UNC Modification	At what stage is this document in the process?
# UNC 0621B: ## Amendments to Gas Transmission Charging Regime	01 Modification 02 Workgroup Report 03 Draft Modification Report 04 Final Modification Report

Purpose of Modification:

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).

✓	The Proposer recommends that this modification should be assessed by a Workgroup. This modification will be presented by the Proposer's agent to the Panel on 21 December 2018. The Panel will consider the Proposer's recommendation and determine the appropriate route.
!	High Impact: All parties that pay NTS Transportation Charges and/or have a connection to the NTS, and National Grid NTS
!	Medium Impact: N/A
!	Low Impact: N/A

Contents

Timetable

The Proposer recommends the following timetable:	
Initial consideration by Workgroup	06 December 2017
Workgroup Report presented to Panel	17 May 2018
Draft Modification Report issued for consultation	21 May 2018
Consultation Close-out for representations	25 June 2018
Final Modification Report available for Panel	9 July 2018
Modification Panel decision	19 July 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 which is compliant with the 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 relative 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 will also be necessary to make changes to the Transition Document and update other sections of the UNC TPD (Sections B, E and G) and EID Section B).

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 will map across to TO and SO revenues, thereby not changing the total revenue to be collected through Transportation charges. The more material change will be the amendments to the charging methodologies in calculating the charges that will be applied to recover the allowed revenues from NTS network Users through the Transportation 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 facilitate the relevant methodology objectives[1] and support the evolution of the GB charging regime.

[1] As described in Standard Special Condition A5: 'Obligations as Regard Charging Methodology' of the NTS Licence, paragraph 5.

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?

Drivers

3.1. The methodology which is currently in place for the calculation of Gas Transmission Transportation 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.

Mapping Revenues

3.3. 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.

3.4. There are a number of targeted charges in the current methodology and it is necessary to consider which revenue they will contribute towards:

3.4.1. The Distribution Network (DN) Pensions Deficit Charge and NTS 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.

3.4.2. 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.

3.4.3. The methodologies to calculate these charges (DN Pensions Deficit, NTS 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.

Pricing Methodology

3.5. 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.

3.6. Through an assessment of RPM's[2], 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 provided that the FCC is stable. and is more suited to a system that is about use and revenue recovery associated to use rather than linked to investment (marginal pricing). However, the CWD methodology will only produce stable charges if the inputs are stable. If the Forecasted Contracted Capacity (FCC) values vary year to year then charges will be volatile. Therefore, a stable input based on Obligated baseline values in the licence is proposed.

3.7. If the above is achieved this makes the RPM more relevant to how the NTS is used and expected to be used. It 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 whilst continuing to provide some locational diversity in charges through the use of locational capacity and the average distances applied under the CWD approach.

3.8. 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. For example, regardless of which FCC is chosen, the RPM does not demonstrate Cost Reflectivity for Exit points that are physically close to Entry points. This lack of cost reflectivity is a concern given the material impact on certain customers. However, this concern can be partly mitigated by continued use of the NTS Optional Charge.

3.9. This 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.

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[2] See https://www.gasgovernance.co.uk/ntscmf/subg1model

3.10. This Proposal also seeks to establish 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.

3.11. This Proposal 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.

Forecasted Contractual Capacity (FCC)

3.12. If implemented, the proposed changes to the charging regime may result in changes to commercial behaviours in the procurement of capacity rights. Given this uncertainty, it is proposed that the forecasted contracted capacity will be based on capacity values documented in the National Grid Licence.

Multipliers

3.13. 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 any potential risk associated with the type of Entry or Exit Capacity, to facilitate the recovery of revenues where relevant or beneficial to do so, and to encourage behaviours along with ensuring National Grid fulfils any relevant obligations.

3.14. Multipliers are applied to the Reference Price to produce the reserve Price. 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.

3.15. Beyond 30 September 2020, Multipliers for IPs need to be consulted on (Article 28 of the EU Tariff code). Following consultation, a modification proposal will need to be raised to change the value of multipliers specified in section Y of the UNC. This will ensure certainty for business planning and that due Governance processes are followed.

Discounts

3.16. The pricing of Interruptible /off-peak capacity will change from the current pricing approach. It will be consistent with the EU Tariff Code Article 16 and applied to all points. 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.

3.17. 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 factored into the assessment. 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.

3.18. Within the EU Tariff Code there are requirements to apply further 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. SSE proposes an enduring storage discount value of 86 % but recognises that EU Tariff Code requirements for the charging regime to be reviewed, as a whole, at least every 5 years.

3.19. Any specific 'site type' discounts contemplated by the EU Tariff Code (Article 9) are applied to the Reserve Price to produce a final Reserve Price for the particular Firm Entry or Exit Capacity product at that particular point. The adjustment for Entry Points and Exit Points will be based on the 86 % value specified in the UNC.

Revenue Recovery

3.20. SSE's proposal incorporates a mechanism to manage the consequence of under or over recovery of revenues from Transmission Services Capacity Charges. The approach advocated is where these Revenue Recovery charges are applied at most points as a flow based (commodity) charge as allowed for in Article 4 of the EU TAR code.

3.21. SSE believes that revenue recovery charges based as flow based (commodity) charges will be less distortive to competition than capacity based charges. This is because they can be passed through uniformly to wholesale price and minimise the impact of inefficient behaviour that can arise from capacity charges. The unintended consequences of which are 1. higher NBP price volatility 2. reduced security of supply arising from storage curtailment and greater import reliance 3. higher costs to customers arising from increased power prices due to higher gas exit capacity charges.

NTS Optional Charge

3.22. SSE proposes to retain a charge that discourages inefficient bypass of the NTS. The general principle is to retain an incentive to utilise the NTS rather than construct a dedicated pipeline to exit points that are sufficiently close to an entry point. Such a product should consider the most appropriate method of applying such a charge and in its derivation should consider such elements as the costs of building an alternative pipeline and a reasonable limit over which this may be considered economic to construct and how the charge functions with the rest of the charging framework to be in keeping with the general principle of the NTS Optional Charge.

3.22.1. SSE proposes to effectively retain this through the use of, in principle, the existing NTS Optional Commodity ('NTS shorthaul') charge as an alternative charge to the transitional Transmission Services entry and exit Revenue Recovery charges and Non Transmission Services Entry and Exit Charges.

3.22.2. We continue to believe it is appropriate to dis-incentivise the construction of dedicated pipelines to exit points which are sufficiently close to an entry point.

3.23. As a means of applying the NTS Optional charge, there are two key differences that will apply:

3.23.1. *Inclusion of a 60km distance cap*.

As the existing charge is based on a fixed formula (as opposed to a percentage discount for example), the number of Entry/Exit Points Combinations for which the optional charge is less than the standard change is in excess of the numbers initially intended. Consequently, the entry to exit point distances within scope are also in excess of the distances initially envisaged.

SSE believes that the distance cap proposed constrains the availability of the incentive to those exit points sufficiently close to entry points (to genuinely consider construction of a dedicated pipeline) in line with the original aims of the optional charge.

3.23.2. *Indexation of the costs incorporated into the charge formula.*

The existing formula incorporates four numeric values which are driven by the estimated cost of laying and operating a dedicated pipeline of NTS specification in 1997. SSE proposes that these cost inputs are updated to October 2017 values via indexation using the Retail Prices Index. Prospectively, SSE believes it is appropriate to update these costs (via indexation) for the relevant charging period and proposes to use the Retail Prices Index for this purpose (i.e. for October 2019 the cost inputs will be updated using RPI from the 12 month period ending 31 March 2019 and for October 2020 updated using RPI from the 12 month period ending 31 March 2020).

3.24. Other aspects of the existing NTS Optional Commodity charge derivation are proposed to be retained within the new NTS Optional Charge:

3.24.1. The existing range of pipe sizes taken into account;

3.24.2. The maximum daily capacity, as derived from the maximum hourly volume as specified in the Network Exit Agreement, as an input to the formula; and

3.24.3. The maximum daily capacity load being subject to a 75% load factor adjustment; and

3.24.4. The existing determination of 'eligible quantities' (including the current bespoke arrangement at the Bacton ASEP (introduced by UNC Modification 0534) is principally retained

3.25. **Existing Contracts and Interim Contracts (Collectively referred to as Historical Contracts)**SSE proposes provisions to apply for Entry Capacity (for 01 October 2019 or beyond) allocated up to and including the last day of the month in which Ofgem issues its letter directing implementation of this Proposal

3.25.1. This will include Existing Contracts, as outlined in Article 35 in EU Tariff Code where 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".

3.25.2. This will also include Interim Contracts, as defined in this Proposal whereby the contract or capacity booking concluded between to entry into force of the EU Tariff Code (06 April 2017) and up to and including the last day of the month in which Ofgem issues its letter directing implementation of this Proposal. Beyond this date, sufficient clarity of the charging regime to apply from 01 October 2019 is apparent and therefore no specific treatment (for capacity subsequently booked) is proposed.

3.25.3. The capacity procured under these contracts impact the application of the CWD charging model (specifically when determining Reference Prices at Entry Points) and calculation of Transmission Services Revenue Recovery Charges.

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 prevailing terms (including any changes implemented to comply with CAM).
- Entry/Exit Split – No change is proposed to the current 50:50 split.
- Gas Year/Formula Year – the Formula Year (April to March) and Gas Year (October to September) will be retained.
- DN Pensions Deficit Charge – No change to the calculation or the application of the charge.
- St. Fergus Compression Charge – No change is proposed to the calculation or the application of the charge.
- NTS Metering Charge - No change is proposed to the calculation or the application of the charge
- Shared Supply Meter Point Administration Charges - No change is proposed to the calculation or the application of the charge
- Allocation Charges at Interconnectors - No change is proposed 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 Modification 0611, Amendments to the firm capacity payable price at IPs.
- Allowed Revenue – No change as per the Licence.
- Principles and application of Interruptible – As per prevailing terms. In respect of IPs, the terms implemented pursuant to Modification 0500, EU Capacity Regulations - Capacity Allocation Mechanisms with Congestion Management Procedures.

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

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

Uniform Network Code (UNC) Section B:

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

Term (Abbreviation)	Description
Capacity Weighted Distance (CWD) Model	The CWD approach fundamentally requires three main inputs: • A revenue value is required, which will be the target revenue required to be recovered from 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). The CWD model produces the Transmission Services reference prices and with additional adjustments produces the Transmission Services reserve prices.
Existing Contracts (ECs) (for the purposes of this modification)	Arrangements relating to Long Term Entry capacity allocated before 6 April 2017 (Entry into Force of EU Tariff Code)
Forecasted Contracted Capacity (FCC)	FCC is the capacity input to the RPM that will be used for the Transmission Services capacity charges calculation that for this proposal will be through a CWD methodology. There should be an FCC value for every Entry and Exit point.
Interim Contracts (ICs)	Arrangements relating to Long Term Entry capacity between 6 April 2017 and up to and including the last day of the month in which Ofgem issues its letter directing implementation of this Proposal.
Long Run Marginal Costs (LRMC) Model	The current underlying RPM used in the calculation of the Entry and Exit Capacity Prices. 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 TPD Section Y of the UNC.
Multipliers	The factor applied to the respective proportion (runtime) of the reference price in order to calculate the reserve price for non-yearly standard capacity product

Network Distances (for the purposes of modelling in the RPM)	A matrix of distances used in the RPM that are the pipeline distances on the NTS.
Non-Transmission Services	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;
Non-Transmission Services Revenue	The part of the allowed or target revenue which is recovered by non-transmission tariffs
Reference Price	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 produced in p/kWh/a (pence per kWh per annum)
Reference Price Methodology (RPM)	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. 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.
Reserve Price	**Reserve Price for Yearly standard capacity** = the Reference Price **Reserve Price for Non- yearly standard capacity** is calculated by applying any multipliers, discounts and seasonal factors (if applicable). This will be produced in p/kWh/d (pence per kWh per day).
Target Revenue	This is the revenue required to be recovered from a particular set of charges.
Transmission Services	The regulated services that are provided by the transmission system operator within the entry-exit system for the purpose of transmission.
Transmission Services Revenue	The part of the allowed or target revenue which is recovered by transmission tariffs.

5 Solution

This modification proposal seeks to amend TPD Section Y, Part A (The Gas Transmission Transportation Charging Methodology) of the UNC, by changing the methodology for the calculation of gas transmission transportation charges. Changes to the Transition Document, TPD Sections B (System Use and Capacity), E (Daily Quantities, Imbalances and Reconciliation), G (Supply Points) and European Interconnection Document (EID) Section B (Capacity) are also required..

Mapping of the revenue to Transmission Services revenue and Non-Transmission Services revenue (see paras 3.3 and 3.4 in section 3)

Transmission Services Charges

It is proposed that Transmission Services charges will be collected via:

- Transmission Services Capacity charges made up of;
    - Transmission Entry Capacity charge s (including NTS Transmission Services Entry Capacity Retention Charge);
    - Transmission Exit Capacity charges;
- Transmission Services Entry Revenue Recovery charges;
- Transmission Services Exit Revenue Recovery charges;
- NTS Optional charges and
- NTS Transmission Services Entry Charge Rebate

Non-Transmission Services Charges

It is proposed that Non-Transmission Services charges will be collected via:

- General non-Transmission Services Entry and Exit Charges;
- St Fergus Compression Charges;
- NTS Metering Charges;
- DN Pensions Deficit charges.
- Shared Supply Meter Point Administration charges and
- Allocation Charges at Interconnectors

Transmission Services Charges

Reference Price Methodology (see paras 3.5 to 3.11 in section 3)

It is proposed that a CWD approach is used in the RPM.

One RPM will be used for the calculation of capacity prices for all Entry Points and Exit Points on the system. 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

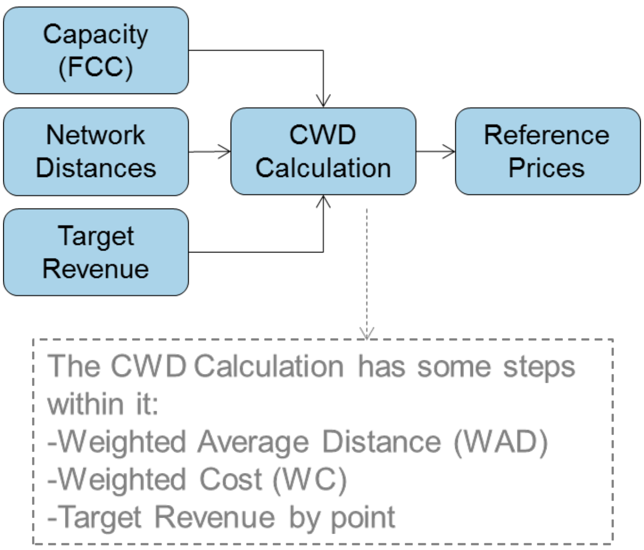
It is proposed that the calculation of the final reference price for a given Entry Point or Exit point cannot be zero. If application of the CWD methodology derives a zero price as a result of the FCC value or the Existing Contracts (EC) influencing the CWD calculation (see below), then the Reference Price to be used for such points will be based upon the price for the closest (in terms of Weighted Average Distance as opposed to geographically) non-zero priced Entry Point (for an Entry Point) or the closest non-zero priced Exit Point (for an Exit Point).

The price for the relevant Entry Point or Exit Point will equal to the Reference Price for the closest relevant Entry Point or (respectively) Exit Point adjusted in line with pro-rata relationship between the two Weighted Average Distances. *Calculations within the CWD Model*

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

The proposed CWD approach fundamentally requires three main inputs:

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



Key steps in the CWD calculations:

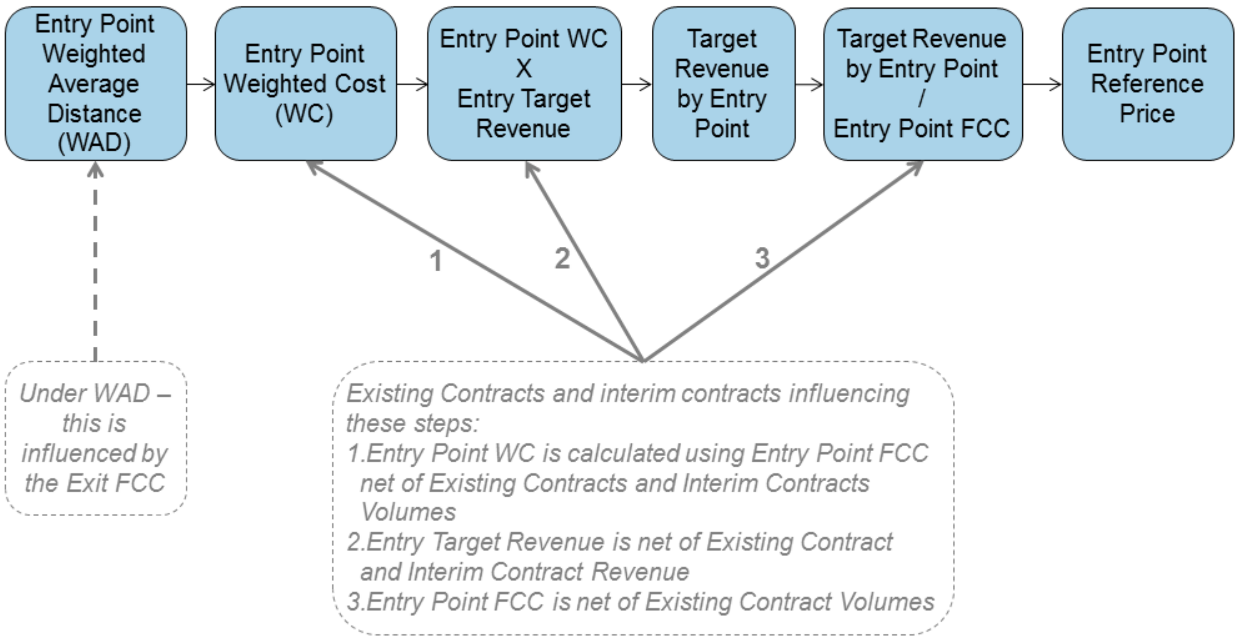
	Entry Capacity Calculation	Exit Capacity Calculation
Weighted Average Distance (WAD)	(Sumproduct Exit Point FCC x Distance to Entry Point) / Sum Exit Point FCC	(Sumproduct Entry Point FCC$^{\#}$ x Distance to Exit Point) / Sum Entry Point FCC$^{\#}$
Weighted Cost (WC)	Entry Point FCC* x WAD /	Exit Point FCC x WAD /

	(Sumproduct Entry Point FCC* x WAD)	(Sumproduct Exit Point FCC x WAD)
Target Revenue by point (TRP)	Entry Target Revenue x WC	Exit Target Revenue x WC
Reference Price (RefP)	Entry TRP / Entry Point FCC*	Exit TRP / Exit Point FCC

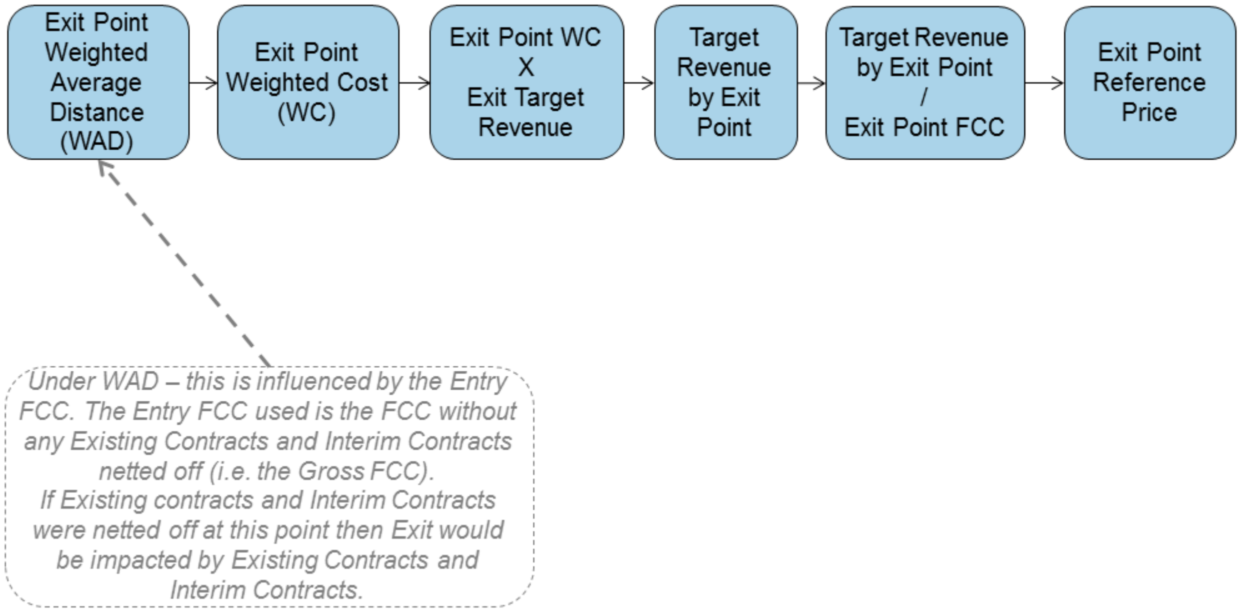
#Entry Point FCC – this is Gross Entry Point FCC (not reduced by capacity associated with Existing Contracts and Interim Contracts)

*Entry Point FCC – this is the Entry Point FCC net of capacity associated with Existing Contracts and Interim Contracts.

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) (see paras 3.12 in section 3)

It is proposed that for the period commencing 1st October 2019 the FCC for an Entry Point or an Exit Point will be equal to the 'Baseline capacity' specified within National Grid's Licence (Special Condition 5F Table 4B for Entry Points, and Special Condition 5G Table 8 for Exit Points) for the relevant Entry Point or Exit Point.

Reserve Prices produced from Reference Prices (see paras 3.13 to 3.15 in section 3)- includes multipliers

It is proposed that Reserve Prices for capacity will be produced in p/kWh/d. The Reserve Prices will be calculated each year based on the latest available set of inputs and once published, these will be the Reserve Prices applicable for the relevant gas year regardless of when the capacity product is procured. For example, capacity procured in 2019 for a period in October 2025 will be subject to the Reserve Prices determined for gas year 2025/26 plus, where applicable, any auction premium initially contracted for.

It is proposed that the Reserve Price for Firm capacity at an Entry Point or an Exit Point is determined by application of any applicable Multipliers to the relevant Reference Price.

It is proposed that Multipliers

- shall not be zero for any capacity type or product;
- are not to be used for the purposes of managing revenue recovery;
- shall be calculated on an ex-ante basis ahead of the applicable year.

It is proposed that:

- for the period commencing 01 October 2019 the Multiplier applied to the Reference Prices for all Entry Point and Exit Points in order to determine the Reserve Price will be 1 and this value will be inserted into Section Y of the UNC.

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Specific Capacity Discounts (see para 3.16 to 3.19 in section 3)

It is proposed that Specific Capacity Discounts will be applied to the [Reserve] Prices in respect of Firm and Interruptible or Off Peak Capacity at the Points detailed below.

It is proposed that in respect of **storage sites**, (locations where the type of Entry point/Offtake is designated as a 'Storage Site' in National Grid's Licence (Special Condition 5F Table 4B for Entry Points, and Special Condition 5G Table 8 for Exit Points) the applicable Specific Capacity Discount for a given gas year will be equal to 86% and this value will be inserted into Section Y of the UNC.It is proposed that in respect of **Liquefied Natural Gas (LNG) sites**, (locations where the type of Entry point is designated as a 'LNG Importation Terminal' in National Grid's Licence (Special Condition 5F Table 4B)):

- for the period commencing 01 October 2019 the applicable Specific Capacity Discount for a given gas year will be equal to 0% and this value will be entered into Section Y of the UNC.

It is proposed that no other specific capacity discounts are applied.

Interruptible Capacity (see paras 3.16 to 3.17 in Section 3)

It is proposed that the reserve price for Interruptible Capacity at an Entry Point or an Exit Point is derived by application of an ex-ante discount to the reserve prices for the corresponding firm capacity products (the day ahead firm price at the relevant Entry Point and the daily firm price at the relevant Exit Point).

It is proposed that when determining the level of discount applied in respect of Interruptible/Off peak Capacity from 01 October 2019, the likelihood of interruption and the estimated economic value of the interruptible/Off-peak capacity product are used to determine a discount value (as per Article 16 of EU Regulation 2017/460). It is further proposed to adopt a 'banding approach' for the period commencing 01 October 2019 and for subsequent years, such that the proposed discount value will be rounded up to the nearest 10%:

It is proposed that:

- for the period commencing 01 October 2019 the discount applied in respect of Interruptible/Off-peak Capacity:
  - at Entry Points is 10%; and
  - at Exit Points is 10% these values will be entered into Section Y of the UNC.

NTS Optional Charge (see paras 3.22 to 3.24 in Section 3)

It is proposed that from 30 September 2019, the NTS Optional Charge is available for eligible flows or eligible capacity at Specified Entry Point and Specified Exit Points. This is available to Users (by election) as an alternative to the Transmission Services Revenue Recovery charges (entry and exit) and general Non-Transmission Services Entry and Exit Charge where the straight line distance from the Specified Entry Point to the Specified Exit Point is 60km or less

A Specified Entry Point can be any System Entry Point except those located at Storage Connection Points. Whereas one Specified Entry Point can be associated with more than one NTS Supply Point /

Interconnection Point, it is not permitted to associate more than one Specified Entry Point to an individual NTS Supply Point / Interconnection Point.

The method of determining the NTS Optional Charge for the relevant years will be to follow the following formula structure and indexation approach to provide an updated formula to be applicable in the relevant year. The formula is designed to take into account the estimated costs of laying and operating a dedicated pipeline of an appropriate specification and also takes into account a range of flow rates and pipeline distances.

> ***w****(M^**x**)*D + **y***(M^**z**)*
>
> where:
>
> ***w*** means a value derived from the estimated costs (of laying and operating a dedicated pipeline of NTS specification) between the relevant points and the latest indicative value[3] for the 12 month period commencing 01 October 2018 is equal to 2082;
>
> M means the Maximum NTS Exit Point Offtake Rate (MNEPOR) converted into kWh/day at the site as specified in the relevant Network Exit Agreement;
>
> ***x*** means a value derived from the estimated costs (of laying and operating a dedicated pipeline of NTS specification) between the relevant points and the latest indicative value[3] for the 12 month period commencing 01 October 2018 is equal to -0.835;
>
> D means the straight line ('as the crow flies') distance from the site or non-National Grid NTS pipeline to the Specified Entry Point in km (up to a maximum distance of 60km);
>
> ***y*** means a value derived from the estimated costs (of laying and operating a dedicated pipeline of NTS specification) between the relevant points and the latest indicative value[3] for the 12 month period commencing 01 October 2018 is equal to 609;
>
> ***z*** means a value derived from the estimated costs (of laying and operating a dedicated pipeline of NTS specification) between the relevant points for the 12 month period commencing 01 October 2018 is equal to -0.654; and
>
> ^ means to the power of

It is proposed that the methodology that supports the derivation of the above formula and its parameters will be included in a separate Methodology Statement

Indexation approach

It is proposed that the estimated costs (of laying and operating a dedicated pipeline of NTS specification) which underpin the calculation that derives the values ***w***, ***x***, ***y*** and ***z*** above are subject to indexation to the Retail Prices Index (RPI) for the relevant charge period consistent with RIIO-T1 Licence RPI calculations. The cost base will be updated using publicly published RPI figures from the previous completed formula year (i.e. October 2019 will be updated using April 2018 to March 2019 data) and the formula for determine the RPI will be as follows:

---

[3]For each year of application, the arithmetic average monthly RPI value for the previous formula year will be used to index the cost base used to derive these values. The values specified are based on RPI data available to date in the current formula year (April 2017 to January 2018).

$$RPI_t = \frac{RPI_{t-1}}{RPI_{1998/99}}$$

RPI_t means the arithmetic average of the monthly Retail Price Index published or determined with respect to each of the twelve months from 1 April to 31 March in formula Year t

It is proposed that the updated formula for the relevant year (within the period for which the NTS Optional charge is applicable as an alternative to the flow based Transmission Services Revenue Recovery charges) are specified in the **Transportation Statement.**

It is proposed that the NTS Optional Charge rate (in place for an individual Supply Point Registration) will be subject to change annually (as a consequence of the indexation described above). For the avoidance of doubt this charge rate change will take effect in absence of any subsequent Supply Point Administration activity.

It is proposed that by 01 August 2020 National Grid notify each User at a Point with an existing NTS Optional Charge rate (as at 01 July 2020) of the prevailing tariff/rate and the NTS Optional Charge rate (which will apply from 01 October 2020)*.*

Transition

The existing NTS Optional Commodity Rate (OCR) will no longer be available from 01 October 2019. It is proposed that existing Users subject to the OCR will not be automatically transferred to the proposed NTS Optional Charge.

It is proposed that by 01 August 2019 National Grid notify each User at a Point with an existing OCR (as at 01 July 2019) of the removal of the OCR and the availability of the NTS Optional Charge for points that meet the criteria (i.e. where the straight line distance from the site or non-National Grid NTS pipeline to the Specified Entry Point is up to 60km). For the avoidance of doubt, in absence of an accepted application for the NTS Optional Charge in respect of a Point, the standard Revenue Recovery Charges will be payable from 01 October 2019 as described above.

Application (all Points)

It is proposed that the flow utilised for the basis of the NTS Optional charge ('NTS Optional Flow') is the lower of the input flow (at the specified Entry Point) or the output flow (at the specified Exit Point). Where a single Entry Point is the specified Entry Point for multiple identified Exit Points and the aggregate volume flowed at the identified Entry Point is less than the aggregate volume flowed at the identified Exit Points, the NTS Optional Flow for each will be the pro rata proportion of the aggregate volume flowed at the identified Entry Point (i.e. in proportions equivalent to the Exit Volumes).

Application: Non-Interconnection Points

It is proposed that NTS Optional Flow will be subject to the NTS Optional Charge as an alternate to both the flow-based Entry Revenue Recovery Charge (at the identified Entry Point) and the flow-based Exit Revenue Recovery Charge (at the identified Exit Point) **and the non-transmission entry and exit charges**. Any flow at the identified Entry point or the identified Exit point that is not classified as NTS

Optional Flow is subject to (respectively) the flow-based Transmission Services Exit Revenue Recovery Charge or flow-based Transmission Services Entry Recovery Charge.

Application: Interconnection Points

It is proposed that the quantity of capacity deemed to have been used ('NTS Optional Capacity') for this NTS Optional Flow will be equal to the NTS Optional Flow volume.

It is proposed that NTS Optional Capacity will be subject to the NTS Optional Charge as an alternate to (where applicable) the capacity based Entry Revenue Recovery Charge (at the identified Entry Point) and the capacity based Exit Revenue Recovery Charge (at the identified Exit Point) **and the non-transmission entry and exit charges**. Any capacity at the identified Entry point or the identified Exit point that is not classified as NTS Optional Capacity is subject to (respectively) the capacity-based Transmission Services Exit Revenue Recovery Charge or capacity-based Transmission Services Entry Recovery Charge.

Application: Bacton ASEPs[4]

It is proposed that at the Bacton ASEPs only, the input flow at the ASEP will be equal to the sum of the UKCS ASEP and the IP ASEP. In order to determine the proportion of NTS Optional Flow which is subject to application in respect of non-Interconnection Points and which is subject to application in respect of Interconnection Points, the NTS Optional Flow shall be apportioned between the UKCS ASEP and the IP ASEP in pro rata proportion to the input flow (i.e. in proportions equivalent to the input flow at the UKCS ASEP and the IP ASEP).

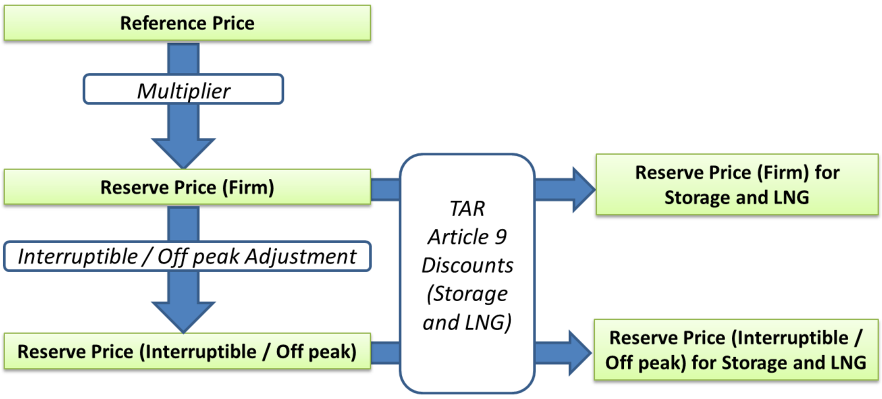
Minimum Reserve Price

It is proposed that Reserve Prices for Firm and Interruptible / Offpeak capacity (determined following the application of any relevant Multipliers, Specific Capacity Discounts, or Interruptible / Offpeak adjustments) will be subject to a minimum value (collar) of 0.0001p/kWh/d.

Summary of Reserve Price Derivation

The following diagram summarises the proposed approach to the derivation of Reserve Prices (from the applicable Reference Price) for both Firm and Interruptible/offpeak Capacity products (including Capacity at Storage and LNG sites).

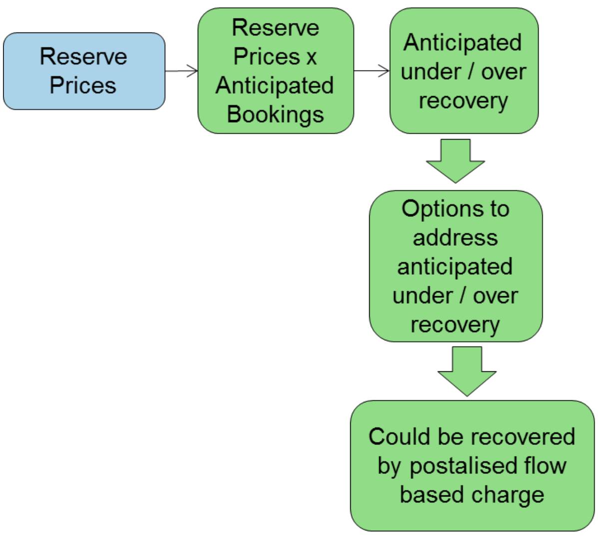
[4] The approach advocated is consistent with the principles introduced by UNC Modification 0534 '*Maintaining the efficacy of the NTS Optional Commodity ('shorthaul') tariff at Bacton entry points*' which was implemented with effect from 01 August 2016.



Transmission Services Revenue Recovery Charges (see paras 3.20 to 3.21 in Section 3)

It is proposed that where a proportion of revenue could be under/over recovered (i.e. compared to the target Transmission Services revenues) as a consequence of application of reserve prices applicable for the following gas year, a revenue recovery mechanism is applied.

The Transmission Services Revenue Recovery charges (Transmission Services Entry Revenue Recovery charge and Transmission Services Exit Revenue Recovery charge) will be calculated after the Reserve Prices have been determined and will be calculated as follows for Entry and Exit in the same way:



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

It is proposed that for the period commencing 01 October 2019 the transmission services revenue recovery mechanism is calculated in a number of steps and applied differently to Interconnection Points and Non Interconnection Points:

- The required revenue to be applied to the Transmission Services revenue recovery mechanism will be determined in the same manner for Entry and for Exit in the steps highlighted above. The steps below apply independently to both Entry and to Exit to produce Transmission Services Entry Revenue Recovery charges and Transmission Services Exit Revenue Recovery charges.

- The total anticipated flows on the NTS excluding Storage flows unless it is flowed as "own use" gas at the Storage point will be used as the main denominator.

For Non interconnection points, the anticipated Non Interconnection Point flows as a proportion of the total anticipated flows on the NTS will be applied to the required revenue from the Transmission Services revenue recovery mechanism to determine the revenue to be collected from Non Interconnection points. This amount divided by the applicable Non Interconnection Point flows shall determine the Transmission Services Entry and Exit revenue recovery charges for Non Interconnection Points for the relevant period. This charge shall be applied to all Non Interconnection Point flows except Storage flows not considered "own use" gas at the storage point. The Transmission Services Entry and Exit revenue recovery charges for Non Interconnection Points will be produced in p/kWh.

For interconnection points, the anticipated Interconnection Point flows as a proportion of the total anticipated flows on the NTS will be applied to the required revenue from the Transmission Services revenue recovery mechanism to determine the revenue to be collected from Interconnection Points. This amount divided by an aggregate forecast of fully adjusted capacity at Interconnection points shall determine the Transmission Services Entry and Exit revenue recovery charges for Interconnection Points for the relevant period. This charge shall be applied to all Interconnection Point fully adjusted capacity. The Transmission Services Entry and Exit revenue recovery charges at Interconnection Points for this period will be produced in p/kWh/d.

NTS Transmission Services Entry Charge Rebate

The charge mechanism reduces any Transmission Services entry over recovery resulting from NTS Entry capacity auctions. The process may be triggered at the end of the formula year based on the outcome of all NTS entry capacity auctions that represent a Transmission services entry capacity revenue stream. It is proposed that this will be applied as a Transmission Services entry commodity credit.

NTS Transmission Services Entry Capacity Retention Charge

NTS Entry Capacity Substitution is where National Grid moves unsold non-incremental Obligated Entry Capacity from one (donor) ASEP to meet the demand for incremental Obligated Entry Capacity at a different (recipient) ASEP. It is proposed that where a User elects to exclude capacity at potential donor ASEPs from being treated as substitutable capacity without having to buy and be allocated the capacity it is required to take out a "retainer". The retainer is valid for one year, covering all QSEC auctions (including ad-hoc auctions) held in this period. National Grid will exclude the relevant quantity from the substitution process, but the retainer will not create any rights to the User to be allocated or to use the capacity. The retainer will not prevent Users (including the User taking out the retainer) from buying that capacity at the ASEP in question in the period covered by the retainer. The retainer is subject to a one-off charge which is payable via an ad hoc invoice raised within 2 months of the QSEC auction allocations being confirmed. If a User wishes to protect capacity for more than one year then a further retainer must be obtained each year and a charge will be payable each year for which a retainer is taken out.

Where any capacity covered by a retainer is allocated, a refund of the retention fee may be made; for example, for a retainer taken out for Gas Year 2013/14 in January 2010, a refund can be triggered by an allocation at the relevant ASEP made during a QSEC auction in 2010, 2011 and 2012, and an AMSEC auction in 2013 and 2014. NTS Entry Capacity Retention Charges, in regard to non-incremental Obligated Entry Capacity, are calculated based on the minimal capacity charge rate of 0.0001 pence per kWh per day applying over a time period of 32 quarters; this equates to 0.2922 p/kWh of Entry Capacity retained. NTS Entry Capacity Retention Charges and refunds in regard to non-incremental Obligated Entry Capacity are treated as Transmission Services.

Non-Transmission Services Charging

It is proposed that revenue due for collection via General Non-Transmission Services Entry and Exit Charges will be equal to[the Non-Transmission Services revenue minus the DN Pensions Charges, NTS Meter Maintenance Charges , St. Fergus Compressor Charges Shared Supply Meter Point Administration Charges and Allocation Charges at Interconnectors.

The revenue due for collection via General Non-Transmission Services Entry and Exit Charges will be recovered through a flow based charge as a flat unit price for all Entry Points and Exit Points.

It is proposed that this is applied to all flows excluding eligible flows (in respect of the NTS Optional Charge) and Storage flows unless it is flowed as “own use” gas at the Storage point.

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

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

It is proposed that 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.

It is proposed that the approach and calculation will be specified in the UNC, to be approved by Ofgem. 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, as per 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:

It is proposed that all those charges in respect of Non-Transmission Services shall contribute towards Non Transmission Services revenue recovery. All charges are set on an ex-ante basis.

It is proposed that any under or over recovery attributed to the charges other than the Non-Transmission Services Entry and Exit 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.

Transportation Charges:Information Publication

It is proposed that information in respect of Transportation Charges will be published in accordance with the following table:

	Data Item	Publication	Issued by*:
Transmission Services	Forecasted Contracted Capacity	Charging Model	01 August
	CWD Distances	Charging Model	01 August
	Capacity Reference Prices	Transportation Statement	01 August
	Multipliers	Transportation Statement	01 August
	Capacity Reserve Prices	Transportation Statement	01 August
	Interruptible Adjustment (Entry)	Transportation Statement	01 August
	Interruptible Adjustment (Exit)	Transportation Statement	01 August
	Specific Capacity Discounts (Storage)	Transportation Statement	01 August
	Specific Capacity Discounts (LNG)	Transportation Statement	01 August
	Revenue Recovery Charge (Entry)	Transportation Statement	01 August
	Revenue Recovery Charge (Exit)	Transportation Statement	01 August
	NTS Optional Charge Formula	Transportation Statement	01 August
Non Transmission Services	Non-Transmission Services Charges	Transportation Statement	01 August
	DN Pension Deficit Charges	Transportation Statement	01 August
	NTS Metering Charges	Transportation Statement	01 August
	St Fergus Compression Charges	Transportation Statement	01 August
	SSMP Administration Charges	Transportation Statement	01 August
	Allocation Charges at Interconnectors	Transportation Statement	01 August

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

There will be impact on different consumer groups but the allowed revenue collected by National Grid NTS will not change.

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.

7 Relevant Objectives

Impact of the modification on the Relevant Objectives:	
Relevant Objective	Identified impact
a) Efficient and economic operation of the pipe-line system.	Positive
b) Coordinated, efficient and economic operation of (i) the combined pipe-line system, and/ or (ii) the pipe-line system of one or more other relevant gas transporters.	None
c) Efficient discharge of the licensee's obligations.	Positive
d) Securing of effective competition: (i) between relevant shippers; (ii) between relevant suppliers; and/or (iii) between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers.	Positive
e) Provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards… are satisfied as respects the availability of gas to their domestic customers.	None
f) Promotion of efficiency in the implementation and administration of the Code.	None
g) 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

Demonstration of how the Relevant Objectives are furthered:

a) Efficient and economic operation of the pipe-line system

The NTS Optional Charge is an important aspect to maintain efficient and economic operation of the pipeline system. Without a suitable NTS Optional Charge product allowing a reduction to Transmission and Non-Transmission charges one can expect the increased use of private bypass pipelines. For example, a private pipeline of 400m could connect St Fergus to Peterhead. Once built, a private bypass pipeline would allow a shipper to avoid all future Transmission and Non-Transmission charges. The revenue then forgone by National Grid would have to be recovered across a smaller remaining customer base. This would increase costs to all remaining NTS customers and result in a duplicate of pipeline infrastructure - hardly an efficient outcome.

Based on analysis carried out by Storengy and WWA there is a clear relationship between the physical operation of storage facilities and the pipe-line system. The strong, positive correlation between aggregate gas demand and storage withdrawals/injections means that National Grid, in its role as SO, benefits from gas storage, at no cost. The flexibility provided by gas storage provides direct support to National Grid in its role as system balancer through; contributing to linepack management ;and reduced activity and costs associated with National Grid's participation in the balancing market (OCM) or any other contractual arrangements it may choose to enter into as part of its network balancing toolbox.
The level of discount should be consistent with the contribution to system flexibility (EU Tariff Code) and the proposer believes that the application of the minimum 50% discount does not fulfil this requirement. A discount of 50%, according to the EU Tariff Code simply avoids storage users being "double charged" for the use of the system. On this basis, the proposer contends that a discount of 86% not only better reflects the contribution made by storage facilities in relation to the efficient and economic operation of the pipe-line system, but also preserves the ability for gas storage to provide an economic means for balancing the pipeline system. The additional costs imposed on storage users through the application of the minimum 50% discount, and in particular the related significant escalation in the cost of off peak capacity, would result in undesirable market impacts, such as increased between day and within day price volatility. These market impacts conflict with this

objective by inflating the costs associated with balancing the system.

c) Efficient discharge of the licensee's obligations.

The proposed changes to TPD B, EID B and Transition Document (where applicable) support the implementation of the new charging methodology and arrangements. Standard Special Condition A5(5) of the NTS Licence sets outs the relevant methodology objectives and SSE believes that these objectives are better facilitated for the reasons detailed below ('Impact of the modification on the Relevant Charging Methodology Objectives').

d) Securing of effective competition between relevant shippers;

The proposed changes to TPD B, EID B and Transition Document (where applicable) support the implementation of the new charging methodology and arrangements. Charges derived from the Capacity Weighted Distance (CWD) methodology will only be stable and predictable if the FCC (Forecasted Contracted Capacity) values are stable. FCC values based on Obligated capacity, are published in advance in National Grid's (NG's) licence and change infrequently, they will be more stable than values based on forecasts derived by NG using a methodology that is yet to be defined and exposed to annual change. More predictable and stable charges will facilitate competition because, all else being equal, greater cost certainty will lower risk and will result in lower cost of capital for Shippers which will reduce barriers to entry and facilitate competition. Therefore, a stable Forecasted Contracted Capacity (FCC) based on Obligated baseline values in the licence is expected to improve competition compared with an FCC based on forecasts.

g) 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 proposed changes to TPD B, EID B and Transition Document (where applicable) support the implementation of the new charging methodology and arrangements including those elements required to comply with the EU Tariff Code.

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;	Positive
aa) That, in so far as prices in respect of transportation arrangements are established by auction, either: (i) no reserve price is applied, or (ii) that reserve price is set at a level - (I) best calculated to promote efficiency and avoid undue preference in the supply of transportation services; and (II) best calculated to promote competition between gas suppliers and between gas shippers;	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	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:

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;

SSE believes that the proposed utilisation of a new Reference Price Methodology which redistributes National Grid's costs on a geographic basis, weighted by capacity will enhance this objective compared to the current application of a Long Run Marginal Cost Methodology (LRMC) only when an NTS Optional Charge is employed.

However, there are unintended consequences which affect the distribution of charges to NTS customers and to the end consumer. For example, regardless of which FCC is chosen, the RPM does not demonstrate Cost Reflectivity for Exit points that are physically close to Entry points. This lack of cost reflectivity is a concern given the material impact on these customers. This concern can be partly mitigated by continued use of the NTS Optional Charge. Without an NTS Optional charge the CWD and postage stamp methodologies will not further cost reflectivity compared with the LRMC methodology.

The CWD methodology also generate high charges for exit and entry in the North of GB where there is spare capacity, but has relatively lower charges for exit in the South and South West of GB where there is less spare capacity. This lack of cost reflectivity may result in inefficient investment and customers will incur additional costs because it signals connection where additional investment would be required and dis-incentivises connection where spare capacity exists.

A postage stamp capacity based methodology will not reflect costs either with its uniform charge, irrespective of capacity constraints. Use of a Postage Stamp methodology at this time would be too extreme a departure from the current LRMC given the need for an element of locational signal at exit, points given current PARCA requests and future coal powered generator replacement.

A hybrid CWD methodology which seeks to retain an element of flow based charges will be more cost reflective and have a less distortive effect than a pure capacity based recovery regime which exacerbates the unintended consequences described above and in Relevant Objectives aa) (I) and c).

aa) That, in so far as prices in respect of transportation arrangements are established by auction, either:

(i) no reserve price is applied, or
(ii) (ii) that reserve price is set at a level –
(I) best calculated to promote efficiency and avoid undue preference in the supply of transportation services; and

(II) best calculated to promote competition between gas suppliers and between gas shippers; and

Promoting Efficiency and Economic principles associated with network charging

There are a number of economic principles which are typically associated with the definition of network charges. These are largely focused on ensuring efficient market outcomes. First, it is typically argued that network charges should be cost reflective. This means that they should reflect the (forward looking) costs which users impose on the network through a change in their use. This is important to achieving an economically efficient outcome: if charges are cost reflective, users will internalise the network costs which they cause when making a decision about how to use the network. This will in turn ensure that overall value chain costs are optimised.

The fact that it is forward looking costs which should be reflected is critically important. If there is a historic cost which exists, but cannot be changed in any way going forward by different use of the network by shippers, there is no value in terms of economic efficiency in sending a signal to shippers about that cost. Cost reflectivity should therefore only relate to new costs which would be created in the future or existing costs which can be avoided in the future as a result of a particular change in use.

This argument points to network prices being set according to forward looking marginal costs, as these are the costs incurred or avoided by incremental use. It has been argued that marginal cost related signals may be less relevant for some networks than others. This is not supported by economic theory, which suggests it is always relevant to send marginal cost related prices.

However, it is important that marginal cost as a concept is interpreted correctly. When there is an excess capacity in some locations as a result of reduction in network use over time, then the marginal cost of use may be close to or at zero. If there is spare capacity everywhere, the marginal cost everywhere may be zero. At this point, marginal cost based signals look very similar to commoditised flow based/ postage stamp charges. Second, it is obviously important that network companies can recover their allowed revenue. It is also clear that efficient cost reflective charges, as defined above, may not recover all costs which have been incurred. Therefore, additional charges are required to recover costs.

It is typically argued that such charges should have as an objective creating minimal changes in behaviour relative to a set of efficient charges. This is because, as previously established, there is no efficiency related reason to target historic costs at a particular set of users. By definition, they cannot be “un-incurred” and so there is no point in targeting them at a certain set of users as to do so will change behaviour in a way which reduce efficiency.

Basis for locational signals

CWD is not a marginal cost based methodology. It is a way of allocating total costs locationaly (in this sense it is an average cost approach). This is clear from the calculation steps involved: entry and exit points are given a weighting dependent on capacity and distance, and then *total allowed revenue* is recovered proportionately to these weights. There is no separate step of calculating cost reflective charges and then applying additional charges to recover total costs.

The fact that CWD is not based on marginal costs does not necessarily mean it is inappropriate. Empirically, CWD may have desirable properties in the correct conditions such as stability and predictability. However, the absence of a marginal cost basis means the chances of it deviating from a reasonable estimate of “stable” marginal costs is non-trivial. If it does so, economic theory suggests it will result in inefficient outcomes. The same can be said for a capacity based Postage Stamp model too where there is not spare capacity everywhere. Therefore, the more revenue collection that is allocated to up front capacity charges, rather than residual commodity charges risks greater distortion, 621B avoids this.

For example, if CWD happens to allocate significant cost to an entry point where there is spare capacity, this might increase the risk of cheap available gas at that entry point being priced out of the market, to the detriment of customers. If that entry point was a cross-border point, there is also a good case that the application of CWD could risk distorting efficient inter-state trade (one of the criteria for tariffs set out in NC TAR).

When comparing against the alternative modifications in an impact assessment, this potential downside of pure capacity CWD and Postage Stamp would need to be assessed against the benefit of an increase in the stability of charges, and a potential reduction in the cost of capital for shippers or reduction in risk premiums charged to customers.

Basis for revenue recovery

Objectives in relation to cost recovery

First, it is important to understand the objective behind the definition of cost recovery charges.

In its GTCR documentation, Ofgem states that "*we do not believe that the current use of non-locational commodity charges, levied for the purposes of managing under- and over-recovery of transmission services revenue should be continued as we do not consider them to be cost reflective in the context of TAR NC as their derivation does not incorporate the required cost drivers".*

Ofgem states that the approach is "*to move towards a more cost reflective tariff regime"* and interprets TAR NC as meaning that "*transmission tariffs should reflect costs incurred… including all historical network costs".* Ofgem appears to believe there can be a cost driver which links network use to these historical costs.

It is interesting to compare this to statements Ofgem has made elsewhere. In particular, in their Targeted Charging Review (TCR) document in electricity, https://www.ofgem.gov.uk/system/files/docs/2017/03/tcr-consultation-final-13-march-2017.pdf

Ofgem states that: "*Cost-reflectivity is less directly relevant for residual charges; however, it is important that residual charges do not unduly distort the signals provided by the forward-looking charges which are intended to be cost-reflective… residual charges do not relate to specific costs that any user imposes*".

In the TCR debate, Ofgem is similarly clear that cost reflectivity is not a valid objective when considering charges which recover residual revenue. Instead, Ofgem proposes three different principles for assessing approaches to residual charging: "*reducing distortions, fairness and proportionality and practicality considerations"*. In power, Ofgem has suggested that a capacity recovery charge because this minimises the distortions arising from behind the meter generation and embedded vs transmission connected generation. A gas commodity charge arguably achieves these goals for residual revenue recovery, because there are no similar concerns relating to behind the meter gas production or storage.

Ofgem's TCR position is closer to an approach which economic theory suggests should result in greater efficiency and hence improved overall welfare for GB customers. There is clearly a risk that charging historic costs to users who then change their behaviour *increases* the overall cost of serving gas to meet GB demand.

Capacity or commodity

Ofgem's position in relation to gas network charges is not entirely consistent with what economic theory might suggest. From an economic efficiency perspective, a key difference between capacity and commodity prices lies in differences in their ability to be passed through to wholesale prices by shippers, and hence the likelihood of the charges resulting in changes in behaviour which result in inefficiency.

Consider the situation at entry points, and suppose shippers face an additional uniform commodity charge of £X/MWh at entry points which does not reflect forward looking costs but helps to recover allowed revenue.

Each shipper will face the same charge of £X for each MWh of gas they move through the entry point. Therefore, when considering the price at which they would sell gas at the NBP, each shipper's cost would be £X higher per MWh than it otherwise would be. Compared to the situation with no commodity charge at entry, NBP prices should be expected to be £X/MWh higher. In other words, the entry commodity charge has been 100% passed through to buyers at the NBP. As a result, there has been no change in the competitive position of any shipper, and there should be no change to the way in which gas is supplied to GB customers**. If the supply mix was efficient before the charge, it would be as efficient after the charge.**

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Profit made selling when the NBP price is greater than their cost will help cover the cost of the capacity charge. If some shippers do not make enough profit (e.g. because they have higher cost supplies) they will cease to be able to afford the capacity charge and will not purchase capacity. This will effectively result in the exit of higher cost / lower profit supplies from the GB supply mix. In other words, because capacity charges cannot be passed straight through to the NBP price, they can change the supply merit order and the way in which demand is satisfied, and could reduce economic efficiency as a result. It is also worth noting that a capacity charge increases risks to shippers compared to a commodity charge, because its recovery is outside their control. Arguably, they are not as well placed to manage this risk as customers, resulting in an increase in the cost of capital charged for its management.

Alternatively, if capacity is purchased on the day of use to reflect incremental need, higher capacity costs arising from the CWD model will feed into the marginal cost of supply and the wholesale NBP price will increase.

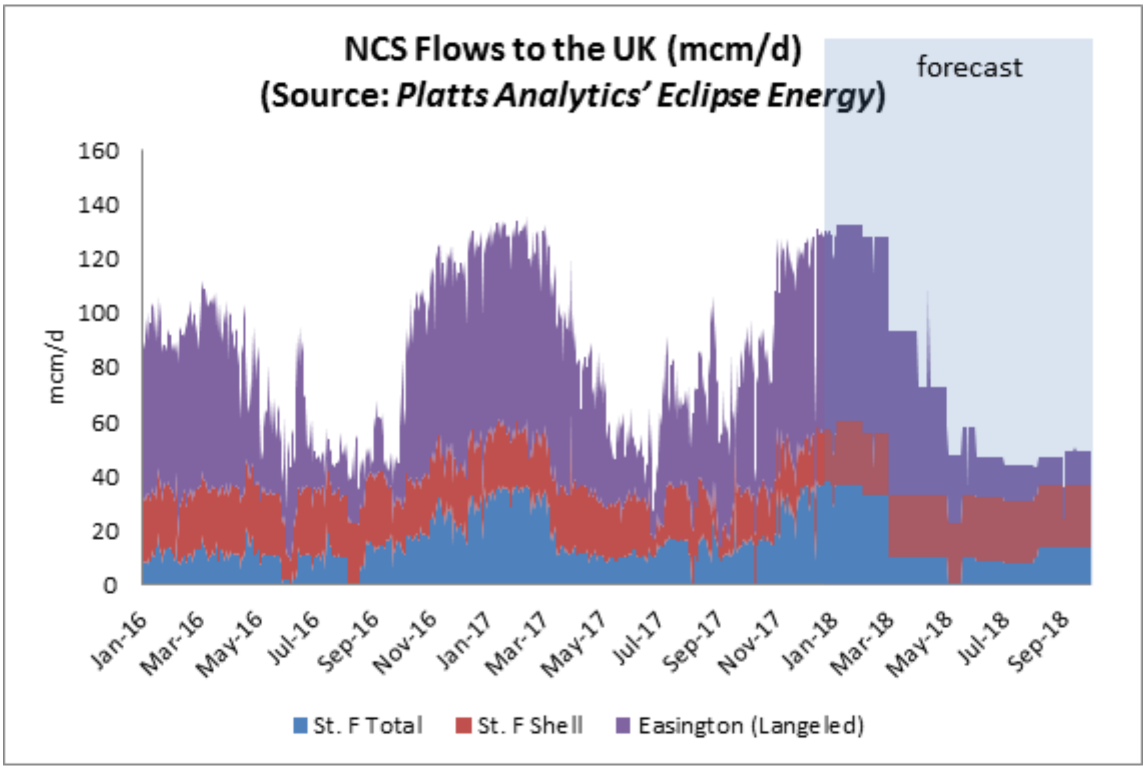
The higher capacity charges in 621 are less efficient than the 621B charges as illustrated in the examples below:

Increased costs to customers. Capacity Mechanism

Risk of capacity substitution means that exit capacity at electricity generators may be purchased in advance. The increased capacity costs at exit will increase fixed costs that are bid into the electricity Capacity Mechanism Auction. Comparing 621 with 621b, post transition, and using Pembroke as an example would result in an increase In cost of 0.0325-0.00184 p/kwh/d which equates to £2.3 /kW based on 96 GWh/day. If this plant were marginal and set the clearing price then, all else being equal, the increase in cost across a typical 50 GW auction volume would be £115m/year charged to and paid by increases to customer bills. There may be a fall in power cost of £0.25 MWh due to the reduction in TO commodity charges of 0.7 p/th. This could reduce power costs by £75 m/yr based on 300 TWh/yr resulting in a net increase in costs to power customers of £40 m/yr.

Increased costs to customers. More expensive NBP price

St Fergus will have the most expensive entry capacity charge in a 621 Enduring capacity only regime at 0.0811 p/pkWh/day. St Fergus currently receives gas every day from Norway as shown below.



In the future, If flows are incremental and discretionary on the day, then all else being equal, one can expect the marginal capacity cost to feed into the cost of wholesale gas at the NBP. The difference between 621 and 621B, post transition, including commodity revenue recovery charge is. 0.0811-0.0612 = 0.02 p/kWh/d. Applied to annual gas demand of 900 TWh.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/632523/Chapter_4.pdf

This equals a cost increase of £179m/year to customers.

Increased costs to customers. More expensive DN capacity charge

After the Transition period, higher capacity charges for DNs in 621 compared with 621B will increase charges to domestic customers. Although this will be offset to a degree by a reduction in flow based revenue recovery charges the higher fixed costs will have a disproportionate effect on low use, vulnerable energy customers.

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..Given the future uncertainty over sources of supply and variable demand on any given day the hybrid approach to CWD charging in 621B provides an element of forward looking marginal price signals and recovery of allowed revenue for NG on a fair, non-discriminatory basis, where users pay for the benefits they obtain by using the network. . The RPI indexation applied to the NTS Optional Charge also furthers this Objective.

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

To minimise the impact of competitive distortion described above a flow based commodity revenue recovery charge is preferable to high capacity based charges as would be the case in 621B. Particularly, it avoids reduced supply competition and reduced security of supply due to storage curtailment from increased capacity costs.

Even with an 86 % discount to storage capacity costs and exemption from all enduring revenue recovery charges and non-transmission charges, overall transportation charges will increase for Hornsea and Aldbrough storage assets in 621 and 621J, post transition, compared with 621B, this has 2 impacts:

Ultimately, it is likely that the increased capacity based transportation charges will adversely affect profitability of storage assets. SSE states in its annual reports that storage has been loss making for the last two years. For gas storage operators it is a question of how long assets can be maintained without the prospect of making economic returns. With the closure of Rough and the decline of UKCS production any further closure of GB storage will reduce competition in supply and adversely impact security of supply.

In the short term, use of on the day bookings of high cost capacity will result in incremental capacity costs being internalised in operational dispatch. This means that gas price will have to rise higher or fall lower before storage operation can become economic. Higher volatility can be expected to lead to higher customer prices because of increased price risk and imbalance penalties for shippers and suppliers. This increased risk will increase the cost of capital for Shippers and will be detrimental for competition by rising barriers to entry.

The following text is repeated from relevant objective aa) for efficiency and undue preference. The unintended consequences of a pure capacity charge in the enduring period will also have an an impact on competition, relevant objective c).

Promoting Efficiency and Economic principles associated with network charging

There are a number of economic principles which are typically associated with the definition of network charges. These are largely focused on ensuring efficient market outcomes. First, it is typically argued that network charges should be cost reflective. This means that they should reflect the (forward looking) costs which users impose on the network through a change in their use. This is important to achieving an economically efficient outcome: if charges are cost reflective, users will internalise the network costs which they cause when making a decision about how to use the network. This will in turn ensure that overall value chain costs are optimised.

The fact that it is forward looking costs which should be reflected is critically important. If there is a historic cost which exists, but cannot be changed in any way going forward by different use of the network by shippers, there is no value in terms of economic efficiency in sending a signal to shippers about that cost. Cost reflectivity should therefore only relate to new costs which would be created in the future or existing costs which can be avoided in the future as a result of a particular change in use.

This argument points to network prices being set according to forward looking marginal costs, as these are the costs incurred or avoided by incremental use. It has been argued that marginal cost related signals may be less relevant for some networks than others. This is not supported by economic theory, which suggests it is always relevant to send marginal cost related prices.

However, it is important that marginal cost as a concept is interpreted correctly. When there is an excess capacity in some locations as a result of reduction in network use over time, then the marginal cost of use may be close to or at zero. If there is spare capacity everywhere, the marginal cost everywhere may be zero. At this point, marginal cost based signals look very similar to commoditised flow based/ postage stamp charges. Second, it is obviously important that network companies can recover their allowed revenue. It is also clear that efficient cost reflective charges, as defined above, may not recover all costs which have been incurred. Therefore, additional charges are required to recover costs.

It is typically argued that such charges should have as an objective creating minimal changes in behaviour relative to a set of efficient charges. This is because, as previously established, there is no efficiency related reason to target historic costs at a particular set of users. By definition, they cannot be "un-incurred" and so there is no point in targeting them at a certain set of users as to do so will change behaviour in a way which reduce efficiency.

Basis for locational signals

CWD is not a marginal cost based methodology. It is a way of allocating total costs locationaly (in this sense it is an average cost approach). This is clear from the calculation steps involved: entry and exit points are given a weighting dependent on capacity and distance, and then *total allowed revenue* is recovered proportionately to these weights. There is no separate step of calculating cost reflective charges and then applying additional charges to recover total costs.

The fact that CWD is not based on marginal costs does not necessarily mean it is inappropriate. Empirically, CWD may have desirable properties in the correct conditions such as stability and predictability. However, the absence of a marginal cost basis means the chances of it deviating from a reasonable estimate of "stable" marginal costs is non-trivial. If it does so, economic theory suggests it will result in inefficient outcomes. The same can be said for a capacity based Postage Stamp model too where there is not spare capacity everywhere. Therefore, the more revenue collection that is allocated to up front capacity charges, rather than residual commodity charges risks greater distortion, 621B avoids this.

For example, if CWD happens to allocate significant cost to an entry point where there is spare capacity, this might increase the risk of cheap available gas at that entry point being priced out of the market, to the detriment of customers. If that entry point was a cross-border point, there is also a good case that the application of CWD could risk distorting efficient inter-state trade (one of the criteria for tariffs set out in NC TAR).

When comparing against the alternative modifications in an impact assessment, this potential downside of pure capacity CWD and Postage Stamp would need to be assessed against the benefit of an increase in the stability of charges, and a potential reduction in the cost of capital for shippers or reduction in risk premiums charged to customers.

Basis for revenue recovery

Objectives in relation to cost recovery

First, it is important to understand the objective behind the definition of cost recovery charges.

In its GTCR documentation, Ofgem states that "*we do not believe that the current use of non-locational commodity charges, levied for the purposes of managing under- and over-recovery of transmission services revenue should be continued as we do not consider them to be cost reflective in the context of TAR NC as their derivation does not incorporate the required cost drivers".*

Ofgem states that the approach is "*to move towards a more cost reflective tariff regime"* and interprets TAR NC as meaning that "*transmission tariffs should reflect costs incurred… including all historical network costs".* Ofgem appears to believe there can be a cost driver which links network use to these historical costs.

It is interesting to compare this to statements Ofgem has made elsewhere. In particular, in their Targeted Charging Review (TCR) document in electricity, https://www.ofgem.gov.uk/system/files/docs/2017/03/tcr-consultation-final-13-march-2017.pdf

Ofgem states that: "*Cost-reflectivity is less directly relevant for residual charges; however, it is important that residual charges do not unduly distort the signals provided by the forward-looking charges which are intended to be cost-reflective… residual charges do not relate to specific costs that any user imposes*".

In the TCR debate, Ofgem is similarly clear that cost reflectivity is not a valid objective when considering charges which recover residual revenue. Instead, Ofgem proposes three different principles for assessing approaches to residual charging: "*reducing distortions, fairness and proportionality and practicality considerations"*. In power, Ofgem has suggested that a capacity recovery charge because this minimises the distortions arising from behind the meter generation and embedded vs transmission connected generation. A gas commodity charge arguably achieves these goals for residual revenue recovery, because there are no similar concerns relating to behind the meter gas production or storage.

Ofgem's TCR position is closer to an approach which economic theory suggests should result in greater efficiency and hence improved overall welfare for GB customers. There is clearly a risk that charging historic costs to users who then change their behaviour *increases* the overall cost of serving gas to meet GB demand.

Capacity or commodity

Ofgem's position in relation to gas network charges is not entirely consistent with what economic theory might suggest. From an economic efficiency perspective, a key difference between capacity and commodity prices lies in differences in their ability to be passed through to wholesale prices by shippers, and hence the likelihood of the charges resulting in changes in behaviour which result in inefficiency.

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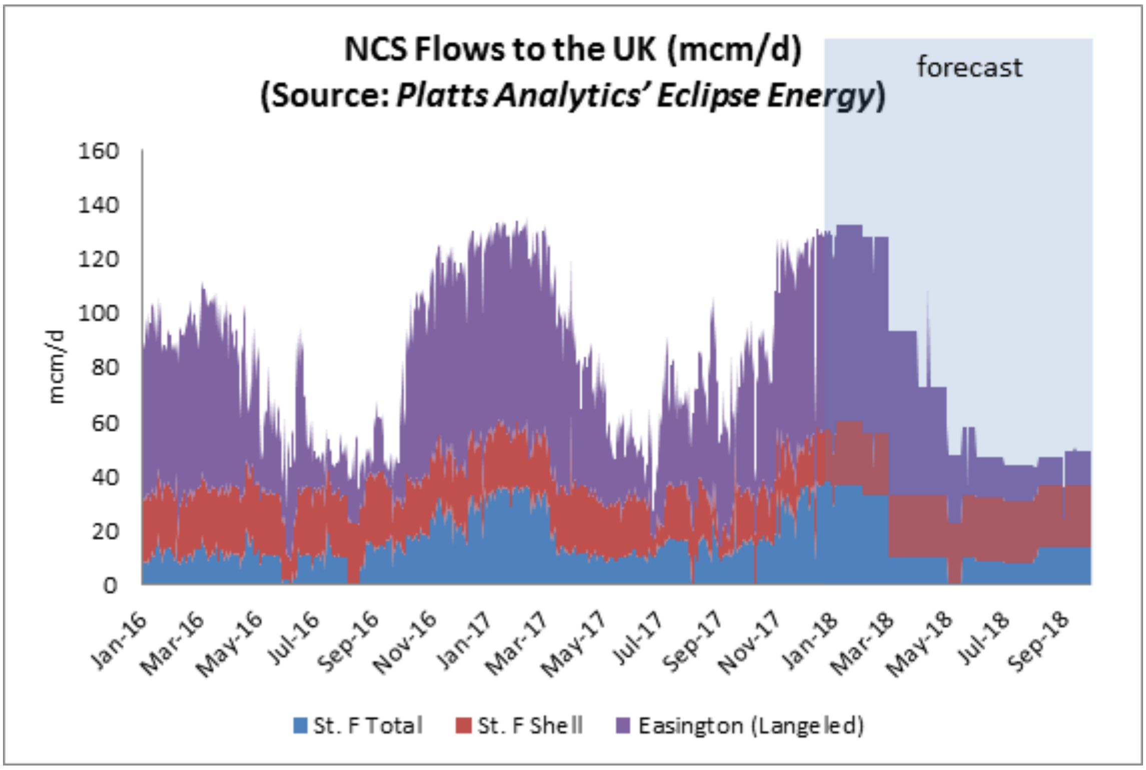

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After the Transition period, higher capacity charges for DNs in 621 compared with 621B will increase charges to domestic customers. Although this will be offset to a degree by a reduction in flow based revenue recovery charges the higher fixed costs will have a disproportionate effect on low use, vulnerable energy customers.

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 proposer of 621B believes the modification is fully compliant with the Commission Regulation (EU) 2017/460, of 16 March 2017, establishing a network code on harmonised transmission tariff structures for gas. One area that may benefit from further clarification is Article 4(3), Transmission and non-transmission services and tariffs.

The default position is that the transmission services revenue shall be recovered by capacity based tariffs but "as an exception" and subject to the approval of the national regulatory authority, a part of the transmission service may be recovered by (a) flow based charge; or (b) complementary revenue recovery charge (being identified as "commodity based transmission tariffs") provided that they meet the requirements contained in Article 4(3)(b), summarised below:

- the complementary revenue recovery charge shall be :
    1. Levied for the purpose of managing revenue under recovery.
    2. Calculated on the basis of forecasted flows
    3. Applied to points other than IPs
    4. Applied after the NRA has made an assessment of cost -reflectivity and on cross - subsidisation between IPs and non-IPs.

- To the extent that use of such commodity based transmission tariff is approved there is no time period for which this must apply – i.e. there is nothing that would prohibit long term use of a commodity based transmission tariff and make the 621 proposal more favourable/compliant with the Regulations;

There is a reference to the application of a commodity based transmission tariff being potentially permitted for a part of the transmission services. Whilst this is a matter of interpretation ("part" could mean the entire part for example) this suggests that a commodity based transmission tariff would be used together with a capacity based transmission tariff, as is the intention of 621B.

Case for exception for GB (c.f. TAR Article 4(3b))

The "exception" for the GB gas market is important because without it customers will be exposed to the increased costs highlighted in the above relevant objectives and to reduced levels of supply and decreased security of supply.

The GB gas transmission system is exceptional in the context of EU Member States in several ways.

The most significant difference is that the system was designed and expanded to meet the peak entry requirements related to UKCS gas production. DUKES 2017 reports that gas production has fallen to "just over a third of the peak level recorded in 2000". Similarly, exit capacity is generally unconstrained, although scope exists for local or temporary congestion to become an issue in the future (e.g. due to new CCGT investment or outages).

This context of permanent excess capacity presents specific issues for structuring charges in a manner to recover historic costs in the least distortive manner.

For this reason, it is logical to adopt an approach to setting transmission tariffs in GB that is exceptional when compared to other jurisdictions covered by the TAR NC. In particular, it is reasonable to consider the role of commodity charges as permitted by Article 4 (3b). Modification 621B presents a pragmatic compromise – the slightly dampened locational price signal in capacity charges proposed in 621B (relative to 621) reduces the risk of distorting trade between the UK and Norway (as a consequence of punitively high entry charges at St Fergus in particular) whilst preserving a locational signal which might be factored into the next wave of CCGT investment.

Levying a commodity charge is the fairest means to manage revenue under-recovery in this context as it is fairer on domestic customers and can be efficiently passed through to other market participants as an uplift in the gas price or as a marginal increase in the cost of electricity generation (without affecting the merit order of CCGT).

8 Implementation

This modification and the resulting methodology change will take effect for prices from 01 October 2019, in order to achieve compliance with the EU Tariff Code.

The transition between the application of the prevailing and proposed methodology/rules in respect of Reserve Prices for capacity auctions is expected to take effect as illustrated in the Appendix of this Proposal.

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.

Appendix 1: Impacts of Proposal on NTS Capacity Auctions

Acronym	Full name	Dir.		Class			Product				Transition		Calculation and Publication*				Published Price (at time of auction)	Payable Price
		Entry	Exit	Firm	Interruptible	Off Peak	Annual	Quarterly	Monthly	Daily	Last 'Old Rules' Auction	First 'New Rules' Auction	Last Old Calculation	Last Old Publication	First New Calculation	First New Publication		
	INTERCONENCTION POINTS																	
IPAY	Inteconnection Point Annual Yearly	Y	Y	Y			Y				Jul 2018	Jul 2019	Oct 2017	May 2018	Oct 2018	May 2019	Y1: actual Y2-15: indicative	Prevailing price plus premium
IPAQ	Interconnection Point Annual Quarterly	Y		Y				Y			May 2019	Aug 2019	Oct 2017	May 2018	Oct 2018	Jan 2019	actual	Prevailing price plus premium
			Y	Y				Y					Mar 2019	May 2019	Feb 2019	May 2019		
IPRM	Interconnection Point Rolling Monthly	Y		Y					Y		Aug 2019	Sep 2019	Jun 2018	1 Jul 2018	Feb 2019	May 2019	actual	Prevailing price plus premium
			Y	Y					Y				Mar 2018	May 2018				
IPDA	Interconenction Point Day Ahead	Y		Y	Y					Y	29 Sep 2019 (F: 15:30, I: 16:30)	30 Sep 2019 (F:15:30, I: 16:30)	Jun 2018	Jul 2018	Feb 2019	May 2019	actual	Prevailing price plus premium
			Y	Y	Y					Y			Mar 2018	May 2018				
IPWD	Interconnection Point Within Day	Y		Y	Y					Y	30 Sep 2019 (00:00 - 00:30)	30 Sep 2019 (18:00 - 01:30)	Jun 2018	Jul 2018	Feb 2019	May 2019	actual	Prevailing price plus premium
			Y	Y	Y					Y			Mar 2018	May 2018				
	NON-INTERCONNECTION POINTS																	
QSEC	Quarterly Stytem Entry Capacity	Y		Y				Y			Mar to May 2019	Mar to May 2020	Oct 2018	Jan 2019	Oct 2019	Jan 2020	indicative	Prevailing price plus premium
MSEC	Monthly System Entry Capacity	Y		Y					Y		Feb 2019	Feb 2020	Jul 2018	31 Jul 2018	Feb 2019	May 2019	M1-6: actual M7-18: indicative	Prevailing price plus premium
RMTTSEC	Rolling Monthly Trades and Transfer System Entry Capacity	Y		Y					Y		Aug 2019	Sep 2019	Jun 2018	1 Jul 2018	Feb 2019	May 2019	actual	Prevailing price plus premium
DADSEC	Day Ahead Daily System Entry Capacity	Y		Y	Y					Y	29 Sep 2019	30 Sep 2019	Jun 2018	Jul 2018	Feb 2019	May 2019	actual	Prevailing price plus premium
WDDSEC	Within Day Daily System Entry Capacity	Y		Y						Y	30 Sep 2019	1 Oct 2019	Jun 2018	Jul 2018	Feb 2019	May 2019	actual	Prevailing price plus premium
EAFLEC	Enduring Annual Flat Exit Capcity		Y	Y			Enduring, sold Annually				Jul 2018	Jul 2019	Mar 2018	May 2018	Feb 2019	May 2019	Y4+: indicative	Prevailing
AFLEC	Annual Flat Exit Capacity		Y	Y			Y				Jul 2018	Jul 2019	Mar 2018	May 2018	Feb 2019	May 2019	Y1: actual Y2-3: indicative	Prevailing
DADNEX	Day Ahead Daily NTS Exit Capacity		Y	Y		Y				Y	29 Sep 2019	30 Sep 2019	Mar 2018	May 2018	Feb 2019	May 2019	actual	Prevailing price plus premium
WDDNEX	Within Day Daily NTS Exit Capacity		Y	Y						Y	30 Sep 2019	1 Oct 2019	Mar 2018	May 2018	Feb 2019	May 2019	actual	Prevailing price plus premium

F - Firm *I - Interruptible* ** these dates are starting points for the respective calculation and publication processes*