





UNC Modification	At what stage is this document in the process?
<h1>UNC 0621:</h1> <h2>Amendments to Gas Transmission Charging Regime</h2>	<div style="display: flex; flex-direction: column; gap: 5px;"> <div style="border: 1px solid green; background-color: #008000; color: white; padding: 5px; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 1.2em; margin-right: 5px;">01</span> Modification         </div> <div style="border: 1px solid blue; padding: 5px; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 1.2em; margin-right: 5px;">02</span> Workgroup Report         </div> <div style="border: 1px solid purple; padding: 5px; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 1.2em; margin-right: 5px;">03</span> Draft Modification Report         </div> <div style="border: 1px solid orange; padding: 5px; display: flex; align-items: center; justify-content: center;"> <span style="font-size: 1.2em; margin-right: 5px;">04</span> Final Modification Report         </div> </div>
<p><b>Purpose of Modification:</b></p> <p>The purpose of this modification proposal is to amend the Gas Transmission Charging regime in order to better meet the relevant charging objectives and customer/stakeholder provided objectives for Gas Transmission Transportation charges and to deliver compliance with relevant EU codes (notably the EU Tariff Code).</p>	
	<p>The Proposer recommends that this modification should be assessed by a Workgroup</p> <p>This modification will be presented by the Proposer to the Panel on 15 June 2017. The Panel will consider the Proposer’s recommendation and determine the appropriate route.</p>
	<p>High Impact:</p> <p><u>Shippers All parties that pay NTS Transportation Charges and / or have a connection to the NTS, and National Grid NTS</u></p>
	<p>Medium Impact:</p> <p>N/A</p>
	<p>Low Impact:</p> <p>N/A</p>

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Timetable	
<b>The Proposer recommends the following timetable:</b>	
Initial consideration by Workgroup	07 July 2017 (NTSCMF)
Workgroup Report presented to Panel	<del>21 December 2017</del> <u>18 January 2018</u>
Draft Modification Report issued for consultation	<del>21 December 2017</del> <u>18 January 2018</u>
Consultation Close-out for representations	<del>01 March 2018</del> <u>22 March 2018</u>
Final Modification Report available for Panel	<del>05-29</del> March 2018
Modification Panel decision	<del>19</del> <u>5 March-April</u> 2018

 Any questions?

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## 1 Summary

### What

This modification proposes to introduce a new Gas Transmission Charging regime that produces stable and predictable transportation charging and is compliant with the ~~forthcoming~~ EU Tariff Code ([Regulation 2017/460](#)).

### Why

The Transportation Charging Methodology currently in place for the calculation of Gas Transmission charges, and the methodology to recover [Transmission Owner \(TO\)](#) and [System Operator \(SO\)](#) revenue through Entry and Exit charges, have been in place for a number of years. Whilst there have been some changes in the last ten years, the basic approach to calculating Entry and Exit Capacity charges and the approach to revenue recovery has not substantially changed.

A critique of the current Long Run Marginal Cost (LRMC) methodology has identified that it is too volatile, unpredictable and does not provide stability of charges for Users.

### How

[This modification proposes to introduce changes to the charging framework by way of making changes to UNC TPD Section Y. It may be necessary to update other sections of the UNC TPD \(e.g. Section B, EID Section B\) and these will be accommodated as necessary.](#)

This modification proposes to move from a Reference Price Methodology (RPM) that calculates the capacity prices using the LRMC method to one that is based on a Capacity Weighted Distance (CWD) approach. It also proposes to review other aspects of the charging framework to consider if change is necessary to better meet the required objectives.

It introduces some terminology from the EU Tariff Code, specifically Transmission Services Revenue and Non-Transmission Services Revenue [and Transmission Services Charges and Non Transmission Services Charges](#). The [revenues](#) ~~se~~ will map across to TO and SO revenues thereby not changing the total revenue to be collected through charges. Therefore the overall revenue that the Transmission Charges will recover, in total, will remain the same and the more material change will be [the](#) amendments to the charging methodologies [in calculating the charges](#) that will ~~recover~~ [of](#) the allowed revenues from NTS network Users through the NTS charges.

[This proposal also introduces, for some aspects of this methodology change, some transitional arrangements and mechanisms to review and refine components of the charging framework over time so they continue to better meet the relevant objectives and support the evolution of the GB charging regime.](#)

## 2 Governance

### Justification for Authority Direction

This modification proposal is recommended to be sent to the Authority for direction as it is likely to have a material effect on commercial activities relating to the shipping, transportation and supply of gas because,

if implemented, it is likely to have a material impact on the allocation of charges across NTS networks Users.

## Requested Next Steps

This modification should:

- be assessed by a Workgroup

## 3 Why Change?

- 3.1. The methodology which is currently in place for the calculation of Gas Transmission charges, and the methodology to recover TO and SO revenue through Entry and Exit charges have been in place for a number of years. Whilst there have been some changes in the last ten years, the basic approach to calculating NTS Entry and Exit Capacity charges and the approach to revenue recovery arrangements have not substantially changed. What has been seen is change in the patterns of booking behaviours, and the impact on the charges as a result due to the interactivity inherent within the methodology that were not anticipated.
- 3.2. As a result of changing behaviours, such as increased uptake in short term zero priced capacity, there is an increase in reliance on commodity charges to recover TO revenue. Other charges, such as the NTS Optional Commodity charge (also referred to as “Shorthaul”) have also seen a significant increase in its use, which has impacted on other charges in a way that was not originally envisaged.
- 3.3. The current RPM (including the adjustments applied in order to calculate capacity charges) produces charges that are volatile and unpredictable. This causes challenges for investment decisions and in predicting operational costs for connected parties year on year, and as such is a key area to be addressed. The proposed new RPM resolves this issue by narrowing the range of prices and as such making them more predictable and also makes the RPM more relevant to how the NTS is used and expected to be used.-
- 3.4. As a result of changing the RPM, any adjustments, discounts and other charges must be reviewed in order to avoid unintended consequences and to ensure a clear impact assessment (including any Ofgem Impact Assessment) can be carried out on the total impact of these adjustments, discounts and other charges to NTS customers and to the end consumer.
- 3.5. This modification proposal considers EU compliance with the EU Tariff Code which has a deadline to implement the changes of 31 May 2019. Price changes would apply from 1 October 2019.
- 3.6. These proposals also establishes a framework for review and update that through reviewing and updating key inputs to the newly established RPM will further the objectives of the RPM.
- 3.7. This modification aims to simplify the methodology, limiting aspects of the methodology whereby some charges can materially impact other charges and also eliminating the influence between Transmission and Non Transmission.
- 3.8. Within the collection of revenue there are some changes to the terminology used to assign the revenue for the purposes of ultimately calculating charges. These changes are required by the EU Tariff Code. This relates to mapping TO Revenue and SO Revenue to Transmission Services Revenue and Non Transmission Services Revenue. This does not affect the actual allowed revenue National Grid will be required to recover through the charges.

- 3.9. There are a number of targeted charges in the current methodology and it is necessary to consider which revenue they will contribute towards:
- 3.9.1. The Distribution Network (DN) Pensions Deficit Charge and Meter Maintenance Charge, under the EU Tariff Code (Article 4), do not fall into the specific criteria for Transmission Services. This modification proposes that these will be classified as Non-Transmission Services charges thereby contributing towards Non-Transmission Services Revenue.
- 3.9.2. The St. Fergus Compression charge will be a Non-Transmission Services charge. The methodology used to calculate the St. Fergus Compression Charge is not proposed to be reviewed at this stage.
- 3.9.3. The methodologies to calculate these charges (DN Pensions Deficit, Meter Maintenance and St. Fergus Compression) are not proposed to be reviewed at this time. Whilst these could be considered as either Transmission Services or Non-Transmission Services, providing it is approved by the National Regulatory Authority (NRA), it is proposed this is a pragmatic way to charge for these items.
- 3.10. Within the EU Tariff Code there are requirements to apply discounts for storage capacity, where that discount must be at least 50%. This minimum discount is specific to storage in order to avoid double charging and in recognition of the general contribution to system flexibility and security of supply of such infrastructure.
- 3.11. Multipliers are specified under the EU Tariff code (Article 13) for Interconnection Point (IP) quarterly standard capacity products and for IP monthly standard capacity products are no less than 1 and no more than 1.5 and for IP daily standard capacity products and IP within-day standard capacity products are no less than 1 and no more than 3. For the IP daily standard capacity products and IP within-day standard capacity products the multipliers may be less than 1 but higher than 0 or higher than 3, where duly justified.
- 3.12. Multipliers for IPs need to be consulted on each year (Article 28 of the EU Tariff code).
- 3.13. The approach for pricing of Interruptible capacity will be consistent with the EU Tariff Code Article 16 and applied to all points.
- 3.14. We are proposing provisions to apply for Entry Capacity allocated before the implementation of this modification that will have been booked for 1 October 2019 or beyond.
- 3.14.1. This will include Existing Contracts, as outlined in Article 35 in EU Tariff Code where- the qualification is, if the “contract or capacity booking concluded before the entry into force of the EU Tariff Code – 6 April 2017, such contracts or capacity bookings foresee no change in the levels of capacity and/or commodity based transmission tariffs except for indexation, if any”.
- 3.14.2. This only applies to Entry Capacity charges. It does not apply to capacity to Exit Capacity charges. Exit Capacity charges currently change each October. Nor does it apply to the Entry and Exit commodity charges as they currently change at least twice a year in April and October.

### **Aspects of the GB Charging Regime where there are no proposals for change:**

The following is a list of items for which changes are not being proposed at this time but could be the next steps in the evolution of the GB charging regime.

- Auction Structure – All timings for auctions will be as per now or as per CAM changes.
- Entry/Exit Split – Keep as 50:50 split.
- Gas Year/Formula Year – Formula Year is April to March and Gas Year is October to September, will keep these as currently are.
- DN Pensions Deficit Charge – No change to the calculation or the application of the charge.
- St. Fergus Compression Charge – No change to the calculation or the application of the charge.

- Categorisation of Entry and Exit Points – Maintain the link to the Licence for categorisation.
- Seasonal Factors – Not used in current methodology and propose not to introduce.
- Fixed Pricing – As per MOD 611 Amendments to the firm capacity payable price at IPs.
- Allowed Revenue – No change as per the Licence.
- Principles and application of Interruptible – As per MOD 500 EU Capacity Regulations - Capacity Allocation Mechanisms with Congestion Management Procedures.

### For information only:

As an overall package this updated draft modification proposal is an update reflective of current views and following discussions at NTSCMF with industry stakeholders. This ~~and can is not intended to be seen as a final view, which will be updated~~ evolve through assessment within the UNC modification process where there are areas requiring additional detail or discussion. These are highlighted in the relevant parts of the solution. ~~Some areas represent firmer positions, however all areas will be discussed and debated to establish a charging framework that is appropriate for GB. Accordingly, the modification will be updated periodically to reflect emerging thinking.~~

## 4 Code Specific Matters

### Reference Documents

There are summary documents available on each of the topics (mentioned in the solution section of the modification proposal) which have been discussed at NTSCMF and sub-groups related to the gas charging review, which are available at: <http://www.gasgovernance.co.uk/ntscmf/subg1page> and <http://www.gasgovernance.co.uk/ntscmf/subg1model>.

A CWD Model and User Guide have been produced which can be found at:  
<http://www.gasgovernance.co.uk/ntscmf>.

A Postage Stamp model is also available to be able to do a comparison of the prices in each of these models (found at the same location).

A Non-Transmission Services model has been produced which can be found at:  
<http://www.gasgovernance.co.uk/ntscmf>

Uniform Network Code (UNC) Section Y:

[http://www.gasgovernance.co.uk/sites/default/files/TPD%20Section%20Y%20-%20Charging%20Methodologies\\_29.pdf](http://www.gasgovernance.co.uk/sites/default/files/TPD%20Section%20Y%20-%20Charging%20Methodologies_29.pdf)

UNC European Interconnection Document (EID):

<http://www.gasgovernance.co.uk/EID>

EU Tariff Code:

<http://www.gasgovernance.co.uk/sites/default/files/EU%20Tariff%20Code%20-%20final%20clean.pdf>

Implementation Document for the Network Code on Harmonised Transmission Tariff Structures for Gas (Second Edition)

[https://www.entsog.eu/public/uploads/files/publications/Tariffs/2017/TAR1000\\_170928\\_2nd%20Implementation%20Document\\_Low-Res.pdf](https://www.entsog.eu/public/uploads/files/publications/Tariffs/2017/TAR1000_170928_2nd%20Implementation%20Document_Low-Res.pdf)

Uniform Network Code (UNC) Section B:

[http://www.gasgovernance.co.uk/sites/default/files/TPD%20Section%20B%20-%20System%20Use%20&%20Capacity\\_55.pdf](http://www.gasgovernance.co.uk/sites/default/files/TPD%20Section%20B%20-%20System%20Use%20&%20Capacity_55.pdf)

NTS Transportation Statements:

<http://www.gasgovernance.co.uk/ntschargingstatements>

Customer and Stakeholder Objectives:

<http://www.gasgovernance.co.uk/sites/default/files/NTS%20Charging%20Review%20Objectives%2006Sep16%20v1.0.pdf>

Gas Transmission Charging Review (GTCR) and associated update letters:

<https://www.ofgem.gov.uk/gas/transmission-networks/gas-transmission-charging-review>

## Knowledge/Skills

An understanding of the Section Y Part A within the UNC, NTS Transportation Statements, the EID within the UNC, Section B within the UNC, the EU Tariff code, GTCR documentation and the customer/stakeholder objectives developed within NTSCMF would be beneficial.

## Definitions

<b><u>Term (Abbreviation)</u></b>	<b><u>Description</u></b>
<b><u>Reference Price Methodology (RPM)</u></b>	<p><u>The methodology applied to the part of the transmission service revenue to be recovered from capacity based transmission tariffs with the aim of deriving reference prices. Applied to all entry and exit points in a system.</u></p> <p><u>The RPM therefore is the framework to spread certain costs / revenues (relevant to the methodology in place) to the Entry and Exit points and thereby on to network users.</u></p>
<b><u>Reference Price</u></b>	<p><u>Price for a capacity product for firm capacity with a duration of one year, which is applicable at entry and exit points and which is used to set capacity based transmission tariffs. This will be produced in p/kWh/a (pence per kWh per annum)</u></p>
<b><u>Reserve Price</u></b>	<p><b><u>Reserve Price for Yearly standard capacity</u></b> = the Reference Price</p> <p><b><u>Reserve Price for Non- yearly standard capacity</u></b> is calculated by <u>applying any multipliers and seasonal factors (if applicable).</u></p> <p><u>This will be produced in p/kWh/d (pence per kWh per day).</u></p>
<b><u>Multipliers</u></b>	<p><u>The factor applied to the respective proportion (runtime) of the</u></p>

	reference price in order to calculate the reserve price for non-yearly standard capacity product
<b><u>Capacity Weighted Distance (CWD) Model</u></b>	<p>The CWD approach fundamentally requires three main inputs:</p> <ul style="list-style-type: none"> <li>• <u>A revenue value is required, which will be the target revenue required to be recovered from Transmission Services;</u></li> <li>• <u>A distance matrix for the average connecting distances on the NTS; and</u></li> <li>• <u>A capacity value for each Entry and Exit point that will be the Forecasted Contracted Capacity (FCC) (which is mentioned later in this section).</u></li> </ul> <p>The CWD model produces the Transmission Services reference prices and with additional adjustments produces the Transmission Services reserve prices.</p>
<b><u>Long Run Marginal Costs (LRMC) Model</u></b>	<p>This is the current underlying RPM used in the calculation of the <u>Entry and Exit Capacity Prices</u>. Whilst there are different approaches in Entry and Exit as to how secondary adjustments are applied, the underlying LRMC principles are there in both. The LRMC approach is an investment focused methodology where the intention is to have strong locational signals to facilitate decision making. More information is available in TBD Section Y of UNC.</p>
<b><u>Transmission Services</u></b>	<p>The regulated services that are provided by the transmission system operator within the entry-exit system for the purpose of <u>transmission</u>.</p>
<b><u>Non-Transmission Services</u></b>	<p>The regulated services other than transmission services and other than services regulated by Regulation (EU) No 312/2014 that are provided by the transmission system operator;</p>
<b><u>Transmission Services Revenue</u></b>	<p>The part of the allowed or target revenue which is recovered by <u>transmission tariffs</u>.</p>
<b><u>Non-Transmission Services Revenue</u></b>	<p>The part of the allowed or target revenue which is recovered by <u>non-transmission tariffs</u>.</p>
<b><u>Forecasted Contracted Capacity (FCC)</u></b>	<p>FCC is the capacity input to the RPM that will be used Transmission Services capacity charges calculation that for this proposal will be <u>through a CWD methodology</u>. There should be an FCC value for every Entry and Exit point.</p>
<b><u>Existing Contracts (ECs) (for the purposes of this</u></b>	<p>ECs relate to Long Term Entry capacity allocated before 6 April</p>



<u>modification)</u>	<u>2017 (Entry into Force of EU Tariff Code) and Long Term Entry capacity allocated before the implementation of this modification. -</u>
<u>Network Distances (for the purposes of modelling in the RPM)</u>	<u>A matrix of distances used in the RPM that are the pipeline distances on the NTS.</u>
<u>Target Revenue</u>	<u>This is the revenue required to be recovered from a particular set of charges.</u>

## 5 Solution

This modification proposal will seek to amend Section Y Part A (NTS Charging Methodologies) of the UNC, by changing the methodology for the calculation of gas transmission charges. Changes to Section B (System Use and Capacity) of the UNC and UNC European Interconnection Document (EID) Section B may be required and this will be kept under review and the modification updated accordingly.

The starting point for this modification is a single methodology for all points where possible (e.g. IP and Non-IP and Entry / Exit). Details for each of the charges are mentioned in the proposals in this section. This may change as the modification is finalised depending on the approach chosen for some of the charges mentioned in this proposal.

This modification has a broad scope and covers a number of potential combinations of how to define certain charges and how they could be calculated and applied.

As the application (e.g. Interconnection Point (IP) vs Non-IP, or any discounts or exemptions) will be discussed through the further development and refinement of the solution and options in the development process, this modification states initially that there is one single approach for all charging arrangements for GB.

Where there is a definite decision on the solution proposed in this modification, this will be highlighted. Where there is a default position for further discussions to develop solutions with NTSCMF and sub-groups these will also be identified.

### Mapping of the ~~TO~~ revenue and ~~SO~~ revenue to Transmission Services revenue and Non-Transmission Services revenue

Within the collection of revenue there are some changes to the terminology used to assign the revenue. These changes are required by the EU Tariff Code. This does not affect the actual allowed revenue National Grid will be required to recover through the charges.

TO Revenue currently includes DN Pensions Deficit Charge and Meter Maintenance Charge but under the EU Tariff Code (Article 4) these do not fall into the specific criteria for Transmission Services. As the DN Pensions deficit charge and Meter Maintenance charge are targeted specific charges this modification is proposing that these will be collected as Non-Transmission Services charges, thereby contributing towards Non-Transmission Services Revenue. The methodologies to calculate these are not proposed to be reviewed at this stage. Whilst these could be considered as either Transmission Services or Non-Transmission Services, providing it is approved by the National Regulatory Authority (NRA), it is proposed this is a pragmatic way to charge for these items.

~~Within the SO suite of charges currently there is a St. Fergus Compression charge. The methodology used to calculate this is not proposed to be reviewed at this stage. Revenue from St. Fergus Compression, which will be a Non-Transmission Services charge, will therefore be removed from the Non-Transmission Services Revenue before the main Non-Transmission Services charges are calculated.~~

~~The amounts to be recovered through these charges do not amend the overall amounts that would be required to be recovered through the remaining charges although there will be some minor UNC amendments required to reflect their inclusion under Non-Transmission Services rather than Transmission Services.~~

### **Transmission Services Charges**

Transmission Services charges are collected via:

- Transmission Services Capacity charges made up of;
  - Transmission Entry Capacity charges;
  - Transmission Exit Capacity charges;
- Transmission Services Entry Revenue Recovery charge;
- Transmission Services Exit Revenue Recovery charge;
- Avoiding inefficient bypass of the NTS charge

### **Non-Transmission Services Charges**

Non-Transmission Services charges are collected via:

- Non-Transmission Services Entry and Exit Charges;
- St Fergus Compression Charge (refer to Why Change? paragraph 3.9);
- NTS Metering Charge (refer to Why Change? paragraph 3.9);
- DN Pensions Deficit charge (refer to Why Change? paragraph 3.9)

### **Transmission Services Charging – Capacity Charge Calculation**

~~Capacity charging requires a RPM as the core part of the calculation for Capacity prices. This RPM is the framework to spread the costs / revenues (relevant to the methodology in place) to the Entry and Exit points and thereby on to network users.~~

~~The current methodology used to calculate the capacity prices, prior to any adjustments, is the LRMC methodology. Discussions around different RPM's have taken place in recent NTSCMF meetings in order to question whether the current LRMC methodology is the most appropriate for a NTS that is not growing. The LRMC model uses strong locational signals linked to continued investment, a principle which Network Users considered as being of limited use and not a significant factor in decision making due to the lack of expansion of the NTS.~~

~~A methodology for the calculation of the Transmission Services Charges would need to be appropriate to the way the NTS is used and expected to be used and marginal pricing is not considered the most~~

~~appropriate currently nor looking into the near future. Based on a review (<http://www.gasgovernance.co.uk/ntscmf/subg1model>) of the sensitivity of the LRMC approach to changing certain inputs, the LRMC is more unpredictable, yielding more volatile results than other approaches, for example a CWD approach.~~

The ~~industry working groups concluded that a~~ methodology based on CWD would better suit the current and future expectations for the NTS and maximising its use (driven through market behaviour) rather than using a RPM built on the foundation of continued expansion.

Through ~~an~~ assessment of RPM's (~~refer to <https://www.gasgovernance.co.uk/ntscmf/subg1model>~~), the main alternative considered ~~from the current method~~ was the CWD model. By design this approach is generally more predictable, less volatile and more stable in nature and is more suited to a system that is about use and revenue recovery associated to use rather than linked to investment (marginal pricing).

This modification ~~is propos~~esing a CWD approach which will continue to provide some locational diversity in charges through the use of locational capacity and the average distances applied under the CWD approach.

~~The proposed CWD methodology will be compared against a standardised CWD counterfactual model as described in the EU Tariffs Code at the appropriate time.~~

One RPM will be used for the calculation of capacity prices for all points on the system. ~~and this approach is EU compliant. This modification is not proposing to have multiple RPMs within the GB Transportation charging framework. The RPM produces Entry and Exit Capacity reference prices for the applicable gas year which in turn through the relevant adjustments and calculation steps, will determine the Entry and Exit Capacity reserve prices.~~

## **Final reference prices**

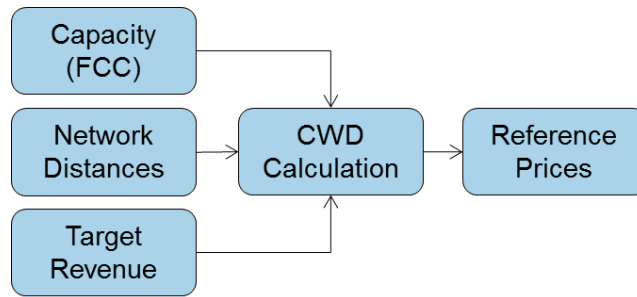
~~The calculation of the final reference price for a given Entry or Exit point cannot be zero. If this occurs as a result of the FCC value or the Existing contracts (EC) influencing the CWD calculation then the reference price to be used for such points, the nearest non zero priced Entry point for Entry prices, or the nearest non zero priced Exit point for Exit prices shall be used. The distance is the shortest distance based on the distance matrix from the relevant entry or exit point to the nearest non zero priced entry or non zero priced exit point respectively.~~

## **Calculations within the CWD Model**

### **Counterfactual CWD**

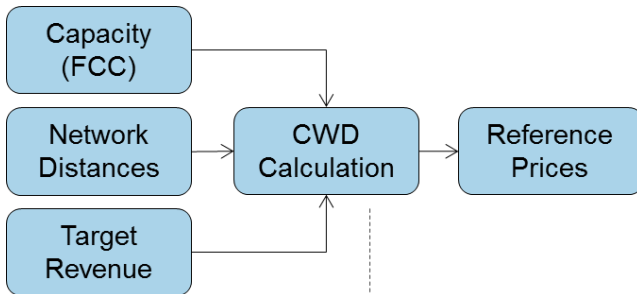
The CWD approach fundamentally requires three main inputs (counterfactual CWD model):

- ~~A revenue value is required, which will be linked to the allowed revenues National Grid will be required to recover for Transmission Services;~~
- ~~A distance matrix for the average connecting distances on the NTS; and~~
- ~~A capacity value for each Entry and Exit point that will be the Forecasted Contracted Capacity (FCC) (which is mentioned later in this section).~~



**Proposed CWD Model for calculating Entry and Exit Capacity reference prices:**

- Target Entry or Exit Transmission Services Revenue - Revenue which is Allowed Revenue net of known Existing Contracts (EC) revenue
- Network Distances - A distance matrix for the average connecting distances on the NTS
- Capacity (FCC) - FCC (by point) net of EC (by point) capacity booked to recover the target Entry or Exit Transmission Services revenue



The CWD Calculation has some steps within it:  
 -Weighted Average Distance (WAD)  
 -Weighted Cost (WC)  
 -Target Revenue by point

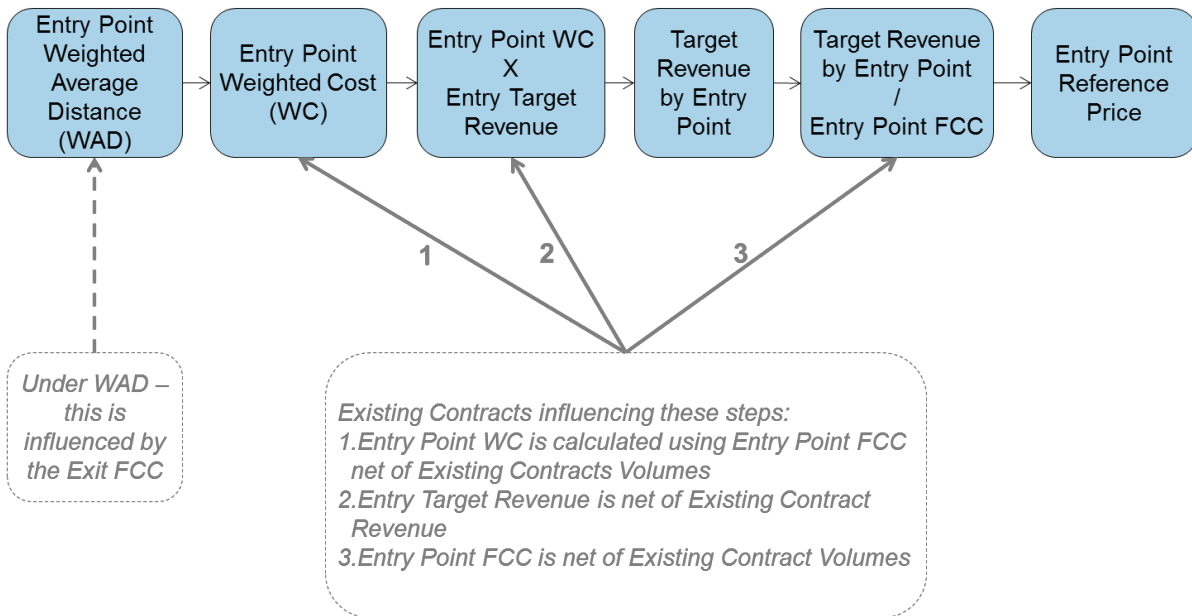
**Key steps in the CWD calculations:**

	<u>Entry Capacity Calculation</u>	<u>Exit Capacity Calculation</u>
<u>Weighted Average Distance (WAD)</u>	$\frac{(\text{Sumproduct Exit Point FCC} \times \text{Distance to Entry Point})}{\text{Sum Exit Point FCC}}$	$\frac{(\text{Sumproduct Entry Point FCC}^{\#} \times \text{Distance to Exit Point})}{\text{Sum Entry Point FCC}^{\#}}$
<u>Weighted Cost (WC)</u>	$\frac{\text{Entry Point FCC}^* \times \text{WAD}}{(\text{Sumproduct Entry Point FCC}^* \times \text{WAD})}$	$\frac{\text{Exit Point FCC} \times \text{WAD}}{(\text{Sumproduct Exit Point FCC} \times \text{WAD})}$
<u>Target Revenue by point (TRP)</u>	<u>Entry Target Revenue x WC</u>	<u>Exit Target Revenue x WC</u>
<u>Reference Price (RefP)</u>	<u>Entry TRP / Entry Point FCC*</u>	<u>Exit TRP / Exit Point FCC</u>

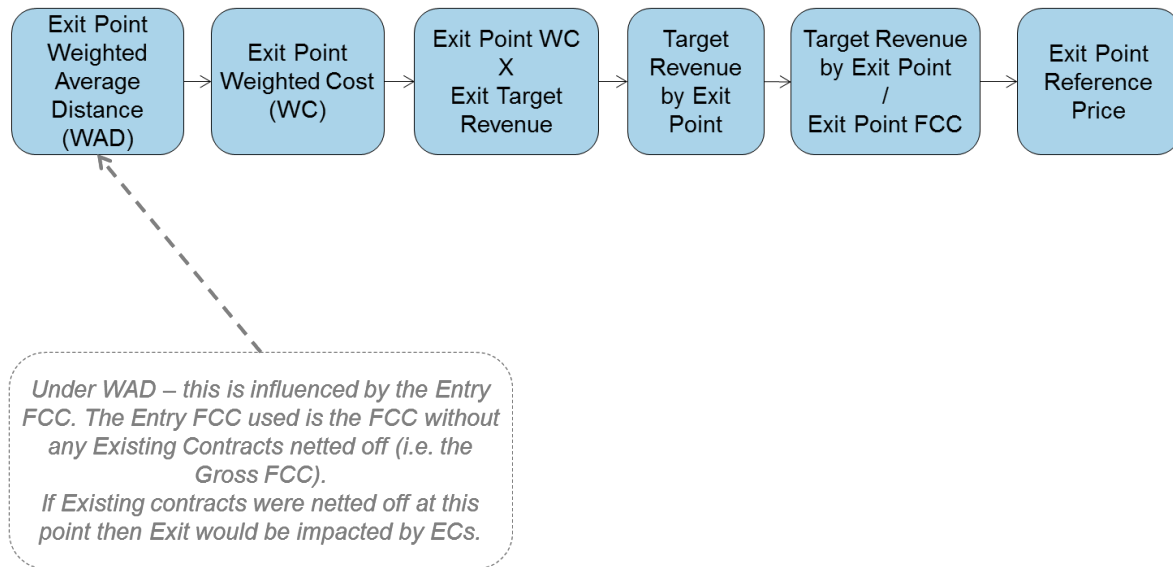
<sup>#</sup>Entry Point FCC – this is Gross Entry Point FCC (not reduced by Existing Contracts)

\*Entry Point FCC – this is the Entry Point FCC net of Existing Contract Capacity

**Entry Reference prices are calculated in the following steps in the CWD model:**



**Exit Reference prices are calculated in the following steps in the CWD model:**



## **Forecasted Contracted Capacity (FCC)**

For 2019 the FCC will be the Obligated Values which are within the Licence (as specified in Table 4B and Table 8) against the relevant Entry and Exit Points (one value for each Entry and Exit point).

Beyond 2019 we will have an approach that ensures:

- FCC is reviewed [annually] and updates considered, and updated in [appropriate charging statement or methodology]

FCC will be reviewed as the behavioural changes of bookings under the updated charging regime are seen, to align the FCC closer to bookings.

~~As they are in the current regime, capacity reserve prices will be produced in p/kWh/d.~~

~~The CWD approach fundamentally requires three main inputs:~~

- ~~A revenue value is required, which will be linked to the allowed revenues National Grid will be required to recover;~~
- ~~A distance matrix for the average connecting distances on the NTS; and~~
- ~~A capacity value for each Entry and Exit point that will be the Forecasted Contracted Capacity (FCC) (which is mentioned later in this section).~~

~~For information only: As defined in the EU Tariff Code the reference price means the price for a capacity product for firm capacity with a duration of one year, which is applicable at entry and exit points and which is used to set capacity-based transmission tariffs.~~

~~For information only: A CWD Model and User Guide have been produced which can be found at: <http://www.gasgovernance.co.uk/ntscmf>. A Postage Stamp model is also available to be able to do a comparison of the prices in each of these models (found at the same location).~~

## Capacity Reserve Prices produced from Capacity Reference Prices (Transmission Services) Adjustment methodology to charges (Transmission Services)

~~There are a number of adjustment methodologies that could be applied to the Transmission Services charges that, in combination would recover the Transmission Services Revenues. Transmission Services charging methodology adjustments may include and are not limited to RPM adjustments.~~

~~Adjustments or separate charges can be applied in the calculation of the Entry and Exit Capacity Reserve Prices. These can serve a number of functions such as to acknowledge the any potential risk associated to the type of Entry or Exit Capacity, to facilitate the recovery of revenues where relevant or beneficial to do so, to encourage behaviours along with ensuring National Grid fulfils relevant NTS obligations.~~

~~Adjustments or separate charges may serve to recover revenues where relevant or beneficial to do so, to encourage behaviours along with ensuring National Grid fulfils relevant NTS obligations.~~

~~Adjustments which will be applied to the reference prices produced from the proposed CWD methodology in order to calculate the reserve prices are:~~

- ~~• Examples which will be discussed during this modification process and how they are applicable, are:~~
- ~~• RPM adjustment;~~
- Multipliers;
- Specific Capacity Discounts;
- Interruptible pricing;
- ~~• Seasonal Factors~~
- ~~• Other adjustments or charges~~

Transmission Services Capacity reserve prices will be produced in p/kWh/d

The capacity reserve prices will be calculated each year based on the latest available set of inputs and, once published these will be the capacity reserve prices applicable for the relevant gas year.

## **Non-Transmission Services Charging**

~~For some aspects of the Non-Transmission Services Charging there is no proposal to change the methodology of how certain charges will be calculated. The revenue from these will contribute towards Non-Transmission Services Revenue:~~

- ~~• DN Pensions Deficit Charge~~
- ~~• Meter Maintenance Charge~~
- ~~• St. Fergus Compression Charge~~

~~Before the Non-Transmission Services charges are calculated the total Non-Transmission Services revenue excluding the DN Pensions, Meter Maintenance and the St. Fergus revenue will be calculated.,~~

~~Non-Transmission Services Revenue is to be recovered through a flow based charge as a flat unit price for all relevant or qualifying Entry and Exit Points, which may be for all flows on the NTS as all flows do use the NTS.~~

~~Therefore the denominator for the calculation of the Non-Transmission Services charges will be developed alongside this Modification proposal. Through the development of this modification proposal~~

~~this will be discussed and debated as to whether this is appropriate and if other positions better meet the collected objectives the modification proposal will be refined and updated accordingly.~~

~~The main Non-Transmission Services charge will be produced in p/kWh, the same units as the current SO Commodity charge.~~

~~For information only: A Non-Transmission Services model has been produced which can be found at: <http://www.gasgovernance.co.uk/ntscmf>~~

## **Revenue Reconciliation**

~~A separate under or over revenue recovery (otherwise known as the “K” value) will be calculated for Transmission Services and Non-Transmission Services. This will be different to the TO and SO “K” values however the principle of reconciling Transmission Entry and Exit revenues separately will remain. It is necessary to include in this modification to ensure this is an approach populated in the UNC, to be approved by the NRA, that preserves the reconciliation between the two newly established terms (Transmission Services and Non-Transmission Services).~~

### ***Transmission Services Revenue:***

~~It is proposed to maintain 50/50 split between Entry and Exit (for the purposes of allocating revenues to the charges to recover Transmission Services Entry and Exit Revenues). It is also proposed to maintain the reconciliation of Entry and Exit for Transmission Services, like the current approach for TO charges. This would continue to mean that Entry and Exit, under Transmission Services, when reconciled would not result in Entry impacting Exit or vice versa.~~

~~The applicable years Transmission Service Revenue will be split 50:50 between revenue to collect on Entry Capacity charges and revenue to collect on Exit Capacity charges. This value will then be added to any under/over recovery (K value) which was calculated in y-2 (two years ago) and split between Entry and Exit in the correct proportion, to make the applicable revenue which will be used in the CWD model to calculate the capacity charges.~~

### ***Non-Transmission Services Revenue:***

~~The applicable years Non-Transmission Service Revenue is added to any total (Entry and Exit) under/over recovery (K value) which was calculated in y-2, to give the applicable revenue which will be used in the Non-Transmission Services model to calculate the Non-Transmission Services charges. One K value will be produced for Non-Transmission Services Revenue.~~

## **Specific Capacity Discounts**

~~This modification proposes to discount the capacity prices for Storage sites which are produced from the CWD model by 50%. No other specific capacity discounts will be applied (refer to Why Change? paragraph 3.10).~~

~~The storage discount will be based on locations where the type of Entry point/Offtake is designated as a ‘Storage Site’ in the Gas Transporter Licence (the “Licence”), Table 4B and Table 8 (the same values which will be used for the FCC).~~

~~This modification proposal is starting with a single GB approach. Contained within the EU Tariff Code there are requirements to apply discounts for storage capacity, where that discount must be at least 50%. This minimum discount is specific to storage in order to avoid double charging and in recognition of the general contribution to system flexibility and security of supply of such infrastructure.~~



~~The storage discount will be based on locations where the type of Entry point/Offtake is designated as a 'Storage Site' in the Gas Transporter Licence (the "Licence"), Table 4B and Table 8.~~

~~The EU Tariff Code (Article 9) also allows for discounts under certain conditions (e.g. Entry points from LNG facilities and at Entry Points from and Exit Points to infrastructure ending isolation) however does not mandate them. The level and application of discounts to all parties, and their impact on other NTS customers, will be discussed as part of this modification proposal.~~

~~For information only — The storage discount is applied to the capacity reference price which reduces the revenue that will be collected based on the expected capacity bookings which means there is an expected under-recovery of revenue. An action can be taken at this point to account for this expected shortfall, e.g. this could be via an adjustment to the revenue input to the chosen reference price model or a unit price adjustment applied either to the reference price or the reserve prices. Some of these options would still be subject to the storage discount and some would apply equally to all locations. This will be discussed as part of the Adjustment Methodologies to charges section of this modification proposal. This process would apply equally to other sites or types where discounts are applied.~~

~~For information only — A separate UNC modification will be raised for splitting relevant points on the NTS to identify different categories of capacity.~~

## Multipliers

Multipliers are applied after the Reference Prices have been calculated to produce the Capacity Reserve Price and are one of the adjustments that can be applied to produce the Capacity Reserve Price for the particular Entry or Exit Capacity (refer to Why Change? paragraph 3.11).

Multipliers shall not be zero for any capacity type or product.

~~Multipliers can be greater or less than 1 so they could increase or decrease the resulting reserve price relative to the reference price. Different multipliers can be applied to the different capacity products (i.e. Quarterly, Monthly, Daily) and could vary at different Entry or Exit points. They can also be applied to Entry and Exit differently.~~

Multipliers are not proposed to be used for the purposes of managing revenue recovery.

Multipliers shall be calculated on an ex-ante basis ahead of the applicable year.

The applicable multipliers for a given gas year will be consulted on each year (refer to Why Change? paragraph 3.12). Once approved, they will be published alongside the reserve prices in the [charging statement].

Until such time as these values are decided upon for the applicable charging year and updated into the [charging statement] all Entry and Exit products shall have a multiplier of [1] applied in the calculation of the reserve prices.

~~Multipliers can be perceived in different ways by different users and can be used in a charging framework for a number of reasons (e.g. could be used as an incentive to book Long Term (LT) capacity could be used to aid revenue reconciliation, or could be a way of reflecting potential scarcity of capacity and the risk waiting until the day to book). A discussion needs to take place as to what is the purpose of multipliers and a framework developed consistent with this.~~

~~For information only: Multipliers are specified under the EU Tariff code (Article 13) for IP quarterly standard capacity products and for IP monthly standard capacity products are no less than 1 and no more than 1.5 and for IP daily standard capacity products and IP within day standard capacity products are no less than~~

~~1 and no more than 3. For the IP daily standard capacity products and IP within-day standard capacity products the multipliers may be less than 1 but higher than 0 or higher than 3, where duly justified.~~

~~Multipliers for IPs need to be consulted on each year (Article 28 of the EU Tariff code), this modification proposes that the methodology for the calculation of the multipliers will be within UNC Section Y Part A but the actual values for the multipliers will be contained within a separate document.~~

~~Multipliers will be discussed and this modification proposal will be updated with the outcomes of the discussions.~~

## Interruptible

The pricing of Interruptible capacity will change from the current pricing approach. ~~be reviewed within this modification proposal, but the principles and the application of Interruptible capacity will not be amended.~~

Interruptible capacity for Entry and Off-peak capacity Exit shall not be priced at zero.

The changes proposed permit an adjustment to the relevant firm entry or exit reserve price in the calculation of a non-zero reserve price and the calculation of that reserve price for interruptible products (refer to Why Change? paragraph 3.13).

The calculation will take the form of an ex-ante discount applied to the reserve prices for the corresponding firm capacity products (the day ahead firm price on Entry and the daily firm price on Exit).

The level of the adjustment will be subject to an annual consultation process. The adjustment applied will be proportional to the probability of interruption and will be forward looking based upon an expectation of interruption over the coming year. An adjustment factor (A factor) may also be applied to reflect the estimated economic value of the product which will be determined as part of the consultation. Together the probability of interruption and the adjustment factor make up the adjustment to be applied to the price of the equivalent standard firm capacity product.

The adjustment for Entry Points and Exit Points will be based on the same value given in the [Charging Statement].

Recognising the ex-ante interruptible price will be less than the price of the equivalent standard firm capacity product the value will be subject to the required consultation.

~~A single approach for GB is the starting proposal for this modification which as a consequence means that all points will be prices based on Article 16 of the EU Tariff Code, which states that for IPs there will be a probability of Interruption to calculate the Interruptible price.~~

~~The pricing of interruptible will be further developed as part of this Modification proposal.~~

## Forecasted Contracted Capacity (FCC)

~~A FCC value is a necessary and fundamental input into the Transmission Services capacity charges calculation. There needs to be a FCC for every Entry and Exit point. The term FCC comes from the EU Tariff Code however it is not a defined term under the EU Tariff Code and will require additional work to relate this to the most appropriate method for GB.~~

~~The values of the FCC are very influential on the resulting prices from the RPM and have the potential to drive the necessity or weight on other elements within the Transmission Services capacity charges calculation.~~

~~An appropriate methodology to determine FCC will be developed as part of this Modification proposal, there are a number of potential options to be discussed.~~

## Avoiding In-efficient bypass of the NTS (AIBoNTS)

There is a benefit of having such a product for avoiding in-efficient bypass of the NTS, providing its objectives, calculation and application are relevant to the overall methodology. ~~This product will be developed alongside all elements of the charging methodology under this modification.~~

The AIBoNTS calculation, depending on the final design of the charge, will need to be relevant to all the other discounts which are applied and is still being reviewed within the context of all other aspects of the methodology.

AIBoNTS will be a Transmission Services product and will contribute to the Transmission Services Revenue. The AIBoNTS charge could act as a discount to certain Transmission Services charges. The nature of the discount is subject to further discussion via NTSCMF.

Costs will be updated to the relevant applicable Tariff year and updated each year. The AIBoNTS charge will not be fixed at any point.

The formula that will calculate the specific rates for the applicable year will be published and updated each year in the [charging statement] reflective of the relevant updates in line with the methodology.

Relevant inputs, such as costs, load factor and a review of the pipe diameters to use, can be updated each year. There will also be a distance limit over which the AIBoNTS can be attained. This distance cap shall be [50]km.

Any distances between nominated Entry Points (non storage) and Exit Points (non storage), greater than the cap shall not be eligible for AIBoNTS charges.

## Seasonal Factors

Seasonal Factors are not proposed to be used in the proposed CWD methodology model.

~~Where seasonal factors are applied (linked to article 13 of EU Tariff Code) for IPs these will be subject to consultation each year (in accordance with article 28 of the EU Tariff Code).~~

## Existing Contracts (EC)

Capacity booked before the implementation date of this modification and revenue associated with those bookings will be removed from the Entry capacity input into the CWD model and the Entry Target Revenue for the entry calculations under CWD before the reference prices are calculated (refer to Why Change? paragraph 3.14).

~~Existing contract provisions (Article 35 in EU Tariff Code) are applicable if the “contract or capacity booking concluded before the entry into force of the EU Tariff Code — 6 April 2017, such contracts or capacity bookings foresee no change in the levels of capacity and/or commodity based transmission tariffs except for indexation, if any”.~~

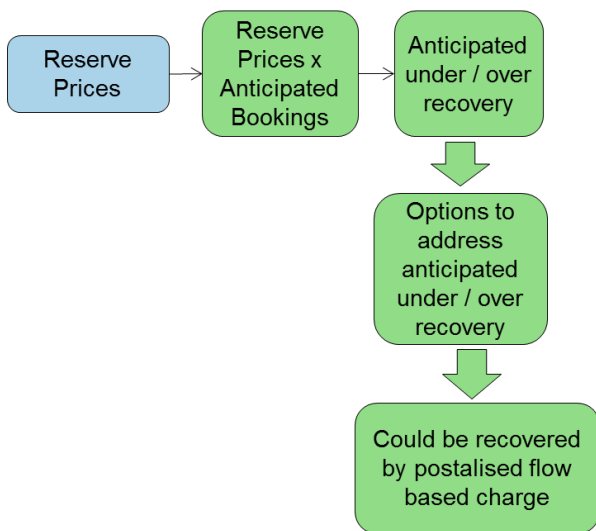
~~It does not apply to capacity at Exit points as charges change each October nor Entry and Exit commodity charges as they change at least twice a year in April and October.~~

~~As part of this modification it will be necessary to consider the charges or adjustments or alternative charging arrangements that it may be permissible to levy on Existing Contracts.~~

## Transmission Services Revenue Recovery Charges

When the reserve prices which will be applicable for the following gas year are produced from the CWD model there will be a proportion of revenue which could be under/ over recovered by those capacity charges when compared to the target Transmission Services revenues. This will require a revenue recovery mechanism to be applied. This will be recovered by Transmission Services Entry and Exit Revenue Recovery charges.

The Transmission Services Revenue Recovery charge will be calculated after the reserve prices have been calculated and will be calculated as follows:



The Anticipated Bookings will be based on National Grid's forecast of capacity bookings and therefore used to forecast the anticipated under or over recovery.

The transmission services revenue recovery mechanism is proposed to be based on a denominator of flows, which excludes Storage flows unless it is flowed as "own use" gas at the Storage point. All other flows shall pay the Transmission Services revenue recovery mechanism charge.

Further consideration is to be given to the application of Transmission Entry and Exit Revenue Recovery charges at IPs. The nature of applying any Transmission Entry and Exit Revenue Recovery charges will be discussed through NTSCMF.

The Transmission Services revenue recovery charges will be produced in p/kWh.

## Non-Transmission Services Charging

The revenue collected from the following will contribute towards Non-Transmission Services Revenue:

- DN Pensions Deficit Charge
- Meter Maintenance Charge
- St. Fergus Compression Charge

- Non Transmission Services Charge

Before the Non-Transmission Services charge is calculated the total Non-Transmission Services revenue excluding the DN Pensions, Meter Maintenance and the St. Fergus revenue will be calculated.

Target Non-Transmission Services Revenue is to be recovered through a flow based charge as a flat unit price for all relevant or qualifying Entry and Exit Points. We propose this to be all flows excluding Storage flows unless it is flowed as “own use” gas at the Storage point.

The Non-Transmission Services charge will be produced in p/kWh.

### **Treatment of under/over recovery (K) – after each formula year**

A separate under or over revenue recovery (otherwise known as the “K” value) will be calculated for Transmission Services and Non-Transmission Services for the formula year. This will be different to the TO and SO “K” values however the principle of reconciling Transmission Entry and Exit revenues separately will remain.

The approach and calculation will be outlined in the UNC, to be approved by the NRA. In addition to Transmission and Non Transmission being reconciled this modification also proposes to have reconciliation between Entry and Exit under Transmission Services.

#### **Transmission Services Revenue:**

It is proposed to maintain 50/50 split between Entry and Exit (for the purposes of allocating revenues to the charges to recover Transmission Services Entry and Exit Revenues). It is also proposed to maintain the reconciliation of Entry and Exit for Transmission Services, like the current approach for TO charges. This would continue to mean that Entry and Exit, under Transmission Services, when reconciled would not result in Entry impacting Exit or vice versa.

The applicable years Transmission Service Revenue will be split 50:50 between revenue to collect on Entry Capacity charges and revenue to collect on Exit Capacity charges. This value will then be added to any under/over recovery (Transmission Services K value) which was calculated in y-2 (two years ago) and split between Entry and Exit in the correct proportion, to make the applicable revenue which will be used in the CWD model to calculate the capacity charges.

#### **Non Transmission Services Revenue:**

All those charges under Non Transmission Services shall contribute towards Non Transmission Services revenue recovery. All charges are set on an ex-ante basis.

Any under or over recovery attributed to the charges other than the Non-Transmission Services Charge shall not be subject to reconciliation with any K value (Non Transmission Services K value) adjusting the Non Transmission Services Revenue recovery charge. Non Transmission Services revenue charge will be added to the Non Transmission Services K value which was calculated in y-2 (two years ago) which will be used to calculate the applicable years Non Transmission Services Revenue which will be used for calculation of the Non Transmission Services Charges.

## Aspects of the GB Charging Regime where there are no proposals for change (for information only):

The following is a list of items for which changes are not being proposed at this time. Some of these may be discussed as part of the longer term charging reviews:

- ~~Auction Structure — All timings for auctions will be as per now or as per CAM changes.~~
- ~~Entry/Exit Split — Keep as 50:50 split.~~
- ~~Gas Year/Formula Year — Formula Year is April to March and Gas Year is October to September, will keep these as currently are.~~
- ~~DN Pensions Deficit Charge — No change to the calculation or the application of the charge.~~
- ~~St.Fergus Compression Charge — No change to the calculation or the application of the charge.~~
- ~~Categorisation of Entry and Exit Points — Maintain the link to the Licence for categorisation.~~
- ~~Seasonal Factors — Not used in current methodology and propose not to introduce.~~
- ~~Fixed Pricing — As per MOD 611 Amendments to the firm capacity payable price at IPs.~~
- ~~Allowed Revenue — No change as per the Licence.~~
- ~~Principles and application of Interruptible — As per MOD 500 EU Capacity Regulations — Capacity Allocation Mechanisms with Congestion Management Procedures.~~

## 6 Impacts & Other Considerations

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

N/A

### Consumer Impacts

Depending on the final proposal of the charging methodologies there will be impact on different consumer groups but the allowed revenue collected by National Grid NTS will not change. This section will be developed as this modification proposal develops.

### Cross Code Impacts

None

### EU Code Impacts

EU Tariff Code compliance is considered as part of this modification proposal.

### Central Systems Impacts

~~There will be impacts on Gemini and UK Link invoicing systems. Discussions on these impacts are already underway. To be discussed during the development of this modification proposal. [There are likely to be impacts on Gemini and invoicing systems.~~

## 7 Relevant Objectives

Impact of the modification on the Relevant Charging Methodology Objectives:

Relevant Objective	Identified impact
a) Save in so far as paragraphs (aa) or (d) apply, that compliance with the charging methodology results in charges which reflect the costs incurred by the licensee in its transportation business;	<del>None</del> Positive
aa) That, in so far as prices in respect of transportation arrangements are established by auction, either: <ul style="list-style-type: none"> <li>(i) no reserve price is applied, or</li> <li>(ii) that reserve price is set at a level -               <ul style="list-style-type: none"> <li>(I) best calculated to promote efficiency and avoid undue preference in the supply of transportation services; and</li> <li>(II) best calculated to promote competition between gas suppliers and between gas shippers;</li> </ul> </li> </ul>	<del>None</del> Positive
b) That, so far as is consistent with sub-paragraph (a), the charging methodology properly takes account of developments in the transportation business;	Positive
c) That, so far as is consistent with sub-paragraphs (a) and (b), compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers; and	<del>None</del> Positive
d) That the charging methodology reflects any alternative arrangements put in place in accordance with a determination made by the Secretary of State under paragraph 2A(a) of Standard Special Condition A27 (Disposal of Assets).	None
e) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.	Positive

This modification proposal does not conflict with:

- (i) paragraphs 8, 9, 10 and 11 of Standard Condition 4B of the Transporter's Licence; or
  - (ii) paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Transporter's Licence;
- as the charges will be changed at the required times and to the required notice periods.

Demonstration of how the Relevant Objectives are furthered:

- b) That, so far as is consistent with sub-paragraph (a), the charging methodology properly takes account of developments in the transportation business;

The update to the Transmission Services methodology proposal takes into account developments which have taken place in the transportation business, in particular that the network is no longer expanding.

- e) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.

The EU Tariff Code compliance is taken into account in this modification proposal- which came into force on 6 April 2017 and has an implementation date of May 2019, with the resulting methodology effecting prices from October 2019.

To the extent that TPD Section B [and EID Section B](#) is impacted, this will require a review of the standard Relevant Objectives in addition to the above.

## 8 Implementation

No implementation timescales proposed, these will be discussed within the workgroups.

This modification and the resulting methodology change will take effect for prices from October 2019, in order to achieve compliance with the EU Tariff Code.

## 9 Legal Text

### Text Commentary

To be provided later

### Text

To be provided later

## 10 Recommendations

### Proposer's Recommendation to Panel

Panel is asked to:

- Agree that Authority Direction should apply
- Refer this proposal to a Workgroup for assessment.