataset derived from TO RII02 Business Plans. In our view there are two significant potential problems with using this dataset:</p> <ol style="list-style-type: none"> 1. TO RII02 Business Plans omit high-value new build works that would be approved by re-openers and are therefore not included in the plans. Using these partial plans will therefore tend to distortly depress the EC and EFs values due to a disproportional representation of cheaper non-circuit works in the plans. 2. Using a 5-10-year planning horizon for deriving the EC and EFs risks distorting long-run marginal expansion costs with short-term opportunity costs. For instance, the opportunities to remove bottlenecks by transformer upgrades and power flow controllers are ultimately limited by existing circuit capacity. It is not clear that their will be such opportunities will be sustained in future price control periods, especially in Scotland. This could lead to greater charging volatility that is not reflective of long term marginal costs. <p>Underlying our unease about the disproportionate use of high-yielding non-circuit upgrades (i.e. transformer upgrades) is our previous argument that these works facilitate existing network capacity rather than create new network capacity and therefore depend on prior the availability of “real” circuit capacity. When this capacity is used up (i.e. when there is no spare or redundant capacity left) the only way to further</p>

		expand the network is build new circuits, as evident by the need for HVDC links to bypass the congested onshore network.
8	A Workgroup Member has also suggested an alternative approach to establish the forward-looking marginal cost over a realistic 5–10-year time horizon. Do you agree with this interpretation or would you suggest a different approach? Please provide justification for your response.	We support the principle of including forward-looking costs in the derivation of the EC and EFs. This is particularly appropriate where there are marked trends in technology opportunities and costs. For example, it could be more appropriate to use future rather than historic HVDC costs to derive associated EFs because of the rapid development of such technology and supply chains. However, our reservations about using a limited forward-looking dataset and horizon are described above. We believe that there is a need for a more systematic assessment of long run marginal costs which means considering how short term (i.e. 5-10-year) opportunities contribute to the long run cost.
9	CMP315 and CMP375 Originals propose using the last 10 years historical data when calculating the Expansion Constant/Expansion Factors. Do you agree with this approach or are there alternative approaches to consider? Please provide justification for your response.	We believe that there is value in using the widest possible cost dataset that reasonably reflects the long run expansion costs. In principle a dataset which incorporates 10 years of historic data and 10 years of planned data for future works could provide the most balanced view possible. However historic and forward-looking datasets both have the potential for large distortions governed by particular opportunities and constraints that may dominate in that period, which is still short relative to the long run. We believe that the use of “opportunistic cost data” needs to be underpinned by a systematic view on how these inherently limited datasets reflect the long run marginal expansion cost.
10	Do you agree with the list of data items, the ESO require from Transmission Owners to calculate the Expansion Constant. Please provide justification for your response.	Yes, we agree with the list of data items. However, we note that it is imperative that any data that is requested from the ESO is clear, specific, and transparent. Requests need to be timely to ensure TOs can adequately resource the data request. The specifics of the data request and timescales need to be codified within the STC, with agreement from the STC Panel.
11	In their analysis, Lane Clark and	We support in principle LCP’s proposal of allocating non-circuit reinforcements costs to existing circuits. We believe

	<p>Peacock (LCP) have provided an alternative implementation approach proposing non-circuit build to be allocated to existing circuits and thereby included within the EFs rather than creating proxy circuits (as proposed by the CMP315 and CMP375 Original). Do you have any thoughts on this and do you agree with LCP's proposal for reinforcement factors? Please provide justification for your response.</p>	<p>that this approach is more consistent with the current methodology and better reflects the true expansion cost associated with reinforcements. The rationale for allocating costs in this way reflects the fact that non-circuit assets do not transport power themselves but facilitate the transportation of power by efficiently distributing and diverting power between circuits. Upgrading non-circuit assets can achieve this by lifting bottlenecks and diverting power away from congested circuits. The concept of proxy-circuits unrelated to transport pathways has no intangible reality and is therefore likely to result in distorted and unexpected outcomes.</p>
12	<p>To achieve implementation by 1 April 2023, the Workgroup understand that it will not be possible under the current timeline to include the new EC/EFs in the draft TNUoS tariffs for 2023/2024. Do you support this and, if so, in the absence of draft TNUoS tariffs for 2023/2024, what detail will you need ahead of final TNUoS tariffs being published?</p>	<p>In order to ensure parties are able to properly take account of the large range of possible outcomes of the proposed changes, robust and reliable scenario analysis of likely impacts must be provided at the earliest opportunity. The change to the EC and EFs is likely to have significant implications for the level of the TNUoS tariffs, and all users will need to be able to plan appropriately.</p> <p>The level of uncertainty at this stage (about 10 months before proposed implementation!) is exacerbated by the broad range of possible solutions presented and the preliminary and tentative nature of each proposal.</p> <p>In the absence of draft TNUoS tariffs for 2023/2024, we would expect that the ESO will provide a detailed sensitivity study of possible new tariffs under this modification at the earliest reasonable opportunity, which may not align with the typical draft tariff publication programme. Without robust and reliable advance information (which we believe to be challenging given the complex and debatable nature of the proposals) we believe that it may be better to extend the holding position of CMP353 rather than to apply another imperfect, non-enduring arrangement ahead of the outcome of the TNUoS Task Force.</p>

