

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
Respondent name:	Matthew Paige-Stimson
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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);*

- 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;*
- 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?	Mark the Objectives which you believe each solution better facilitates:						
		<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>	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	
<p>We do not believe CMP315 will better meet the objectives than the Baseline. We believe the proposal is likely to be negative in respect of objectives A, B, C and E given the high probability of introducing additional complexity, unjustified administrative burdens, and potential to introduce arbitrary calculations that are likely to impact the cost-reflectivity and volatility of the expansion constant and tariffs.</p> <p>We had hoped that a proposed expansion constant model for CMP315 would have been more fully described before progressing to Working Group consultation. We essentially still only have a proposal in principle and lack a model, case studies, or examples that would be needed to properly assess potential impacts and merits of the proposal.</p> <p>The approach of data-first, principles-second is a risk to cost reflectivity and competition. Nevertheless, we are aware that the nature of lumpy transmission investment can lead to limited quantities of data being available, which may affect the models that can be implemented.</p> <p>We understand that CMP315 is looking to establish a whole-life expansion constant. This is significantly more complex than the current approach (reducing transparency), details such as establishing the current cost of assets built decades ago would need to be understood and how circuit-specific costs are averaged nationally need to be developed (affecting cost reflectivity). Such an approach does not signal the expected cost of the next investment and is less forward-looking than the current baseline.</p>								

Standard Workgroup Consultation questions

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 data-bbox="507 315 810 383">Original</td> <td data-bbox="818 315 906 383"><input type="checkbox"/> A</td> <td data-bbox="914 315 1002 383"><input type="checkbox"/> B</td> <td data-bbox="1010 315 1098 383"><input type="checkbox"/> C</td> <td data-bbox="1106 315 1193 383"><input type="checkbox"/> D</td> <td data-bbox="1201 315 1289 383"><input type="checkbox"/> E</td> </tr> </table> <p>We do not believe CMP375 currently better meets the objectives compared to the Baseline but think it could do with further development. We believe the proposal is currently likely to be negative in respect of objectives A, B, C and E given the high probability of introducing additional complexity, administrative burden and potential to introduce arbitrary calculations that may impact on the cost-reflectivity and volatility of the expansion constant.</p> <p>The reasons are broadly the same as set out above for CMP315 but we believe these can be more easily addressed with the CMP375 approach. Overall, this approach is likely to be more cost reflective of the next investment made by TOs (subject to the basket of costs and investment types that are included).</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			
3	Do you support the proposed implementation approach?	<p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> No</p> <p>Based on the development undertaken by the Working Group to date and the range of materially different options still being considered, we do not have confidence that the proposal will be sufficiently developed (including any associated STC changes that enable the CUSC change) to be sure of implementation from 1st April 2023.</p> <p>We believe a longer lead time may be needed not only to ensure wider code changes can be made, but also so that industry participants can respond to the changes in an effective manner.</p>						
4	Do you have any other comments?	<p>Multiple CUSC Modifications</p> <p>The current approach of considering two proposals in parallel that overlap and take materially diverse positions is inefficient and makes it harder to assess each proposal. Looking ahead, this will add complexity to governance criteria, for example, deciding which alternative modifications are better than the original when there are effectively two original proposals in play.</p> <p>We would prefer to see the modifications consolidated to one modification with all proposals tested against a single original proposal.</p> <p>STC</p> <p>A change to the enduring STC data exchange requirements in support of these amendments has not yet been made. Whilst this is normal at this stage of development, it remains unclear what the enduring data provision requirement will be. We need a clear settled definition of data requirements to: (a) ensure consistency across the TOs and over time; and (b) to determine what practical implementation period may be needed for this CUSC modification.</p>						
5	Do you wish to raise a Workgroup Consultation Alternative	<p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> No</p> <p>Click or tap here to enter text.</p>						

Standard Workgroup Consultation questions

Request for the Workgroup to consider?	Click or tap here to enter text.
	Click or tap here to enter text.

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 provision of incremental capacity is no longer delivered solely by building new circuits but additionally by upgrades such as reconductoring and hotwiring. In that respect, both CMP315 and CMP375 are correct in principle.</p> <p>We believe that only solutions that add incremental network capacity should be included in the expansion constant, with the divisor being the increment of capacity added i.e. the increase in capacity provided by a reconductoring is the difference between the old and new circuit ratings.</p> <p>We believe assets used for asset replacement and / or refurbishment should not be included, as the intention of the expansion constant is to capture the cost of solutions that add network capacity rather than managing asset health risks (where assets are replaced on a like-for-like basis).</p> <p>We do not believe "asset life-extension" – a term which needs to be more clearly defined – should be included this does not add incremental capacity. We believe lengthening of asset lives (if this is what is meant) could be reflected in changes to the annuity factor, but this is outside the scope of CMP315 and CMP375.</p> <p>We believe assets that add entry/exit nodes should not be included, as these are Connection Assets and not included in wider network costs recovered through TNUoS tariffs. This is pertinent to exclusion of substations and transformers, most of which are at entry / exit points. The volume of investments in new busing substations and transformers (e.g. 400/275kV SGTs in the case of England and Wales) in the specified 10-year timeframe will be low as to not be relevant to the incremental cost of expanding the network.</p> <p>We believe 'smart' assets / solutions that manage power flows on the transmission network, such as quad boosters or active network management schemes (e.g. operational tripping schemes) should not be included given the Transport Model is based on circuit rather than boundaries. For example, quad boosters enhance boundary capacity by balancing of power flows on circuits improving circuit utilisation, but such solutions do not add circuit capacity.</p> <p>We are not convinced that circuit breakers should be included. Generally, circuit breakers are not capacity limiting assets and represent a fixed cost at the ends of all circuits. Circuit breakers therefore spread as a near uniform cost across all circuits.</p> <p>As to how non-circuit assets are accommodated in the transport model remains highly unclear at this time. We have seen some proposals from LCP and our concerns are covered in detail in Q11.</p>
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Specific Workgroup Consultation questions

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>In both cases, the exact approach to weighting and scaling of a basket of asset types and capacities has yet to be set out by the Working Group. We cannot therefore offer a comprehensive answer to this question at this time, given the lack of models to assess.</p> <p>CMP375</p> <p>We note that CMP375 proposes to base the expansion constant upon investments in last ten years. We would expect the incremental capacity to be the difference in circuit ratings between the old and new conductors.</p> <p>It should be noted that it is quite credible that the £/MW/km of reconductoring will be significantly higher than the £/MW/km expansion constant factor compared to the addition of new capacity by whole new circuits. For example, from data made visible to the Working Group, one reconductoring scheme (to manage asset health) cost ~£45m and delivered ~300MW of incremental capacity, translating into an annuitised expansion constant of ~£43/MW/km, which is significantly higher than the current constant.</p> <p>The CMP375 model is relatively simpler than CMP315, since it focuses purely on investments made in a specified timeframe and focusses on the cost of new capacity in the future i.e. the next investment to expand the network.</p> <p>CMP315</p> <p>The CMP315 model will be considerably more complex (more data items of low volume) that risks creating further tariff volatility.</p> <p>We consider that a “total cost” or “whole life” view, with costs being even further back in time will not represent the current (modern equivalent) cost of installation and materials. It is not clear how different investments made over time and in different locations would be combined. There are additional challenges in respect of inflation and accounting for commodity price changes that make this approach far more challenging and arguably less transparent. Such updates and reviews would need to be made each time the expansion constant is updated. Taken together these complexities, make the approach not viable.</p>
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Specific Workgroup Consultation questions

8	<p>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.</p>	<p>We do not agree with a <i>forecast</i> forward-looking marginal cost. The expansion constant should remain focussed on actual known costs of works.</p> <p>It is not clear that a using a forecast of forward-looking costs would be more cost reflective as the work anticipated is likely to change (e.g. the year-on-year changes in NOA-supported investments); and forecast costs will change as projects are developed further and commodity prices are increasing. Price controls have complex mechanisms to deal with these issues but, without replicating these, tariffs will be less cost reflective and more volatile.</p> <p>Forward looking charges would also change considerably over time. Ten years is likely to be two price controls into the future. It is increasingly harder to predict costs amid continuing evolution of the energy sector; emerging global economic risks in respect of energy prices; and subsequent metals and commodity cost uncertainty.</p>
9	<p>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.</p>	<p>We believe using historical data is the correct approach to retain, limiting data to recent actual costs.</p> <p>We would suggest a 5-year historic data timeframe would be more likely to be more cost reflective of current manufacturing and construction costs, reflecting current innovation across supplier and installation sectors.</p>

10	<p>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.</p>	<p>We wish to support this amendment process by providing cost data at an appropriate time, subject to ensuring that competition laws are not infringed, and commercially sensitive information is not published.</p> <p>We believe the data request is premature since:</p> <ul style="list-style-type: none"> (a) the Working Group has not yet established how this data will be incorporated in the expansion costs i.e. it is not clear if and how this data will be used; and (b) there is not yet a short-list of options being considered for an assessment to be made. <p>Without these in place, the process is at best inefficient and at worst may lead to a cherry picking of data to derive tariffs that are in one party's interest or another.</p> <p>Notwithstanding these points, we do not agree with all the data items listed and have provided comments below. How such site-specific cost are used and weighted to more fairly represent the addition of new transmission system capacity has not yet been set out.</p> <ul style="list-style-type: none"> a) New circuit build (existing methodology) We agree. This is included in the Baseline. b) Circuit replacement/refurbishment We do not agree. Assets to manage asset health through replacement and refurbishment look to do so on like-for-like basis and would not be relevant to the expansion constant whose focus is on the cost of increasing capacity. Only circuit works that add intend to add incremental capacity, such as reconductoring to a higher capacity conductor, should be included. c) New non-circuit build e.g. substations Non-circuit reinforcement e.g. transformers We believe this part of the data requirements is insufficiently developed for it to be relevant to the expansion constant that primarily affects wider tariffs. We believe 400/132kV and 275/132kV (or to lower voltages) at entry and exit substations that are connection assets should be excluded since they do not form part of network covered by TNUoS tariffs. We consider it may be appropriate, for England and Wales, to include only 400/275kV assets that form part of the wider network, but we remain unclear how such assets can be objectively included in the transport model. See responses to previous answers. e) 'Smart' reinforcement option e.g. Intertrips and Active Network Management Intertrips and Active Network Management schemes do not increase the capacity of the network, they allow customers to connect ahead of reinforcements and do not add network / circuit capacity. As such, these costs should not be included in the expansion constant. Furthermore, these tools provide capacity at entry / exit points or on system boundaries, neither of which are considered in a transport model.
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Specific Workgroup Consultation questions

		<p>f) Life extension options</p> <p>We believe these solutions should not be included, as they do not add actual network capacity and could be reflected in adjustment to the average annuity factor, outside of this modification.</p> <p>g) Non-thermal solution options e.g. circuit breaker replacement</p> <p>We believe these solutions should not be included, as they do not add physical network capacity.</p> <p>h) Re-using existing connection points as traditional carbon-based generation closes.</p> <p>We are unclear what is intended by this category as this does not relate to increasing network capacity.</p>
11	<p>In their analysis, Lane Clark and 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>If the expansion constant is to remain a £/MW/km factor, then a suitable allocation of non-circuit asset cost by distance will be required if such assets are included.</p> <p>However, we cannot see how non-circuit solutions can have their costs fairly allocated to local circuits, when the expansion constant is meant to be a GB wide parameter. The Working Group is not considering a circuit specific expansion constant approach because of excessive complexity and data burden that would arise.</p> <p>Allocating a non-circuit asset cost to existing circuits, for example an asset at a substation, when the number of circuits and their length connected to substations varies from location to location is an arbitrary approach.</p> <p>We believe the proposal implicitly requires a number of judgement calls to be made. These have not yet been transparently set out, beyond the proposal in principle to demonstrate how this would be.</p> <p>The approach appears to be complex, not completely defined. If this is not the case some simple diagrams showing how asset lengths would be adjusted would aid industry's understanding.</p> <p>We also have concerns over the use of DNO data as the basis to divine what proportion of transmission solution costs are included or excluded from the expansion constant. This is wrong in principle as well as practice.</p>

Specific Workgroup Consultation questions

12	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?	We refer to our response to Question 3.
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