CUSC Modification Proposal Form	At what stage is this document in the process?
# CMP346: ## Price Control Updates to Charging Parameters	01 Proposal Form 02 Workgroup Consultation 03 Workgroup Report 04 Code Administrator Consultation 05 Draft CUSC Modification Report 06 Final CUSC Modification Report

Purpose of Modification: This modification seeks to amend incorrect and misleading references to old charging parameters in CUSC Section 14.

The Proposer recommends that this modification should be:

- subject to self-governance
- and sent to Code Administrator Consultation

This modification was raised 11 June 2020 and will be presented by the Proposer to the Panel on 26 June 2020. The Panel will consider the Proposer's recommendation and determine the appropriate route.

High Impact: None identified

Medium Impact: None identified

Low Impact Generator Users liable for TNUoS charges and Users liable for connection charges.

Contents

Timetable

The Code Administrator recommends the following timetable:

Code Administrator Consultation	13 July 2020 to 04 August 2020
Draft Final Modification Report presented to Panel	20 August 2020
Modification Panel decision	28 August 2020
Final Modification Report issued to Panel to check votes have been recorded correctly (5 working days)	02 September 2020
Appeals Window (15 working days)	10 September 2020 to 01 October 2020
Decision implemented in CUSC	01 April 2021

Any questions?

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Proposer Details

Details of Proposer: (Organisation Name)	National Grid Electricity System Operator
Capacity in which the CUSC Modification Proposal is being proposed: (i.e. CUSC Party, BSC Party or "National Consumer Council")	CUSC Party
Details of Proposer's Representative: Name: Organisation: Telephone Number: Email Address:	 Sarah Chleboun National Grid ESO 07790 342584 sarah.chleboun@nationalgrideso.com
Details of Representative's Alternate: Name: Organisation: Telephone Number: Email Address:	 Jo Zhou National Grid ESO 07770 444015 jo.zhou@nationalgrideso.com
Attachments (Yes/No): No	

Impact on Core Industry Documentation.

Please mark the relevant boxes with an "x" and provide any supporting information

BSC	
Grid Code	
STC	
Other	

This Modification Proposal has no impact on core Industry Documentation.

1 Summary

Defect

CUSC Section 14 defines a number of parameters that are used to derive Transmission Network Use of System (TNUoS) tariffs and also Connection charges, which must be reviewed and updated in preparation for the start of each new price control period.

Many of the parameters described in Section 14 have values included within the text which are either currently out of date or will be once they have been updated in preparation for the forthcoming RIIO-2 price control period, to apply from April 2021.

What

Changes would be limited to Section 14 of the CUSC to clarify, for each affected input parameter, where to find the current parameter value.

Why

The inclusion of out of date parameters within CUSC section 14 is misleading and unhelpful to Users, it may lead to confusion and the potential use of incorrect data.

By referencing the Charging Statement, which is updated annually, this will provide customers with one accurate place to find current parameters, which will improve the clarity of our charges. It also removes the need for annual CUSC modifications to be raised to maintain current values where parameters are subject to annual indexation.

How

This modification seeks to amend references to out of date charging parameters in CUSC Section 14, by removing the parameter values and instead referring the User to the Charging Statement which is published each year on the National Grid Electricity System Operator (NGESO) website and contains up to date values for each parameter. Example calculations for relevant parameters will be updated, where necessary, to ensure it is clear that they are not using current data.

2 Governance

Justification for Self-Governance Procedures

The Self-Governance criteria is met as the modification is unlikely to discriminate between different classes of Grid Code Parties and is unlikely to have a material effect on:

i) Existing or future electricity customers;

ii) Competition in the generation, distribution, or supply of electricity or any commercial activities connected with the generation, distribution or supply of electricity,

iii) The operation of the National Electricity Transmission System

iv) Matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies

v) The Grid Code's governance procedures or the Grid Code's modification procedures

Requested Next Steps

This modification should:

- be subject to self-governance
- and sent to Code Administrator Consultation

This modification is not considered urgent but since it is linked to the Price Control it would ideally be approved prior to the beginning of the RIIO-2 price control period, in April 2021, for implementation on 1st April 2021.

3 Why Change?

CUSC Section 14 Part 2 defines a number of parameters, used to derive the locational component of generation and demand TNUoS tariffs, which must be reviewed and updated in preparation for the start of each new price control period. These parameters are then fixed or have inflationary updates between price control reviews, in order to provide stability and predictability of tariffs. The parameters to be reviewed and updated include:

- the expansion constant and expansion factors, which reflect the cost of investing in the transmission network;
- the charging parameters making up the expansion constant, namely the annuity factor (comprised of the weighted average cost of capital, and asset life), the overhead factor, and the capital costs;
- the locational security factor that reflects the cost of an integrated transmission network;
- the generation charging zone boundaries; and
- the onshore civil engineering discount, which is applied to Offshore Substation Tariffs.

Additionally, CUSC Section 14 Part 1 – The Statement of Connection Charging Methodology, defines the Transmission Running Cost (TRC) factor. This reflects the appropriate amount of other Transmission Running Costs (rates, operation, indirect

overheads) incurred by the transmission licensees that should be attributed to connection assets. The TRC factor is also recalculated at the beginning of each price control.

Many of the parameters described in Section 14 have values included within the text which are either currently out of date or will be once they have been updated in preparation for the forthcoming RIIO-2 price control period, to apply from April 2021. Some of these values include a reference to the date they became applicable so it is clear they are out of date, whereas others give no dates or refer to the "current" value which is misleading and incorrect.

The purpose of this CUSC modification proposal is to amend out of date parameters in CUSC section 14 by removing the out of date parameters and instead referencing the Charging Statement, which is published on the NGESO website in line with the National Grid Electricity System Operator Electricity Transmission Licence Condition C5A, and in which the up to date parameters are published each year. This will provide customers with one accurate place to find current parameters, which will avoid confusion and the potential use of incorrect data and improve the clarity of our charges.

We presented the proposal for this modification at Transmission Charging Methodology Forum (TCMF) on 3rd March 2020. The main feedback that was received was:

1. *if the parameter values are to be moved to the charging statement as a linked document then it should be ensured that it is clear how the calculations are arrived at.*

   We would like to clarify that this modification will not remove any parameter calculations or examples that are described within CUSC section 14, so it should not have any negative impact on the clarity of calculations.

2. *to consider whether the solution could instead be a schedule within the CUSC.*

   We have considered this as a potential solution and believe that whilst it would solve the initial problem of incorrect or out of date information being in CUSC section 14, it would still require future CUSC modifications to update the parameters once they were out of date which would result in an increased administrative burden on the industry. Many parameters which are subject to annual indexation would be out of date after one year and all parameters would need to be updated at the start of the next price control period. Ultimately, this would still retain an element of confusion where out of date parameters were available to users in CUSC Section 14 but were not the ones applied to charges.

It is worth noting that this proposal is to implement the minimum change needed to resolve the issue of out of date parameters being included in CUSC prior to the next price control period, beginning April 2021. If a party feels that it would be beneficial to build on this with additional information, then we would be happy to discuss this separately.

4 Code Specific Matters

Technical Skillsets

None required.

Reference Documents

The charging statements describe our charges and the methodologies behind them, they include all up to date parameters which are used in our tariff setting. They can be found on the NGESO website[1].

NGESO presented this modification at Transmission Charging Methodology Forum (TCMF) on 3rd March 2020 and whilst not essential, it may be useful to review the slides and minutes alongside this Modification Proposal. These can be found under the heading “Meeting 102 – 3 March 2020” on the TCMF webpage[2].

5 Solution

This modification seeks to amend references to out of date charging parameters in CUSC Section 14, by removing the parameter values and instead referring the User to the Charging Statement, a document which we are obliged to publish in line with condition C5A of the National Grid Electricity System Operator Electricity Transmission Licence and is published each year on the NGESO website. This contains up to date values for each parameter.

Where example calculations are given for a parameter, these will be updated, where necessary, to ensure it is clear that it is not the current data that is being used.

For clarity, if any impacted paragraphs also contain out of date references (to other paragraphs within the CUSC), these will also be updated.

We believe that publication of the revised charging parameters in the charging statement only, will;

- avoid the potential for incorrect, out of date, parameters to be available which could inadvertently be used by customers;

[1] https://www.nationalgrideso.com/industry-information/charging/charging-statements

[2] https://www.nationalgrideso.com/transmission-charging-methodology-forum-and-cusc-issues-steering-group

- avoid additional administrative burden on the industry of having to raise annual CUSC modifications to keep the parameters up to date for those which are subject to annual indexation.

For the avoidance of doubt, this proposal is limited to those charging parameters, tariffs and generation charging zones which are reviewed at the start of a new price control period.

This proposal seeks to modify the location of the charging parameter values only. There is no proposed change to the charging methodology for calculation of the charging parameters, and therefore there is no impact on the collection of Transmission Owner or Offshore Transmission Owner allowed revenue.

6 Impacts & Other Considerations

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

This Modification has no impact on the Significant Code Review (SCR) or other significant industry change projects.

Consumer Impacts

This Modification has no material impact on consumers.

7 Relevant 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	None

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;	None
(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.	Positive
*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).	

Demonstration of how the Relative Objectives are furthered:

(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

The proposed changes remove a barrier to entry which could be caused by incorrect or misleading information being included in the CUSC. Confusion where out of date parameter values is still available could cause new customers to inadvertently use incorrect information.

(e) Promoting efficiency in the implementation and administration of the CUSC arrangements.

The proposed changes will provide customers with one accurate place to find current parameters and will only require a single CUSC modification to achieve it. This avoids additional administrative burden on the industry of having to raise annual CUSC modifications to keep the parameters up to date for those which are subject to annual indexation.

8 Implementation

Since this modification is related to price control linked parameters, it would ideally be approved prior to the beginning of the RIIO-2 price control period, in April 2021, for implementation on 1st April 2021.

9 Legal Text

Text Commentary

The current wording for each parameter should be updated to reflect that the current values can be found within the Charging Statement which is published on the NGESO website. Any example calculations for the relevant parameters will be updated, where necessary, to ensure it is clear that they are not using current data. If any impacted paragraphs also contain out of date references (to other paragraphs within the CUSC), these will also be updated.

Legal Text

The legal text can be found in Annex 1 of this document.

10 Recommendations

Proposer's Recommendation to Panel

Panel is asked to:

- Agree that Self Governance procedures should apply
- Submit this proposal to Code Adminstrator Consultation.

11 Annex 1: Legal Text

Changes to section 14 of the CUSC are proposed as follows (please note that additions are shown in blue and underlined, deletions are shown in red with strikethrough):

CUSC - SECTION 14

Section 14.3 The Calculation of the Basic Annual Connection Charge for an Asset

Part B: Transmission Running Costs

14.3.19	The TRC factor is calculated by taking a proportion of the forecast Transmission Running Costs for the transmission licensees (based on operational expenditure figures from the latest price control) that corresponds with the proportion of the transmission licensees' total connection assets as a function of their total business GAV. This cost factor is therefore expressed as a percentage of an asset's GAV and will be fixed for the entirety of the price control period. The TRC factor, calculated as above, and applicable for any particular Financial Year, is detailed in **The Company's Statement of Use of System Charges** which is available from the **Charging website**[3]. ~~For 2010/11 this will be 1.45%.~~
14.3.19 Footnote	3 https://www.nationalgrideso.com/industry-information/charging/
14.3.20	To illustrate the calculation, the following example uses the average operating expenditure from the published price control and the connection assets of each transmission licensee expressed as a percentage of their total system GAV to arrive at ~~a~~ the 2010/11 GB TRC value of 1.45%: **Example:** Connection assets as a percentage of total system GAV for each TO: Scottish Power Transmission Ltd — 15.1% Scottish Hydro Transmission Ltd — 8.6% NGET — 12.5% Published current price control average annual operating expenditure (£m):

Scottish Power Transmission Ltd	29.1
Scottish Hydro Transmission Ltd	11.3
NGET	295.2

Total GB Connection GAV = £2.12bn

GB TRC Factor = (15.1% x £29.1m + 8.6% x £11.3m + 12.5% x £295.2m) / £2.12bn

GB TRC Factor = 1.99%

Net GB TRC Factor = Gross GB TRC Factor – Site Specific Maintenance Factor*

Net GB TRC Factor = 1.99% - 0.54% = 1.45%

* Note – the Site Specific Maintenance Factor used to calculate the TRC Factor is that which applies for the first year of the price control period or in this example, is the 2007/8 Site Specific Maintenance Factor of 0.54%.

Section 14.14 – Principles

14.14.15 vi)	The number of generation zones which are applicable for any particular financial year, determined using the criteria outlined in paragraph 14.15.42, are detailed in **The Company's Statement of Use of System Charges** which is available from the **Charging website**. ~~has been determined as 21.~~

14.15 Derivation of the Transmission Network Use of System Tariff
Calculation of zonal marginal km

14.15.37	Given the requirement for relatively stable cost messages through the ICRP methodology and administrative simplicity, nodes are assigned to zones. Typically, generation zones will be reviewed at the beginning of each price control period with another review only undertaken in exceptional circumstances. Any rezoning required during a price control period will be undertaken with the intention of minimal disruption to the established zonal boundaries. The full criteria for determining generation zones are outlined in paragraph 14.15.42. The currently applicable number of generation zones are detailed in **The Company's Statement of Use of System Charges** which is available from the **Charging website** ~~set for 2010/11 is 20~~.

The Expansion Constant

14.15.65	The Weighted Average Cost of Capital (WACC) and asset life are established at the start of a price control and remain constant throughout a price control period. The WACC used in the calculation of the annuity factor is NGET's regulated rate of return, this assumes that it will be reasonably representative of all licensees. The asset life used in the calculation is 50 years; the appropriateness of this is reviewed when the annuity factor is recalculated at the start of a price control period. These~~se assumptions provide a~~ current annuity factor, determined using these assumptions, is detailed in **The Company's Statement of Use of System Charges** which is available from the **Charging website**~~ of 0.066~~.
14.15.66	The final step in calculating the expansion constant is to add a share of the annual transmission overheads (maintenance, rates etc). This is done by multiplying the average weighted cost (J) by an 'overhead factor'. The 'overhead factor' represents the total business overhead in any year divided by the total Gross Asset Value (GAV) of the transmission system. This is recalculated at the start of each price control period. The overhead factor used in the calculation of the current expansion constant is, calculated as above, and detailed in The Company's **Statement of Use of System Charges** which is available from the **Charging website**~~for 2009/10 is 1.8%~~. The overhead and annuitised costs are then added to give the expansion constant.
14.15.67	Using the previous example, and the 2009/10 values for the annuity factor (6.6%) and overhead factor (1.8%), the final steps in establishing the expansion constant are demonstrated below: **400kV OHL expansion constant calculation** / **Ave £/MWkm** **OHL** 114.160 Annuitised 7.535 Overhead 2.055 **Final** **9.589**

14.15.69	This process of calculating the incremental cost of capacity for a 400kV OHL, along with calculating the onshore expansion factors is carried out for the first year of the price control and is increased by inflation, RPI, (May–October average increase, as defined in the Transmission Licence) each subsequent year of the price control period. The current expansion constant is detailed in The Company's **Statement of Use of System Charges** which is available from the **Charging website**~~for 2010/11 is 10.633~~.

Onshore Wider Circuit Expansion Factors

14.15.77	The TO specific onshore circuit expansion factors which are applicable for any particular Financial Year, are detailed in The Company's **Statement of Use of System Charges** which is available from the **Charging website**. ~~calculated for 2008/9 (and rounded to 2 decimal places) are:~~ ~~Scottish Hydro Region~~

	~~400kV underground cable factor: 22.39~~ ~~275kV underground cable factor: 22.39~~ ~~132kV underground cable factor: 27.79~~ ~~400kV line factor: 1.00~~ ~~275kV line factor: 1.14~~ ~~132kV line factor: 2.24~~ ~~Scottish Power & NGET Regions~~ ~~400kV underground cable factor: 22.39~~ ~~275kV underground cable factor: 22.39~~ ~~132kV underground cable factor: 30.22~~ ~~400kV line factor: 1.00~~ ~~275kV line factor: 1.14~~ ~~132kV line factor: 2.80~~

Onshore Local Circuit Expansion Factors

14.15.79	In addition, the 132kV onshore overhead line circuit expansion factor is sub divided into four more specific expansion factors. This is based upon maximum (winter) circuit continuous rating (MVA) and route construction whether double or single circuit. The values which are applicable for any particular Financial Year, are detailed in The Company's **Statement of Use of System Charges** which is available from the **Charging website**. ~~400kV underground cable factor: 22.39~~ ~~275kV underground cable factor: 22.39~~ ~~132kV underground cable factor: 30.22~~ ~~400kV line factor: 1.00~~ ~~275kV line factor: 1.14~~ ~~132kV line factor (single; <200MVA): 10.00~~ ~~132kV line factor (double; <200MVA): 8.32~~ ~~132kV line factor (single; >=200MVA): 7.13~~ ~~132kV line factor (double; >=200MVA): 4.42~~

The Locational Onshore Security Factor

14.15.89	The secured nodal cost differential is compared to that produced by the DCLF ICRP transport model and the resultant ratio of the two determines the locational security factor using the Least Squares Fit method. Further information may be obtained from the charging website~~1~~2.
14.15.89 Footnote	~~1 http://www.nationalgrid.com/uk/Electricity/Charges/~~ 2 https://www.nationalgrideso.com/industry-information/charging
14.15.90	The locational onshore security factor ~~derived for 2010/11 is 1.8 and~~ is based on an average from a number of studies 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. The value which is currently applicable, is detailed in The Company's **Statement of Use of System Charges**, which is available from the **Charging website**.

Local Security Factors

14.15.91	Local onshore security factors are generator specific and are applied to a generator's local onshore circuits. If the loss of any one of the local circuits prevents the export of power from the generator to the MITS then a local security factor of 1.0 is applied. For generation with circuit redundancy, a local security factor is applied that is equal to the locational security factor, ~~currently 1.8~~ the value which is applicable for any particular Financial Year, is detailed in The Company's **Statement of Use of System Charges**, which is available from the **Charging website**.

14.15.94	The offshore security factor for single circuits with a single cable will be 1.0 and for multiple circuit connections will be capped at the locational onshore security factor, derived in accordance with 14.15.91 ~~as 1.8 for 2010/11~~.
14.15.95	The offshore local security factor for configurations with one or more Offshore Interlinks is updated so that the offshore circuit tariff will include the proportion of revenue associated with the Offshore Interlink(s). The specific offshore local security factor for configurations involving an Offshore Interlink, which may be greater than the offshore security factor for multiple circuit connections, described in 14.15.94 ~~1.8~~, will be calculated for each offshore connection using the following methodology: $$LocalSF = \frac{\text{IRevOFTO} \times \text{NetworkExportCapacity}}{\text{CRevOFTO} \times \sum_{k} \text{Gen}_{k}} + LocalSF_{\text{initial}}$$ Where: IRevOFTO = The appropriate proportion of the Offshore Interlink(s) revenue in £ associated with the offshore connection calculated in 14.15.85 CRevOFTO = The offshore circuit revenue in £ associated with the circuit(s) from the offshore substation to the Single Common Substation. $LocalSF_{initial}$ = Initial Local Security Factor calculated in 14.15.~~80~~93 and 14.15.81 and other definitions as in 14.15.~~80~~94.

Onshore Local Substation Tariff

14.15.122	Using the above factors, the corresponding £/kW tariffs ~~(quoted to 3dp)~~ that will be applicable for any particular Financial Year, are detailed in The Company's **Statement of Use of System Charges** which is available from the **Charging website** ~~applied during 2010/11 are:~~

~~Substation~~	~~Connection~~	~~Substation Voltage (a)~~

		~~**Rating** (b)~~	~~**Type** (c)~~	~~**132kV**~~	~~**275kV**~~	~~**400kV**~~
		~~<1320MW~~	~~No redundancy~~	~~0.133~~	~~0.081~~	~~0.065~~
		~~<1320MW~~	~~Redundancy~~	~~0.301~~	~~0.192~~	~~0.155~~
		~~>=1320MW~~	~~No redundancy~~	~~n/a~~	~~0.257~~	~~0.208~~
		~~>=1320MW~~	~~Redundancy~~	~~n/a~~	~~0.417~~	~~0.336~~

Offshore Substation Local Tariff

14.15.131	~~For 2010/11 a~~A discount ~~of £0.345590/kW~~ shall be provided to the offshore substation tariff to reflect the average cost of civil engineering for onshore substations. The value which is applicable for any particular Financial Year is detailed in The Company's **Statement of Use of System Charges** which is available from the **Charging website**. This will be inflated by RPI each year and reviewed every price control period.

