CUSC Modification Proposal Form	At what stage is this document in the process?
# CMP284: ## Improving TNUoS cost reflectivity (Reference Node)	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 make the TNUoS charge more cost reflective resulting in a reduction of the magnitude of both the generation and demand residual charges

The Proposer recommends that this modification should be:

- Proceed as a Standard CUSC Modification assessed by a Workgroup, possibly the group looking at CMP 271/4/6

This modification was raised **18 July 2017** by **Peak Gen Power Ltd** and will be presented by the Proposer to the Panel on **28 July 2017.** The Panel will consider the Proposer's recommendation and determine the appropriate route.

High Impact: Users of the transmission system (generators, suppliers, end customers) who directly or indirectly pay TNUoS charges.

Medium Impact: None

Low Impact National Grid (change in connection charge calculation)

Contents

Timetable

The Code Administrator recommends the following draft timetable:	
Initial consideration by Workgroup	w/c 11 September 2017
Workgroup Consultation issued to the Industry (15 working days)	20 November 2017
Modification concluded by Workgroup	15 January 2018
Workgroup Report presented to Panel	26 January 2018
Code Administration Consultation Report issued to the Industry (15 working days)	05 February 2018
Draft Final Modification Report presented to Panel	22 March 2018
Modification Panel recommendation	30 March 2018
Final Modification Report issued the Authority	09 April 2018
Decision implemented in CUSC	23 May 2018

Any questions?

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Proposer Details

Details of Proposer: (Organisation Name)	Peak Gen Power Ltd
Capacity in which the CUSC Modification Proposal is being proposed: (i.e. CUSC Party, BSC Party or "National Consumer Council")	Materially Impacted Party
Details of Proposer's Representative: Name: Organisation: Telephone Number: Email Address:	Nicholas Sillito Peak Gen Power Ltd 01926 336 127 nsillito@peakgen.com
Details of Representative's Alternate: Name: Organisation: Telephone Number: Email Address:	Lisa Waters Waters Wye Associates 020 8239 9917 lisa@waterswye.co.uk
Attachments (Yes/No): No **If Yes, Title and No. of pages of each Attachment:**	

Impact on Core Industry Documentation.

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

BSC	
Grid Code	
STC	
Other	

(Please specify)

1 Summary

Defect

The TNUoS charge, paid directly by suppliers, transmission connected and certain embedded generators, is made up of three elements:

i. The generation charge;

ii. The demand locational charge; and

iii. The demand residual charge.

Under EU legislation, as implemented in the CUSC, the generation charge is set to recover, in effect, a fixed amount of revenue from transmission connected generation. The EU caps generation transmission charges at 2.50 EUR/MWh. Under the CUSC this is converted into a GBP level by application of an exchange rate and a safety margin (approx. 1.55 GBP/MWh in 2017). Multiplying this by the forecast output of transmission connect generation of around 250 TWh, results in a fixed generation revenue of approximately GBP 390 million. This revenue is fixed regardless of the actual cost of the transmission investment required to securely transport the power from transmission generation to demand.

The current transport model uses a *distributed demand weighted reference node* (the "reference node"). One of the properties of the reference node in the transport model is that the total revenue collected from the reference node is always zero. This means that the total demand locational revenue is always zero (other than some noise in the calculation).

As the Transmission Owners' allowed revenue increases (largely as a result of the change in generation mix as a result of wider HMG policies), because both the total generation revenue and the demand locational revenue are fixed, the only place that a change in cost can appear is in the demand residual charge. Ofgem's open letter of 29 July 2016 highlighted its concern with the demand residual charge stating "We are concerned that the size and increase of the TNUoS demand residual payments may now be distorting the market by ..."

Further, under the current charging methodology, as generation gets more electrically distant from demand, the generation locational charge increases, and to hit the target generation revenue, the generation residual becomes increasingly negative. In its open letter of 29 July 2016, Ofgem stated "A negative residual charge prevents generators facing the full costs they impose on the transmission system, effectively subsidising all generators that pay TNUoS charges**. We do not consider that this is consistent with the aim of a well-functioning wholesale market**" (page 6, footnote 17. Emphasis added.)

The defect is that the current TNUoS charge can only recover the increasing cost of the transmission system by increasing the demand residual charge. This modification seeks to make the demand locational charge reflect the the investment cost of the transmission system infrastructure to move power from generation to demand, rectifying the current situation where no net locational revenue is recovered from demand.

Based on the TNUoS forecast tables published by National Grid on 19 April 2017 (see http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589939106) based on the year 2021:

	Price	Charging Base	Revenue
Generation Residual	-7.61 GBP/kW	77.8 GW	GBP -592 million

Under the current charging rules, the payment of GBP 592 million to transmission connected generation is funded via the demand residual charge. The smaller charging base of demand means that the “per kW” impact on the demand residual is significantly larger:

	Required revenue	Charging Base	Price
Impact on demand residual	GBP 592 million	45.0 GW	13.17 GBP/kW

Therefore, by setting the reference node in the transport model a distributed node weighted by generation TNUoS, the locational revenue collected from generation will move towards zero. This will allow the generation residual charge to move from a negative number towards zero. This will reduce (or eliminate) the residual payment to generation. Moving the generation residual towards zero will show a significant benefit in reducing the demand residual as illustrated above.

With the current reference node, the forecast generation locational revenue for 2020/1 is forecast at GBP 445 million, whilst the demand locational charge is forecast as (approx.) zero. By moving the reference node, the demand locational charge will rise. Assuming that with the revised reference node, the demand locational revenue would also raise GBP 445 million. An increase in the demand locational revenue would mean that, in order to meet the target revenue, less recovery was required from the demand residual.

	Assumed additional locational revenue	Charging Base	Impact on generation residual
Impact on demand residual	GBP 445 million	45.0 GW	-9.89 GBP/kW

What

The reference node in the DCLF ICRP model needs to be changed such that the demand locational revenue may flex to reflect the costs imposed on the transmission system by the location of demand relative to generation.

By setting the reference node in the DCLF ICRP model to a *distributed generation weighted node*, the total revenue collected from generation would tend towards zero – improving compliance with EU legislation and reducing the magnitude of the generation residual charge.

Note that the application of ALF and shared infrastructure charges may prevent the magnitude of the generation residual falling to zero. However, this change would result in a more cost reflective generation TNUoS charges.

Why

Ofgem has raised concerns about the rising magnitude of residual charges (negative for generation and positive for demand) creating market distortions. This modification will reduce the magnitude of the residual charges. Additional modifications may be required to enhance the cost reflectivity of the locational charge

How

A change to National Grid's ICRP DCLF model would be made to vary the reference node.

Whilst the level of charges would change (moving the residual elements towards zero) the structure of the charges would remain the same, meaning that the impact on National Grid's and users' systems should be low.

2 Governance

Justification for Normal Procedures

Normal governance proposed

Requested Next Steps

This modification should: be assessed by a Workgroup

Changes to transmission charging are complex and may have unforeseen consequences. A proper examination of the changes is recommended to reduce the chance of unforeseen impacts. We therefore believe that the modification will need some assessment by an expert working group.

3 Why Change?

Without a change, the forecast generation residual will become increasingly negative and the forecast demand residual will become continue to increase in value. These have been identified as issues by Ofgem as negative charges do not sit well with the principles of cost reflectivity.

Currently, the only place an increase or decrease in the cost of the transmission system appears to the user is in the demand residual charge which is smeared across all demand customers. This change should make TNUoS charging more cost reflective.

4 Code Specific Matters

Technical Skillsets

Understanding of TNUoS charging and the associated models.

Reference Documents

National Grid's Stand-Alone DCLF ICRP TNUoS Great Britain Transport & Tariff Model USER GUIDE Model Methodology & Operation Version 4.0 March 2011.

5 Solution

The CUSC would be changed such that the definition of the reference node in the DCLF ICRP model is changed to a *distributed generation reference node.*

6 Impacts & Other Considerations

This change has a direct impact on the CUSC.

It would impact the process for setting (calculating) TNUoS charging, although the form of the charges would stay the same presumably meaning that National Grid's system to issue the charges and users' systems dealing with the charges will not require modification. We therefore do not anticipate any changes are required to other codes, nor to users' own systems.

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

This proposal is likely to interact with Ofgem's targeted charging review if they progress with a wider review than the original TCR scope that they have proposed.

Consumer Impacts

Industry and consumers will see more cost reflective pricing which should drive both users' and investors' behaviour to deliver lower costs. In the longer term with will result in a more economic and efficient system to the benefit of GB customers.

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: Improved cost reflective charging is assumed to lead to improvements in competition in generation and demand management.
(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: The modification will allow the revenue from the demand locational charge to flex with the costs imposed on the transmission system by the infrastructure required to move power from generation to demand
(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: The developments in system investments has resulted in the charging modelling being no longer fit for purpose. The TOs, as well as their customers, need a methodology that produces more reflective charges. Rising or falling costs of the

	transmission business should be better reflected in locational revenue and reductions in the magnitude of generation and demand residuals
(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	Positive: The generation locational charge will move towards the levels set out by the EU with a reduced magnitude of the generation residual charge
(e) Promoting efficiency in the implementation and administration of the CUSC arrangements.	None: Should result in no change
*Objective (c) refers specifically to European Regulation 2009/714/EC. Reference to the Agency is to the Agency for the Cooperation of Energy Regulators (ACER).	

8 Implementation

It is suggested that implementation is for the first charging year following any approval to the change granted by the Authority.

Cost should be limited to a change to the DCLF ICRP model.

9 Legal Text

To be developed at the work group.

10 Recommendations

Proposer's Recommendation to Panel

Panel is asked to: Refer this proposal to a Workgroup for assessment.