UNC Modification	At what stage is this document in the process?
# UNC 0678I: ## Amendments to Gas Transmission Charging Regime including Wheeling and an Ireland Security Discount	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 treated as an Alternative to Modification 0678 and should proceed as such under broadly the same timetable agreed with the Authority.
	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 same timetable as set for Modification 0678 is adhered to as far as practicable. That timetable is set out below, is evolving and now includes an additional date: Workgroup 7a. The views expressed by the Proposer at those Workgroups that have already taken place are consistent with the content of this Modification. A pre-Modification discussion was provided to the Workgroup 0678 on 05 of February.

Workgroup 1 - "Approach. Compliance"	29 January 2019
Workgroup 2 - "Integration of RPM, FCC, Revenue Recovery and existing contracts"	31 January 2019
Workgroup 3 - "Multipliers and Discounts. 'Shorthaul' approach" (part of NTSCMF)	05 February 2019
Workgroup 4 - "Compliance. FCC"	11 February 2019
Workgroup 5 - "Non-transmission charges. Final overview"	13 February 2019
Workgroup 6 - "Workgroup Report"	14 February 2019
Workgroup 7 - "Workgroup Report"	18 February 2019
Workgroup 7a – "Assessment of Alternative solutions"	20 February 2019

Any questions?

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Workgroup 8 - “Workgroup Report”	25 February 2019
Workgroup 9 - “Workgroup Report”	27 February 2019
Workgroup 9a - “Assessment of Alternative solutions	28 February 2019
Workgroup 10 - “Workgroup Report. Compliance”	04 March 2019
Workgroup 10a - “Assessment of Alternative solutions” (part of NTSCMF)	05 March 2019
Workgroup 11 – “Finalise Workgroup Report”	06 March 2019
Draft Modification Report issued for consultation	08 March 2019
Consultation Close-out for representations	05 April 2019
Final Modification Report available for Panel	12 April 2019
Modification Panel recommendation	18 April 2019
Final Modification Report issued to Ofgem	23 April 2019

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1 Summary

What

This Modification proposes to introduce a new Gas Transmission Charging regime that produces stable and predictable transportation charging and is compliant with the forthcoming EU Tariff Code (Regulation

2017/460). This Modification also takes into account the decision to reject UNC0621[1] and its Alternatives citing areas of non-compliance. This Proposal addresses the areas of compliance identified in this decision.

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 (undertaken by the NTS Charging Methodology Forum (NTSCMF) – concluding in January 2017[2] – with updated analysis presented during development of UNC Modification Proposal 0621 in April 2018[3]) identified that it is too volatile, unpredictable and does not provide stability of charges for Users.

How

This Modification proposes to introduce changes to the charging framework by way of making changes to UNC TPD Section Y. It will also be necessary to make changes to other sections of the UNC TPD (Sections B, E and G) and EID Section B).

At its core, this Modification proposes to move from a Reference Price Methodology (RPM) that calculates the capacity prices using the Long Run Marginal Cost (LRMC) method to one that is based on a Capacity Weighted Distance (CWD) approach. It also proposes an updated approach with changes to capacity pricing multipliers, capacity discounts and interruptible pricing review to better meet the required objectives.

It introduces some terminology from the EU Tariff Code, specifically 'Transmission Services Revenue' and 'Non-Transmission Services Revenue'. 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 Modification also introduces, for some aspects of this methodology change, UNC mechanisms to review and refine components of the charging framework, notably the Forecasted Contracted Capacity (FCC), capacity pricing multipliers and interruptible pricing, over time so they continue to better facilitate the relevant methodology objectives[4] and support the evolution of the GB charging regime.

This Proposal should be treated as an Alternative to National Grid's 0678 Modification as it differs from it in the following key areas:

1) It introduces two conditional transmission capacity products:

    a) A '**Wheeling'** charge to be applied at zero distance routes. Modification 0678 does not include a Wheeling change. As explained later in this proposal the objective of Wheeling is the same as that of the Optional Charge proposed in Modification 0678B however the solution offered in this

[1] See https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/qgf/page/2018-12/Ofgem%20Decision%20Letter%200621.pdf

[2] Material at https://www.gasgovernance.co.uk/ntscmf/subg1page

[3] Material at https://www.gasgovernance.co.uk/0621/200418

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

Modification is deemed to be more simplistic and avoids discriminatory charges for entry and exit routes with 0 km distance as defined within the distance matrix that will be included in Annex A of the FCC Methodology statement. Wheeling is an established concept in other European member states such as Belgium and the Netherlands.

b) An' **Ireland Security Discount,** in line with Article 9 TAR NC[5] and Article 4.2 as this is a conditional capacity product that allows discounts at entry points from and exit points to **infrastructure developed with the purpose of ending the** isolation of member states.

2) Forecasted Contracted Capacity (FCC) methodology will sit outside of the UNC in a new methodology statement, however TPD Section Y UNC will state that changes to the **FCC methodology can only be amended every four years** in order to maintain predictable prices where possible within the methodology. As a transitory arrangement, the FCC methodology may be amended one year after implementation, and subject to consultation as outlined in Section 5, if deemed necessary by National Grid.

3) The Proposer recommends that the Effective Date for charges driven by this proposal is 01 October 2019 or any subsequent 1st October date after this point. Charges must be published 4 months in advance of this date.

A wider solution to replace the Optional Commodity Charge must be considered, therefore the Proposer supports its progression within the Request Group 0670R 'Review of the charging methodology to avoid the inefficient bypass of the NTS'[6].

2 Governance

Justification for Consideration as an Alternative to Modification 0678

This Modification addresses the same issues that have been raised under Modification 0678; if either Modification were to be implemented then it would result in major changes to Section Y of the UNC, effectively introducing a new charging methodology for gas transmission. This Modification has many common features to Modification 0678 but the Proposer believes it improves on the solution being proposed by National Grid's 0678.

The timetable that has been set for finalising the Workgroup Report for Modification 0678 is very aggressive but approved by Ofgem under a request for urgency. Being conscious of the need for urgency and the arguments in support of urgency contained within Modification 0678, this Modification should as far as possible follow the same timetable as Modification 0678 so that all proposals can be considered by Panel, industry and Ofgem at the same time, making for an efficient governance process. It is the view of the Proposer that raising this Modification as a new Modification, which may or may not be granted urgent status, would result in a different timetable, would require separate Workgroup meetings, be consulted on separately, be considered by Panel separately and would therefore, make for an unnecessarily complex

[5] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.072.01.0029.01.ENG&toc=OJ:L:2017:072:FULL

[6] http://www.gasgovernance.co.uk/0670

and inefficient process. This could severely impact the intentions behind the urgency that has been granted for Modification 0678.

In summary, this Modification has been raised as a valid alternative solution to the one being proposed under Modification 0678.

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 treated as an Alternative to Modification 0678. It should proceed as such under the same timetable as agreed with the Authority for Modification 0678 as far as practicable.

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, has 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 capacity booking behaviours, and the impact on the charges as a result due to the interactivity inherent within the methodology, that were not anticipated. An additional regulatory driver for changes to the charging framework are:

3.1.1. The EU Tariff Code[7]; and

3.1.2. Ofgem's Gas Transmission Charging Review[8] and decision on UNC0621 and its Alternatives[9]. In addressing the decision letter to reject UNC0621 and its Alternatives National Grid is proposing changes outlined in this Modification and summarised in Annex 1. This table highlights for awareness a comparison between UNC0621 and this Modification Proposal and where specific areas of compliance need to be addressed. Addressing these areas of compliance better facilitates Relevant Objective (g) and Relevant Charging Methodology Objective (e) as outlined in Section 7 of this Modification Proposal.

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[7] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.072.01.0029.01.ENG&toc=OJ:L:2017:072:FULL

[8] https://www.ofgem.gov.uk/gas/transmission-networks/gas-transmission-charging-review

[9] https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/ggf/page/2018-12/Ofgem%20Decision%20Letter%200621.pdf

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. Zero priced capacity has arguably resulted in overbooking of capacity, surplus to User's requirements. The high TO commodity charges, driven largely by the zero-priced capacity can also result in unstable and unpredictable charges. Other charges, such as the NTS Optional Commodity charge (also referred to as "Short haul"), 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.

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.

3.4.4. Certain charges in respect of NTS Capacity (but not including Overrun Charges) or the surrender of NTS Capacity are classified as components of SO allowed revenue but as they are levied in respect of a Transmission Service, need to be included within Transmission Services Charge revenue.

Reference Price Methodology (RPM)

3.1. The current Reference Price Methodology (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.

3.2. Through an assessment of RPMs[10], the main Alternative considered from the current method was the Capacity Weighted Distance (CWD) model. By design this approach is generally more

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

predictable, less volatile and more stable in nature and is more suited to a system that is about use and revenue recovery associated to use rather than linked to investment (marginal pricing).

3.3. The proposed use of CWD in the RPM resolves this issue by narrowing the range of prices and as such making them more predictable. 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 an 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.

3.4. As a result of changing the RPM, any adjustments, discounts and other charges must be reviewed in order to avoid unintended consequences and to ensure that a clear impact assessment (including any Ofgem Impact Assessment) can be carried out on the total impact of these adjustments, discounts and other charges to NTS customers and to the end consumer.

3.5. This Proposal considers compliance with the EU Tariff Code which has a deadline to implement the changes by 31 May 2019. Price changes would apply from 01 October 2019 or a 01 October date in a succeeding year in line with a decision by Ofgem to implement. A 01 October date for the application of new charges is necessary to accommodate the commercial and contractual planning cycle of gas industry participants: commercial contracts are structured around the gas year (01 October to 30 September) and rely on having good foreknowledge of what transmission charging arrangements are likely to be. For example, some contracts may be based on the existence of "short-haul" arrangements whilst others will depend on counterparties having a good understanding of the basic charging components such as how any revenue under-recovery will be treated by National Grid. Mid-year changes to the structure of the charges or the rules on how they will apply would promote uncertainty and undermine trading activity that is necessary to help promote GB market liquidity.

3.6. This Proposal also seeks to establish a framework for review and update of key inputs to the newly established RPM which will further the objectives of the RPM.

3.7. It also aims to simplify the charging methodology, limiting aspects of the methodology whereby some charges can materially impact other charges and also eliminating the influence between Transmission and Non-Transmission Services.

3.8. In respect of compliance with EU Tariff Code, Recital 3 states *"…in order to achieve and ensure a reasonable level of cost reflectivity and predictability … transmission tariffs need to be based on a reference price methodology using specific cost drivers. …Where the proposed reference price methodology is other than the capacity weighted distance reference price methodology, the latter should serve as a counterfactual for comparison with the proposed reference price methodology.*"

3.9. Noting that Gas Transportation costs are sensitive to both a) the distance over which gas is transported; and b) the capacity made available over that distance, a pricing model which calculates Reference Prices that takes account of these elements is *ipso facto* more cost reflective than models that do not take both of these into account. For example, in the case of a Postage Stamp RPM, the use of an aggregated cost driver results in the same unit costs for all GB points and is therefore not cost reflective given the sensitivities stated above. Effectively, in the Postage Stamp RPM any bespoke cost drivers for transportation to individual points (or groups of points) is effectively ignored and is not sensitive to those elements which influence National Grid's costs.

3.10. In conclusion, the Proposer does not believe a Postage Stamp RPM meets the criteria set out in Recital (3) given the lack of cost reflectivity when compared to a CWD RPM (being the 'counterfactual' comparison RPM mandated by Recital (3)). The use of a CWD RPM, and the way it is applied to GB, will deliver a regime that is more cost reflective than both the existing LRMC RPM and the alternative approach of a Postage Stamp RPM.

Forecasted Contracted Capacity (FCC)

3.11. The proposed changes to the charging regime may result in changes to commercial behaviours in the procurement of capacity rights. The proposal for a forecast of contractual capacity (FCC) will be a key input into the reference price calculation.

3.12. It is proposed that the FCC shall be a forecast of capacity bookings at each Entry and Exit Point. The value will be determined in accordance with a methodology statement that will be referenced in the UNC and will not form part of Section Y of the UNC. The FCC Methodology is not proposed to be incorporated into the UNC in order to maintain a high degree of predictability in the process to determine the values using a developed methodology. Each year the methodology will be followed to produce tariffs for the applicable year. The use of a methodology contributes towards predictability for the tariffs to be calculated and a known set of values and logical steps to derive an FCC for the applicable year. At the same time the FCC is updated, there will be an additional adjustment to the reserve prices in order to account for the anticipated under collection driven by the application of any discounts (e.g. interruptible and specific capacity discounts) and the Wheeling charge.

3.13. Having the methodology in a statement outside of the UNC provides the flexibility around the process to update the FCC content and also ensures a timetable of change can be followed such that changes to the methodology can be completed and implemented in an efficient and timely manner in order to set tariffs. The updates will be reflected in the appropriate transportation charging statement and charging models. This review of FCC values will, at an appropriate point, take account of any behavioural changes in capacity procurement observed under the revised charging regime with the aim of aligning the FCC to actual bookings, in line with the methodology statement.

3.14. The FCC Methodology is proposed to take account of a range of inputs to inform a forecast for the gas year for which tariffs are to be generated. These inputs will look to take account of both historical and forecast data such as, and not limited to, a forecast of GB demand, historical sold capacity, historical flows on the NTS applicable to each Entry and Exit point. The resulting forecasted contracted capacity will be applicable for the tariff (gas) year for which Reference Prices are being produced. As part of the review of historical sold capacity it will also review the historical capacity bookings (where capacity has been allocated at a price greater than zero at each Entry and Exit Point), and forecast flow levels, to determine a value that will inform the proportion of capacity bookings for each specific Entry and Exit Point. The FCC initial methodology will be determined by National Grid and take effect in the event of implementation. Using sold levels (only where a price greater than zero is the allocated price) takes account of the change in interruptible pricing. As there is a move away from 100% discounts to a 10% discount, the approach will reflect the booking levels where those procuring capacity have been paying a price greater than zero. The assumption on this particular item is that, as they will have incurred a liability, this capacity is more sought after than that for which a 100% discounted (zero) price was the outcome.

3.15. The FCC will be reviewed ahead of each tariff year and updates will be communicated to industry as part of the publication of charges. At the same time the FCC is reviewed and updated, there will be

an additional adjustment to the reserve prices in order to account for the anticipated under collection driven by the application of any discounts (e.g. interruptible and specific capacity discounts).

Multipliers

3.16. 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.

3.17. Multipliers are applied to the Reference Price to produce the Reserve Price. Under the EU Tariff code (Article 13), the Multipliers for Interconnection Point (IP) quarterly standard capacity products and for IP monthly standard capacity products should be no less than 1 and no more than 1.5. For IP daily standard capacity products and IP within-day standard capacity products, the Multipliers should be 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.

3.18. It is proposed a Multiplier of 1 for all capacity products as the Proposer does not wish to create an artificial incentive for procurement of one capacity product in preference to another product. As the System Operator, National Grid would prefer that Users of the system make their own commercial decisions when procuring capacity taking account of the duration required, the timing of the commitment & payment and the risk of scarcity (demand exceeding supply).

3.19. Given the proposal for the Multiplier to be explicit in the UNC, any subsequent change to the Multiplier would be subject to the UNC change process. This aspect is neutral on cost reflectivity grounds as the other aspects of the RPM apportion the charges, this makes no distinction between long or short-term capacity.

3.20. Beyond 30 September 2020, or in line with the implementation of this Modification, Multipliers for IPs need to be consulted on each year (as per Article 28 of the EU Tariff code). Multipliers applicable to all Entry and Exit Points from implementation of this Modification are provided in the relevant part of section 5 of this Modification (Reserve Prices produced from Reference Prices).

Discounts (Article 9)

3.21. The pricing of Interruptible (Entry) / Off-peak (Exit) 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.

3.22. 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 ‘A’ factor make up the adjustment to be applied to the Reserve Price of the equivalent standard firm capacity product. The interruptible adjustment applicable to all Entry and Exit Points from implementation of this

Modification are provided in the relevant part of section 5 (Interruptible (Entry) and Off-peak (Exit) Capacity).

3.23. 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. An enduring storage discount value is proposed but it is recognised that EU Tariff Code provides for the charging regime to be reviewed, as a whole, at least every 5 years.

3.24. The EU Tariff Code also allows for discounts to apply to infrastructure ending the isolation of member states. In this case, an enduring discount of 95% will be applicable for qualifying quantities at the Moffat Interconnector UK exit point upon application via the Supply Point Administration process. Further detail on the eligibility of the Moffat Interconnector for this discount is outlined under **Ireland Security Discount.**

3.25. 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 values specified in the Transportation Statement. The specific capacity discount applicable to all Entry and Exit Storage Points from implementation of this Modification are provided in the relevant part of section 5 (Specific Capacity Discounts).

3.26. On 23 February 1993, the Minister for Tourism, Energy and Communication presented the Second Stage of the Gas (Amendment) Bill 1993, to enable the Moffat interconnector's construction. In the Dáil Éireann debate, the minister said in his address "The existence of the [Moffat] interconnector will see the end of Ireland's isolation as a stand-alone grid, dependent on a single supply pipeline and a single source."[11]

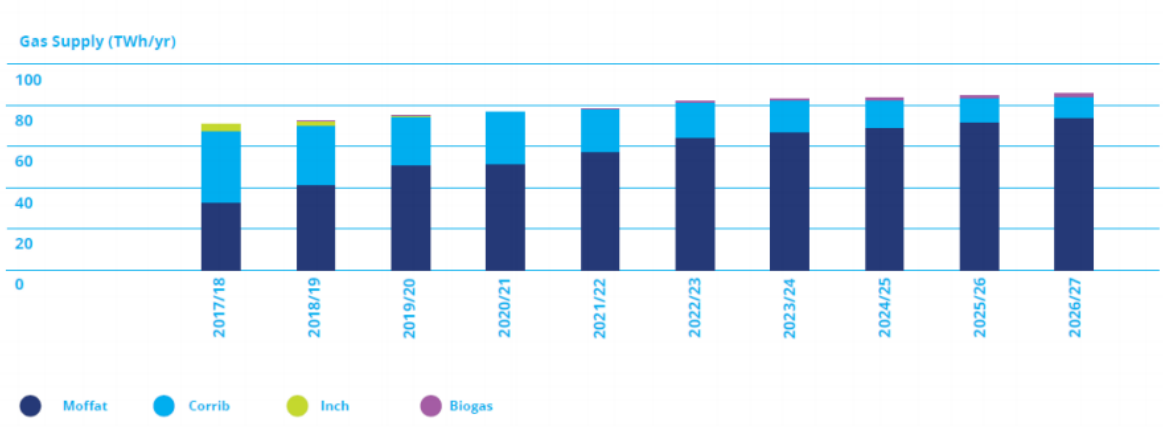
3.27. The existing status of the Moffat Interconnector as the marginal source of gas supply is highlighted by Gas Networks Ireland (GNI) in their TAR NC proposal *"Irish wholesale gas prices are set by the GB price of gas plus the cost of transporting gas from GB to Ireland via the interconnectors, as GB gas is the marginal source of gas supply to Ireland. The National Balancing Point, commonly referred to as the NBP, is the virtual trading location for GB natural gas. Therefore, the cost of gas at the NBP plus the cost of transportation to Ireland strongly influences the price at the Irish Balancing Point (IBP), i.e. the cost of wholesale gas in Ireland."*

3.28. It goes on to state; *"Ireland's dependence on imports from Great Britain (GB) is increasing once again as production declines at the Corrib gas field, and this trend will continue unless new sources of indigenous supply are brought on stream."* Therefore, identifying the Moffat Interconnector as the marginal source of gas, it is a piece of infrastructure that ends the isolation of Ireland in respect of its gas transmission system. The charts below issued in GNI's 2018 Ten Year development plan illustrated the current projection for Corrib production[12].

[11] https://www.oireachtas.ie/en/debates/debate/dail/1993-02-23/21/

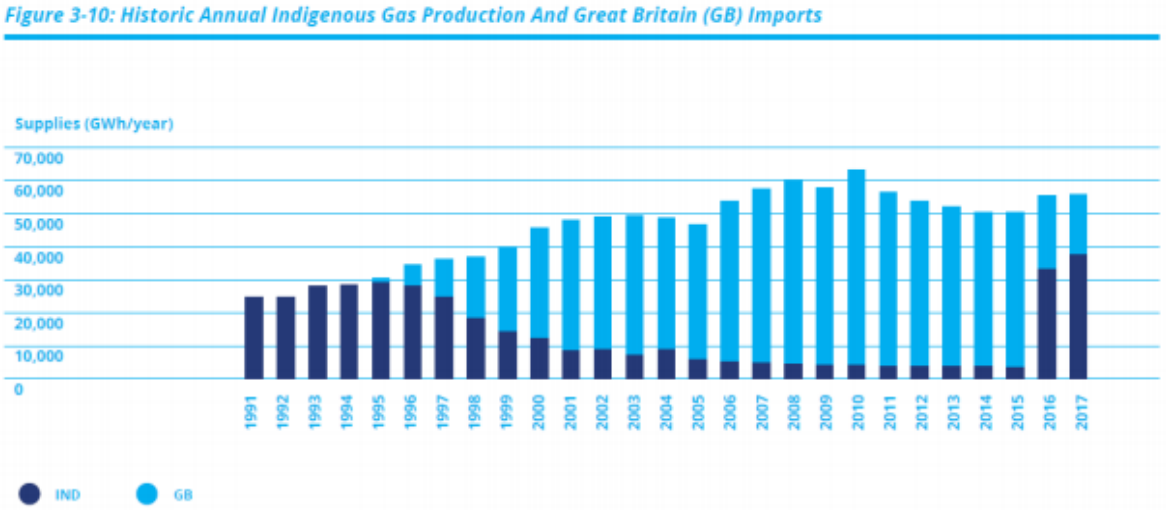
[12] https://www.cru.ie/wp-content/uploads/2018/12/CRU18269a-GNI-Network-Development-Plan-2018.pdf

Figure 5-1: Annual Gas Networks Ireland System Gas Supply Forecasts – Median Scenario



3.29. The report states "*The Gas Networks Ireland system 1-in-50 peak day gas supply profile for the median scenario is presented in Figure 5-2. The Corrib gas field would be expected to supply approximately 27.7% of ROI peak day gas demand in 2018/19 in the event of a 1-in-50 winter peak day, with Inch accounting for around 2.3%. The Moffat Entry Point would be expected to meet nearly 69.9% and 78% of ROI demand and Gas Networks Ireland system demands respectively in 2018/19, in such circumstances. Moffat is anticipated to meet 89.5% and 92.2% of ROI and Gas Networks Ireland system peak day demands respectively in 2026/27. The gas supply outlook highlights the continued critical role of the Moffat Entry Point throughout the forecast period".*

Figure 3-10: Historic Annual Indigenous Gas Production And Great Britain (GB) Imports



3.30. The removal of the current Optional Commodity Charge without a viable alternative product that supports gas transportation costs to Ireland may cause a security of supply vacuum for Ireland. This is coupled with the fact that Ireland does not benefit from the same diverse range of gas supply as GB.

3.31. The Ireland Security Discount is consistent with Article 9 as it is recognised that Ireland is an isolated market served by supplies from GB. There is no timing factor set out in Article 9 i.e. a discount is not just valid at the time isolation is ended (prior to, enabling the construction of the Moffat interconnector) but can be ongoing to ensure that Ireland continues to receive gas supplies (at reasonable prices) to reflect its dependency, particularly as it remains at risk of isolation.

3.32. The Ireland Security Discount is available for nominated supply routes from Beach Terminals as identified by National Grid. This is for Security of Supply purposes to support the economic value of North Sea indigenous production.

3.33. The potential impacts the security of supply for Ireland are also applicable to both Northern Ireland, and the Isle of Man (IoM) that have 100% gas import dependency from GB. This concern has been highlighted by Manx Utilities in their representation to the Workgroup on 5th March 2019[13]. The infrastructure map below illustrates the heavily interconnected nature of the RoI, NI and IoM with GB. The Moffat interconnector (blue line) is the main supply route from Scotland to the three regions. The South North pipeline (orange line) Is only used in a supply emergency.

3.34. It is proposed that the discount is applied as per the solution in Section 5.

Revenue Recovery

3.35. The proposal incorporates a mechanism to manage the consequence of under or over recovery of revenues from Transmission Services Capacity Charges. The approach advocated is a capacity-based charge (which for the avoidance of doubt may be positive or negative) on an enduring basis and is levied to the Fully Adjusted Capacity (at any points) apart from that classified as 'Existing Contracts' in order to give full effect to the provisions detailed in Article 35 of the EU Tariff Code.

3.36. From implementation, the charging framework for Transmission Services Revenue will become 100% capacity-based.

3.36.1. The calculation of the capacity prices will, at the time of calculation, take into account the revenue shortfall from any discounts referred to in paragraphs 3.17 to 3.20 and 3.25 of Section 3) in order to adjust the reserve prices such that the amount forecast to be under collected as a result of these discounts is reduced.

[13] https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/ggf/book/2019-03/Representation%20by%20email%20%20-%20Manx%20Utilities.pdf

3.36.2. The approach in 3.22 means that less revenue will be required to be collected from the Transmission Services Revenue Recovery charges than if it were not carried out.

Wheeling

3.37. The proposal will enable National Grid to continue to offer transportation services that result in the efficient use of its gas network. The proposed method is a well-established concept within European gas regulation and will be generated according to the formula outlined in Section 5 below. The Proposer acknowledges that building physical infrastructure to bypass the NTS is a potential consequence of not having a genuine 'short haul' product available but other potential consequences exist such as the potential withdrawal of GB Shippers from supply contracts, leading to a loss of market participants and subsequently liquidity in the GB market. Encouraging efficient use of the network facilitates the delivery of gas to the GB market. It also supports the efficient flow of gas across interconnection points. The Wheeling product is beneficial to GB customers as Security of Supply is facilitated.

Existing Contracts

3.38. Provisions will apply for Entry Capacity allocated up to 06 April 2017.

3.38.1. 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 – 06 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*".

3.38.2. 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.

3.39. EU Tariff Code Article 17 requires that "…the level of transmission tariffs shall ensure that the transmission services revenue is recovered by the transmission system operator in a timely manner…" and that "…the under- or over-recovery of the transmission services revenue shall be minimised…".

3.40. Accordingly, to ensure that the References Prices determined by the proposed CWD RPM provide a level of revenue recovery as close to target as possible (thereby minimising amounts needing to be collected via revenue recovery mechanisms), the capacity already booked and revenue levels already 'set' in respect of Existing Contracts are netted off the aggregate capacity and aggregate revenue figures entered into the CWD RPM. Consistent with this aspiration, an additional scaling factor (as described in paragraph 3.17) is applied to Reference Prices to account for the anticipated under collection driven by the application of any discounts (e.g. interruptible and specific capacity discounts).

3.41. The alternative approach of inclusion of capacity already booked and revenue levels already 'set' via Existing Contracts in the CWD RPM effectively 'double counts' any capacity and revenue for the relevant Entry Points and would have the consequence of setting Reference Prices at Entry Points too low to recover the target revenue. Inclusion of these elements in the CWD RPM would therefore be inconsistent, and arguably non-compliant, with Article 17.

3.42. Recognising that Article 6(3) of the EU Tariff Code requires that "…the same reference price methodology shall be applied to all entry and exit points…" it is nevertheless the case in GB that

Existing Contracts only occur at Entry Points. Should Existing Contracts have additionally existed at Exit Points it would have been necessary for the equivalent netting off to take place in respect of Exit Point to ensure compliance. Given the GB position, application of this at Entry Points only is not in conflict with Article 6(3).

Effective Date for the charges driven by this proposal

The effective date of this proposal is to take effect from 1st October in a specified year with charges published 4 months prior to this. This is to avoid distortion of the gas market and to ensure compliance with TAR Article 6 that requires the same charging RPM to be applied to all points at the same time and to comply with CAM Article 9.

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.

Uniform Network Code (UNC) Section Y:

https://www.gasgovernance.co.uk/TPD

UNC European Interconnection Document (EID):

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

EU Tariff Code:

http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.072.01.0029.01.ENG&toc=OJ:L:2017:072:FULL

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:

https://www.gasgovernance.co.uk/TPD

NTS Transportation Statements:

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

Customer and Stakeholder Objectives:

http://www.gasgovernance.co.uk/ntscmf/060916

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

Table 1 gives a definition of terms used in this Modification.

Table 1: Definitions used in the Modification

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 06 April 2017 (Entry into Force of EU Tariff Code)
Forecasted Contracted Capacity (FCC)	The capacity input to the RPM that will be used in the Transmission Services capacity charges calculation that will be determined via a CWD methodology. An FCC value is required for every Entry and Exit point.
Ireland Security Discount	A 95% discount levied on Moffat IP exit tariff for nominated physical supply routes from UK Beach Terminals (as categorised by National Grid), to the Moffat Interconnector via the supply point administration process in UNC TPD Section G/UNC Transition Document.
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.
Modification Direction Date	The day on which the Authority gave its direction to make the Relevant Modification;
Modification Effective Date (Effective Date)	No earlier than 1 October 2019 (and subsequent to the Modification Direction Date) as the Authority may direct in its direction to make the Relevant Modification, or the subsequent 1st October date if they Modification Direction Date is later than 4 months prior to 1st October;
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 be 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 (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.
Transportation Statement	The Transportation Statement containing the Gas Transmission Transportation Charges.
Wheeling	A Transmission Services charge allowing the transportation of gas from one entry point to an exit point across 0 km distance as defined in Annex A of the FCC Methodology statement. The respective entry and exit points that qualify for wheeling will be referred to as the Specified Entry Point and the Specified Exit point in this context. The Wheeling Charge will be updated as outlined in the NTS Optional Wheeling Charge methodology.

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 TPD Sections B (System Use and Capacity), E (Daily Quantities, Imbalances and Reconciliation), G (Supply Points), the Transition Document 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 charges (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 Transmission Services Entry Charge Rebate; and
- Wheeling Capacity Charge

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 section 3)

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

One RPM will be used for the calculation of Reference 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, or negative 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 (in terms of Weighted Average Distance as opposed to geographically) 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 (in terms of Weighted Average Distance as opposed to geographically) relevant Entry Point or (respectively) Exit Point adjusted in line with pro-rata relationship between the two Weighted Average Distances.

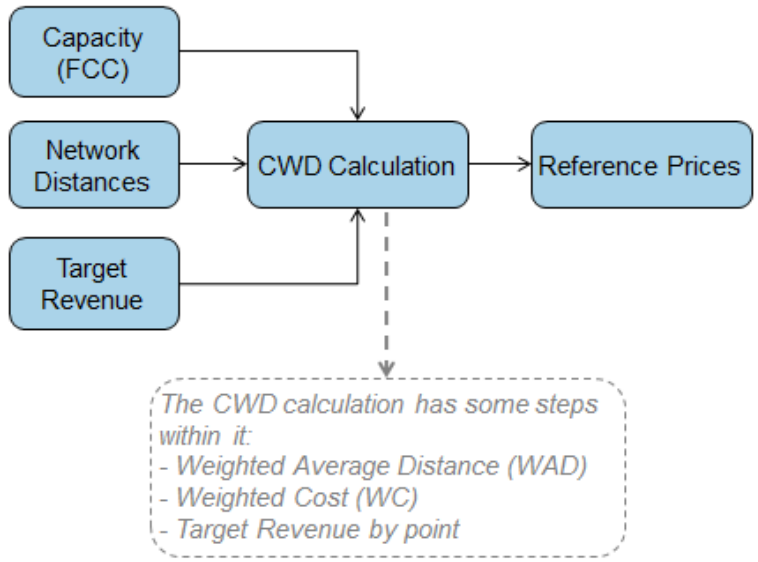
Calculations within the CWD Model

Proposed CWD Model for calculating Entry and Exit Capacity Base Reference Prices:

The proposed CWD approach fundamentally requires three main inputs (see Figure 1):

- Target Entry or Exit Transmission Services Revenue - Revenue which is Allowed Revenue net of known Existing Contracts (EC) 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 booked to recover the target Entry or Exit Transmission Services revenue. It should be noted that whilst TAR NC permits Existing Contracts at both Entry and Exit, there are no eligible Exit Existing Contracts.

Figure 1: Proposed CWD Model for calculation of Entry and Exit Capacity Base Reference Prices



Key steps in the CWD calculations, see Table 2.

Table 2: Key steps in the CWD calculations

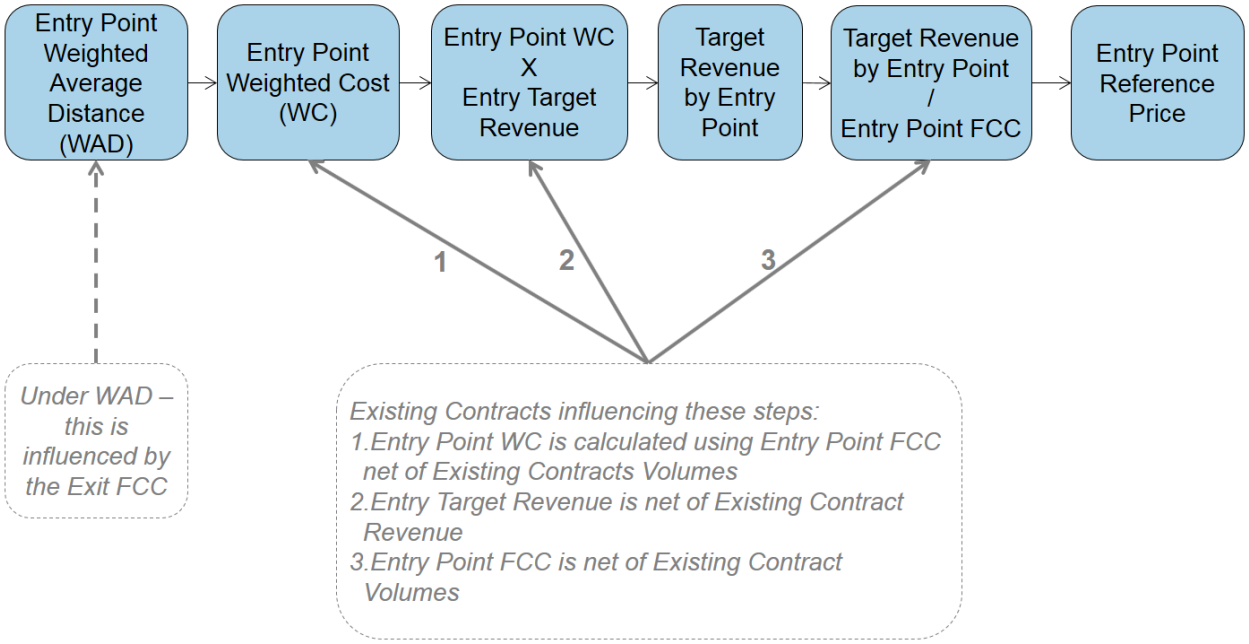
	Entry Capacity Calculation	Exit Capacity Calculation
Weighted Average Distance (WAD)	(Sumproduct Exit Point FCC x Distance to Entry Point) / Sum Exit Point FCC	(Sumproduct Entry Point FCC[#] x Distance to Exit Point) / Sum Entry Point FCC[#]
Weighted Cost (WC)	Entry Point FCC* x WAD / (Sumproduct Entry Point FCC* x WAD)	Exit 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)

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

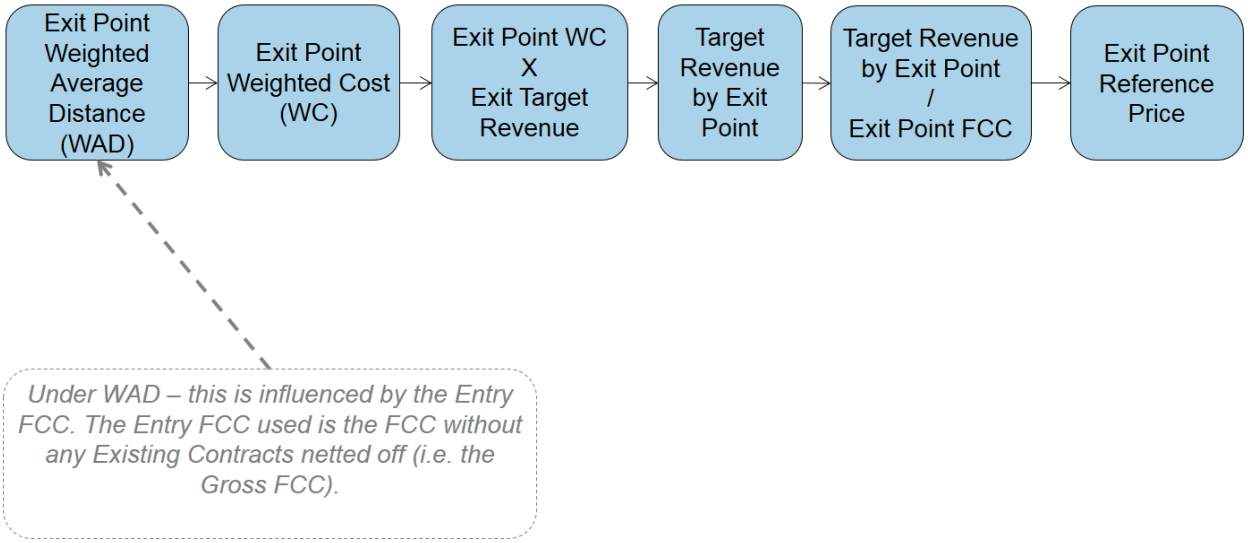
Entry Point Reference Prices are calculated in the following steps in the CWD model, see figure 2

Figure 2: Entry Point Reference Prices calculation model



Exit Point Reference Prices are calculated in the following steps in the CWD model, see Figure 3:

Figure 3: Exit Point Reference Prices calculation model



There are no eligible Exit Existing Contracts and therefore the impact of including them is zero. The same approach or methodology is applied to Entry and Exit. Were there to be any Exit Existing Contracts they would be incorporated in the same manner as Entry. As there are none, the approach outlined is the same effect as if they are zero in any algebra.

Forecasted Contracted Capacity (FCC)

It is proposed that the FCC for an Entry Point or an Exit Point will be equal to a forecasted value determined by National Grid, in line with a new methodology statement (the 'FCC Methodology'). It is proposed that the FCC Methodology in Appendix 2 of this Proposal applies from the Effective Date for application within the relevant Gas Year(s). For the avoidance of doubt, it is not proposed that the FCC Methodology will form part of the UNC.

It is proposed that ahead of each Gas Year National Grid will determine the FCC value for each Entry Point and Exit Point and will be communicated to industry as part of the publication of charges.

It is proposed that the methodology can only be updated every four years, in which National Grid will run a consultation with stakeholders to review the FCC Methodology. Following the consultation, if the FCC Methodology is revised, National Grid will notify industry of any revisions as part of the publication of charges. Any such consultation would be concluded in advance of setting the tariffs for the forthcoming tariff (gas) year.

As a mitigating measure, National Grid may revise the methodology one year following implementation ('IMP+1') and consult on this as per the process above. If National Grid chooses to do so, the next revision cannot be made until IMP+5, then IMP+ 9 etc, however, if National Grid do not revise the methodology one year following implementation, no revision can be made until IMP+4 then IMP+8 subsequently.

It is proposed that any such revision will take effect from the date specified unless Ofgem (upon application by any Shipper or Distribution Network Operator within one month of the notice) directs that the change is not made as per its powers under Standard Special Condition A11(18) of National Grid's Licence. As a transitionary arrangement, National Grid has the ability to review or update the methodology one year after implementation if it deems it necessary. The consultation process outlined above will also apply for a transitional FCC review.

Reserve Prices produced from Reference Prices

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, the price payable for capacity procured in 2019 for a period in October 2025 will be the Reserve Price determined for gas year 2025/26 plus, where applicable, any premium payable. This premium will be equal to either:

- The difference between the allocated price and Reserve Price in the relevant auction when the capacity was initially contracted for ('*auction premium*'); or
- The amount specified in respect of entry capacity allocated via a PARCA Application as described in TPD B1.14 and the Entry Capacity Release Methodology Statement ('*PARCA premium*').

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 for the period commencing 01 October 2019, or from any other date commencing 01 October that is determined following a decision to implement this Modification, the Multiplier applied to the Reference Prices for all Entry Point and Exit Points in order to determine the Reserve Price will be 1 (one).

Interruptible (Entry) and Off-peak (Exit) Capacity

It is proposed that the Reserve Price for Interruptible Capacity at an Entry Point and Off-peak Capacity at 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 the discount applied in respect of Interruptible and Off-peak Capacity:

- At Entry Points is 10%; and
- At Exit Points is 10%.

Specific Capacity Discounts

It is proposed that Specific Capacity Discounts will be applied to the Reserve Prices in respect of Firm and Interruptible/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 50%.

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 or implementation date of this Modification should it be later, the applicable Specific Capacity Discount for a given gas year will be equal to 0%.

It is proposed that in respect of **Infrastructure Ending Isolation of member state** the applicable Specific Capacity Discount the 'Ireland Security Discount' levied on the Moffat IP exit tariff will be equal to 95% and will only be applicable for physical UK beach terminal flows and subsequent linked physical Moffat interconnection point exit flows administered through the Supply Administration Point process as set out in UNC TPD Section G and the UNC Transition Document at the beginning of each Gas Year.

Ireland Security Discount

The Ireland Security Discount is a conditional capacity product that is applicable for nominated physical UK entry beach terminal supply routes to Moffat IP exit.

At the commencement of the run-in period (at least 150 Days before the Modification Effective Date, or if later within 10 Business Days after the Modification Direction Date, National Grid will provide a written statement to each shipper in the market of the Ireland Security Discount that will apply. Shippers must notify the CDSP ('Xoserve') of any new physical supply arrangements (effective from the implementation date) to the Moffat IP via the existing supply point administration process outlined in UNC TDP Section G. The Eligible Exit Point will be the Moffat IP, the Specified Entry Point shall be a Beach Terminal as specified by National Grid in its Transportation Statement.

For shippers with enduring Optional Commodity Charge routes where the existing Specified Entry Point is a Beach Terminal and the Eligible Exit Point is the Moffat IP, the CDSP will notify these Shippers of the Ireland Security Discount that will replace the Optional Commodity Charge that will cease on the implementation date and the terms of the offers will be deemed to be amended accordingly. This process will be in line with the timings as set out in UNC TPD Section G and the UNC Transition Document where applicable.

The Ireland Security Discount will apply to an Applicable Quantity (QI) calculated on each gas day:

$$QI = MIN \{Flowen^i, CAPex^i, FLOWex^i\} \text{ where}$$

$Flowen^i$ = *User's gas flow entry allocation on the day at the nominated Beach Terminal*

$CAPex^i$ = *User's net firm exit capacity entitlement on the day at the Moffat exit point,and*

$FLOWex^i$ = *User's gas flow exit allocation on the day at the Moffat exit point.*

Normal Transmission Services charges will apply, as appropriate, to those capacities or gas flows not covered by the Applicable Quantity (Q^i).

Additional Calculation Step under CWD for Reference / Reserve Prices

It is proposed that the following step is applicable for Capacity Reference Prices on an enduring basis. Once the Reserve Prices have been calculated taking into account all the required Multipliers, Specific Capacity Discounts and Interruptible / Off-peak adjustment there will be an under recovery driven by the levels of discounts or adjustments (e.g. Interruptible / Off-peak adjustment and Specific Capacity Discounts). This anticipated under recovery will result in the need for an adjustment to be applied to the CWD calculation in order to recalculate Reference Prices, and therefore Reserve Prices, such that the under-recovery is estimated to be zero or close to zero. This will be applied to the Entry and Exit Capacity calculations to recalculate the Entry and Exit Capacity Reference Prices and Reserve Prices for all Entry and Exit points and in doing so will minimise the size of the Transmission Services Entry and Exit Revenue Recovery charges.

This step within the calculation is incorporated within the RPM. This is required in order to manage the tariffs such that they are being set to recover the target revenue. Without this step tariffs, would be set such that they would under-recover or not be set in a manner to aim to recover the target revenue. This impact of this step is the same for all points within the RPM as the revenue additive is input as a feature of the RPM calculation in the CWD approach. This limits any potential distortions as proportionally all points pick up an uplift within the RPM proportionate the CWD reference price they receive.

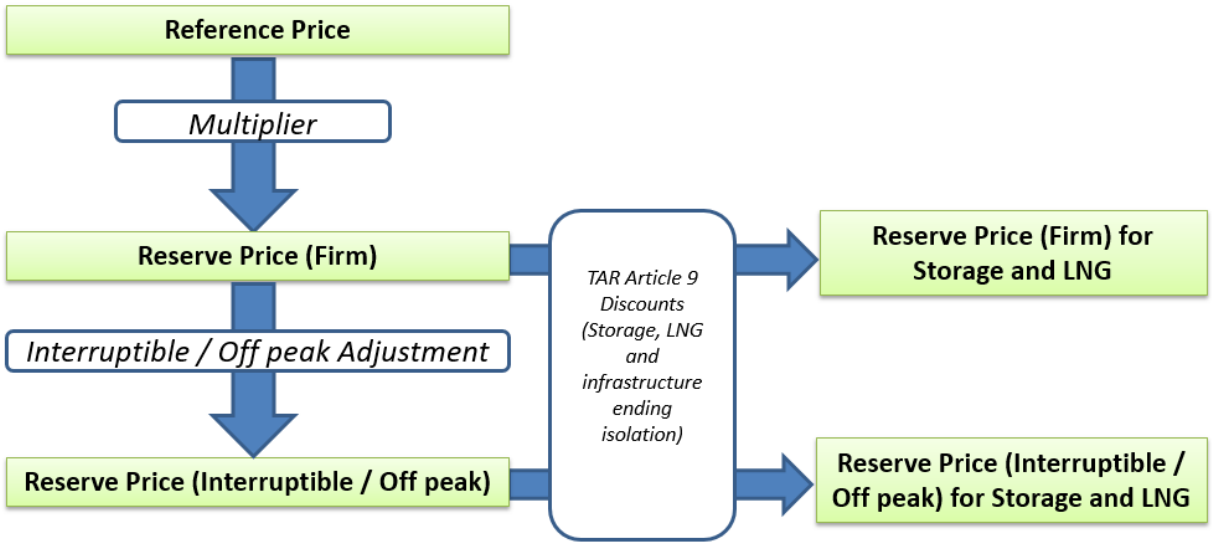
Minimum Reserve Price

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

Summary of Reserve Price Derivation

The following diagram (see Figure 4) summarises the proposed approach to the derivation of Reserve Prices (from the applicable Reference Price) for both Firm and Interruptible / Off-peak Capacity products (including Capacity at Storage and LNG sites).

Figure 4: Reserve Price derivation



Capacity Step Prices

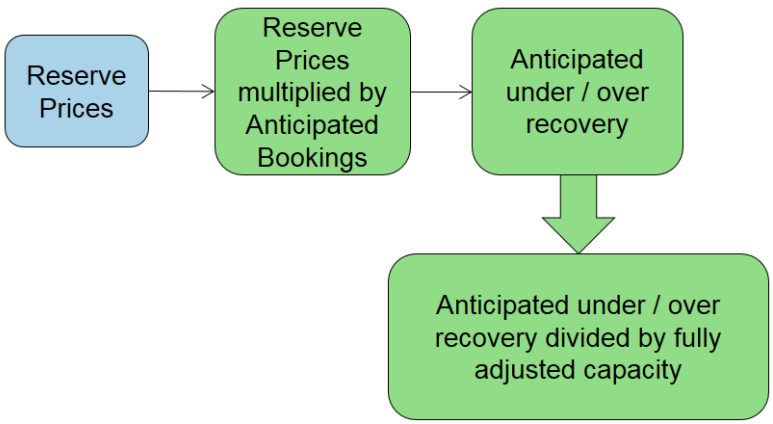
For the purposes of capacity step prices used in the QSEC Auction, these will be an additional 5% of the applicable Reserve Price or 0.0001 p/kWh/Day, whichever is the greatest, per step.

Transmission Services Revenue Recovery Charges (see paragraph 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 (see Figure 5) for Entry and Exit in the same way:

Figure 5: Transmission Services Revenue Recovery Mechanism



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 the Transmission Services Revenue Recovery charge rate may be adjusted at any point within the gas year.

For the avoidance of doubt, such change would be subject to the existing notice requirements for variation of Transportation Charge rates.

It is proposed that the Transmission Services revenue recovery mechanism is capacity based and applied as additional capacity charges to all fully adjusted capacity except Existing Contracts. The Transmission Services Entry and Exit revenue recovery charges for this period will be produced in p/kWh/d. For the avoidance of doubt, any Entry Capacity (except Existing Contracts) or Exit Capacity booked for the applicable year would be subject to Revenue Recovery charges.

It is proposed that in respect of adjustments to available Entry Capacity, where the adjustment is executed:

- Up to and including 05 April 2017, the Capacity will be treated as Entry Capacity procured via Existing Contracts; or
- Subsequent to 05 April 2017, the Capacity will not be treated as Entry Capacity procured via Existing Contracts.

NTS Optional Commodity rate

It is proposed that the existing NTS Optional Commodity Rate (OCR) is removed.

Transition

The existing OCR will no longer be available from the Modification Effective date

It is proposed that National Grid will use reasonable endeavours to provide, as much notice as is practicable prior to the date of implementation after a decision has been made, notification to each User at a Point with an existing OCR (determined as at four months prior to the date of implementation) of the cessation of the OCR with effect from the date of implementation.

For the avoidance of doubt, all charges (where detailed as applicable in the proposed charging methodology) will be payable from the date of implementation.

Wheeling

The Wheeling charge is a conditional capacity charge requiring the elected entry and exit point to be situated in the same location. For example, Bacton UKCS Entry and Bacton IP Exit are zero kilometres in distance and shown in Annex A of the FFC Methodology therefore this route qualifies for the service.

The Wheeling charge is applicable based on the following conditions

1) That there is 0km distance as outlined in the Annex A of the FFC Methodology Statement
2) It must be nominated via the supply point administration process as set out below

The new method will provide one capacity charge for qualifying entry and exit combinations. Non-Transmission Services commodity charges will not be payable on qualifying gas entry or exit flows, the Applicable Quantity. Justification for the exclusion of Non-Transmission charge can be found in the note prepared by WWA as part of the UNC 0621 development process[14]. Transmission Services Revenue Recovery charges will not be payable.

[14] https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/ggf/book/2018-

Implementation

At the commencement of the run-in period (at least than 150 Days before the Modification Effective Date, or if later within 10 Business Days after the Modification Direction Date), National Grid will provide a written statement to each shipper in the market detailing the Wheeling charges that will apply at Eligible Entry and Exit points as defined in Section 4: definitions.

The CDSP will notify shippers with enduring supply point offers for the NTS Optional Commodity Charge for Eligible Entry points to Eligible Exit Points that will qualify for the Wheeling Capacity Charges. These Shippers will be notified of the Wheeling Charge that will apply in place of the NTS Optional Commodity Charge from the commencement date and that the terms of the offers will be deemed to be amended accordingly from that date.

Shippers without enduring supply points offers for the NTS Optional Commodity Charge that would be eligible for the Wheeling Capacity Charge, will be required to use the supply point administration process set out in UNC TPD Section G and the UNC Transition Document to request Wheeling arrangements.

Methodology

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. Although the Wheeling charge is applicable for routes across zero distance, these fundamental assumptions remain valid, therefore a cost element that still including a distance factor set to zero is retained.

The formula is based on the principles set out in National Grid's GCD11 Report and updates the existing formula Optional Commodity Charge based on RPI[15]. The formula has been updated to reflect more recent RPI levels this will be at the time of implementation. The Wheeling Charge formula will be updated as outlined under the NTS Optional Wheeling Charge Methodology.

Indexation approach

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:

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

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

As of April 2019, the applicable formula is described below. The parameters will be updated annually by National Grid.

The **proposed** formula for the Wheeling Charge as follows for the applicable quantity (Q):

Wheeling rate (Wr)p/kWh: ***[2143.08x M ^-0.84 x D + 626.41 x M ^-0.65]***

Where:
M = Maximum NTS Exit Point Offtake Rate (MNEPOR) at the site, converted into kWh/day.

02/SO%20derivationv3%20NW.pdf

[15] National Grid GCD11, June 2015: https://www.nationalgrid.com/uk/gas/charging-and-methodologies/gas-charging-discussion-gcd-papers

^ means 'to the power of'.

Wheeling charge (Wc) p/kWh/d (Conversion to capacity based charge):

$$Wc = \frac{(Wr\ x\ M)}{\mathrm{FCC}}$$

Application

The Wheeling charges will apply to an Applicable Quantity (Q) calculated on each gas day:

Q = MIN {CAPen, CAPex, FLOWen, FLOWex} where

CAPen = User's net firm entry capacity entitlement on the day at the applicable ASEP,

CAPex = User's net firm exit capacity entitlement on the day at the applicable exit point,

FLOWen = User's gas flow entry allocation on the day at the applicable ASEP, and

FLOWex = User's gas flow exit allocation on the day at the applicable exit point.

Non-Transmission Services charges and Transmission Services Revenue Recovery (TO) charges will not be levied on the Applicable Quantity (Q).

Normal Transmission Services charges or Non-Transmission Services charges will apply, as appropriate, to those capacities or gas flows not covered by the Applicable Quantity (Q):

The applicable parameters will be effective from the 01 October implementation date of the Modification.

WAPen = the shipper's weighted average price of relevant firm entry capacity entitlements held on the day;

WAPex = the shipper's weighted average price of relevant firm exit capacity entitlements held on the day;

Where CAPen > Q, WAPen will apply to (CAPen – Q) units of the User's entry capacity entitlement.

Where CAPex > Q, WAPex will apply to (CAPex – Q) units of the User's exit capacity entitlement.

Where FLOWen > Q, Non-Transmission Services entry charges will apply to (FLOWen – Q) units of the User's entry allocation.

Where FLOWex > Q, Non-Transmission Services exit charges will apply to (FLOWex – Q) units of the User's exit allocation.

NTS Transmission Services Entry Charge Rebate

The charge mechanism reduces any Transmission Services entry over-recovery. The process may be triggered at the end of the formula year. It is proposed that this will be applied as a Transmission Services entry capacity credit.

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 the St. Fergus Compressor Charges and General Non-Transmission Services Entry and Exit Charge rates may be adjusted at any point within the gas year.

It is proposed that this is applied to all flows excluding 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.

Effective Date for the charges driven by this proposal

The effective date will be on the 1st of October with charges published 4 months before.

It may be necessary to take into consideration actual and anticipated revenues to be collected up the effective date to determine the target revenue to be applied for the remainder of the regulatory year.

The charges would change the payable prices for the effective date, except for any charges that would be explicitly exempt in any such decision, or any charges for which payable prices are not permissible to be updated under the EU Tariff Code.

Reconciliations are undertaken under the current regime, such as reconciling commodity charges, updating flow values and incorporating the OCC and reconciliation of commodity charges to account for eligible flows. These will continue to ensure that charges for the applicable period up to the effective date are accurately charged

Transportation Charges: Information Publication

Only a 1st October Effective date will apply. This is to ensure compliance with TAR Article 6.3 to avoid different charging methodologies for IPs and non-IPs and to comply with CAM Code Article 9. It is proposed that information in respect of Transportation Charges will be published in accordance with the table below.

It is proposed that information in respect of Transportation Charges will be published in accordance with table 3 below.

Table 3: Publication dates for Transportation Charges. **For Charges to be effective from 1st October, charges must be published 4 months in advance i.e. 1st June to comply with CAM code and Article 6 in TAR code. (Please change "Issued by" 01 August to 01 June**

	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
	Specific Capacity Discounts (Moffat IP)	Transportation Statement	01 August
	Revenue Recovery Charge (Entry)	Transportation Statement	01 August
	Revenue Recovery Charge (Exit)	Transportation Statement	01 August
	Wheeling Capacity Charge	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

*Issued by means the date by which the listed information will be consolidated and published in the relevant publication. The information in this table will be published and made available in steps via the relevant notice and supporting material which may be before the date listed. The publication dates may also be changed depending on the implementation of this Modification.

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 Proposal.

Central Systems Impacts

There will be impacts on Gemini and UK Link invoicing systems. These impacts are being assessed. The CDSP, Xoserve, has been consulted on all stages of development of this project and National Grid will continue to ensure this is the case.

7 Relevant Objectives

Table 4: Impact of the Modification on the 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 pipeline system

The whole charging package contained in this Modification has been designed to encourage fair and efficient access to the pipeline system. The expected more stable and predictable charges compared with what is generated from the current methodology should encourage more stable and predictable use of the system by shippers - something that should in turn help National Grid generate accurate capacity usage forecasts for setting charges in future.

This Modification 0678I recognises that the GB charging framework requires a Wheeling product that recognises the transportation of gas in the same location (or deemed the same), as is the case in neighbouring member states such as the Netherlands and Belgium where short distance discounts can reach up to 100% for routes within one location. The Modification is therefore designed to promote efficiency and economy in the use of the NTS pipeline system by reducing the level of discounts to a more appropriate level, whilst addressing the underlying structural design of the 'shorthaul' methodology and thus providing a robust, enduring basis for dis-incentivising inefficient NTS bypass.

c) Efficient discharge of the licensee's obligations.

The Modification will ensure that necessary enhancements and changes are made to the charging methodology holistically, enabling Users to comprehend the implications for the whole suite of gas transmission charging. This is much more preferred and efficient than had the changes been made in a fragmented or incomplete manner.

d) Securing of effective competition between relevant shippers;

The Modification is expected to result in more stable and predictable capacity charges which will be conducive to enhancing competition in gas shipping and gas supply. This is further helped by not applying capacity-based Transmission Services revenue recovery charges to Existing capacity, providing shippers with confidence that once a contract for capacity has been struck it will, as far as legal requirements permit, be honoured.

Wheeling will allow shippers to compete more effectively at proximate offtakes, including power stations, without having to build their own (inefficient) by-pass pipelines. It will also facilitate gas flows across Interconnection Points, encourage gas trading and help to attract gas to the GB market.

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 and EID B (where applicable) support the implementation of the new charging methodology and arrangements including those elements required to comply with the EU Tariff Code. This Modification has taken into consideration the views expressed by Ofgem in their Modification 0621 Decision Letter outlining three core areas of non-compliance and ACER analysis that has been

published to date. The Wheeling charge is consistent with ACER's analysis on Belgium where the similar 'short haul' tariffs that take into account conditions as per Article 4.2 in TAR NC are considered[16].

This proposal is also compliant with Article 3, paragraph 2 of European Commission regulation 1775/2005 which states: "Tariffs for network access shall not restrict market liquidity nor distort trade across borders of different transmission systems. Where differences in tariff structures or balancing mechanisms would hamper trade across transmission systems… transmission system operators shall, in close cooperation with the relevant national authorities, actively pursue convergence of tariff structures and charging".

The inclusion of a discount at the Moffat IP exit point reduces trade distortions that could arise from the implementation of Modification 0678 without a mechanism to resolve the increased cost to customers in Northern Ireland, Ireland and the Isle of Man.

The Proposer has been advised by the Head of Legal at Gazprom Marketing & Trading that this proposal is fully consistent with the principles and the detail of the EU Tariff Code.

Table 5: Impact of the Modification on the Relevant Charging Methodology Objectives

Impact of the Modification on the Relevant Charging Methodology Objectives:	
Relevant Objective	Identified impact
a) Save in so far as paragraphs (aa) or (d) apply, that compliance with the charging methodology results in charges which reflect the costs incurred by the licensee in its transportation business;	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

[16] Paragraph 36, https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/Agency%20report%20-%20analysis%20of%20the%20consultation%20document%20for%20Belgium.pdf

(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;

The failures of the current Long Rung Marginal Cost reference price methodology have been addressed by Ofgem and Modification 0621 discussions. Postage Stamp methodology has its appeal – it's simple and generally equalises entry and exit charges for users. However, a Postage Stamp method is not in any way cost-reflective: capital costs employed to support the current NTS infrastructure (e.g. for maintenance and replacement) or for maintaining gas pressures and delivering gas throughout the gas network (e.g. compressors) intuitively have a distance-related component to them. As shown below in Figure 6 the topology of the GB network is complex and expansive, initially designed to transport volumes from the north east of the country to the south, with additional extensive supply routes travelling from the west.

Source: National Grid prevailing view

Figure 6: GB network topology

It is therefore not cost reflective to use a postage stamp methodology as this would lead to undue cross subsidisation. The CWD method is a more considered and cost-reflective approach.

The inclusion of the Wheeling tariff is critical in enhancing the cost-reflectivity of the methodology, particularly for combinations of entry and exit points that are in close proximity, e.g. high entry and exit charges when the exit point is in close proximity to the entry point, such as St Fergus and Peterhead power

station or Bacton UKCS and the Interconnector UK exit point. It is, therefore, essential to incorporate a consistent and enduring 'shorthaul' solution to resolve such anomalies.

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; and

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

The proposed changes to the balance of reserve prices among capacity products of different durations will ensure that a much fairer price is paid by shippers generally compared with the current situation where short-term entry and exit capacity can be readily purchased free of charge. This will help to significantly reduce the situation where parties that choose, or for business reasons are required, to purchase capacity on a long-term basis are disadvantaged and who, because of revenue under-recovery provisions such as has been witnessed with TO commodity charges, end up paying well in excess of their fair share of transmission costs. This rebalancing of charges and fairer allocation of costs is conducive to better promoting competition between gas suppliers and between gas shippers.

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

From a legal and regulatory perspective, the new methodology will ensure that the requirements of EU network codes can be fully adhered to, thus ensuring that the required transportation developments, especially, at Interconnection Points, are realised. From an operational perspective, the transportation business will need to change to meet changing demand patterns and changing sources of gas supply, presenting it with a challenge for the long-term transportation of gas to consumers and with a need to provide more flexibility to meet more unpredictable within-day changes to supply and demand patterns. The new charging approach under this Modification provides a significantly more balanced suite of capacity purchase options that will lead to more predictable costs for shippers and more appropriate payments in respect of the use of the day to day and within-day use of the system.

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

The expected greater predictability and stability of charges will help gas shippers to better plan their future deliveries of gas to the market, will lead to less uncertainty for new entrants and generally provide a better basis for promoting competition in gas shipping and gas supply.

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.

EU Tariff Code compliance is taken into account in this Modification proposal. Accordingly, implementation of this Proposal would ensure that the GB arrangements are compliant with the EU Tariff Code. The decision to reject UNC0621 and its Alternatives highlighted three areas of compliance that needed to be

addressed (Interim Contracts, Transition Period and commodity-based 'Short-haul'). This proposal addresses these by:

- Not proposing the creation of Interim Contracts as defined in the 0621 proposals;
- Not having a transition period for the introduction of the methodology changes; and
- Creating a compliant shorthaul service that encourages efficient use of the network that takes into account the conditions of the capacity product, as required under Article 4.2 and demonstrated in other EU Member States.

This Proposal additionally allows a discounted capacity charge for physical flows to Moffat Interconnector as this interconnector ends the isolation of Ireland, Northern Ireland and the Isle of Man.

8 Implementation

. Implementation of this proposal should take effect from 01 October of a gas year.

A 01 October start date for new charges to take effect and sufficient notice of new charges is necessary to enable shippers and traders to efficiently plan and establish contractual arrangements with their counterparties without undue regulatory risk. With this in mind this proposal minimises disruption to commercial activities across the gas and power generation value chain. Consequently, this will impact power prices and domestic customers.

The Proposer acknowledges that a 01 October 2019 charge effective date will be extremely difficult to achieve given the additional governance tasks likely to be undertaken by Ofgem following submission of the Final Workgroup Report, i.e. a possible Regulatory Impact Assessment and the consultation required by Article 26 of the EU Tariff code.

Commentary on Ofgem directed timetable for Workgroup 0678

For the avoidance of doubt, the Proposer is concerned with the current workstream and recommends that the Authority exercises the powers available under the Electricity and Gas (Powers to make subordinate legislation) (Amendment) (EU Exit) Regulations 2018, to amend gas network code where required as stipulated under Article 7 of this SI. This provision specifically states the *"Regulations under this Article must be consistent with the objectives of contributing to non-discrimination, effective competition and the efficient functioning of the market."* This could be achievement by amending UK's application of Article 38.3, Entry into force, to allow for a later date.

9 Legal Text

Text Commentary

To be provided later

Text

To be provided later

10 Recommendations

Proposer's Recommendation

The Proposer recommends that this Modification should be treated as an Alternative to Modification 0678 and therefore, it should proceed as such under the same timetable as that agreed with the Authority.

Commentary on Ofgem directed timetable for Workgroup 0678

For the avoidance of doubt, the Proposer is concerned with the current workstream and recommends that the Authority exercises the powers available under the Electricity and Gas (Powers to make subordinate legislation) (Amendment) (EU Exit) Regulations 2018, to amend gas network code where required as stipulated under Article 7 of this SI. This provision specifically states the *"Regulations under this Article must be consistent with the objectives of contributing to non-discrimination, effective competition and the efficient functioning of the market."* This could be achievement by amending UK's application of Article 38.3, Entry into force, to allow for a later date.

Close consideration of our requirements under the Gas (Security of Supply and Network Codes) (Amendment) (EU Exit) Regulations 2019 that will apply in a 'No deal' EU Exit is also required should the UK leave the European Union on 29 March 2019.

11 Appendix 1: Differences between Modification 0621 and Modification 0678I

Note that for ease of reference, the comparison table, displaying the differences between Modification Proposal 0621 (which was rejected for implementation by Ofgem) and this Modification Proposal (0678I) and all other Alternatives, including Modification 0678 is published on the Joint Office website.

12 Appendix 2: FCC methodology

The FCC Methodology as referred to in Section 5 is published on the Joint Office website.
FCC Methodology v1.0 15 March 2019 https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fspublic/ggf/book/2019-03/Forecasted%20Contracted%20Capacity%20v1.0.pdf

13 Appendix 3: Ireland Security Discount distributional impact

Impact of Ireland Security Discount on NTS Exit revenue recovery

The table below illustrates the minimal distributional impacts of the Ireland Security Discount on NTS Exit prices.

All the assumptions are based on the Sensitivity Tool 0678V3.1 CWD, dated 20 March 2019.

User inputs:
Gas Year 2019-20
Storage discount: 50%
Excluding existing contracts: Yes
Assumes all flows to Moffat will qualify for Ireland Security Discount (conservative basis)

Impact of Ireland Security Discount on NTS Exit prices 2019/20

	FCC	Moffat IP Exit	Revenue recovered yearly	Total revenue recovery	Share of revenue recovery
	KWh/d	p/KWh	(£)	(£)	
0678 Scenario	212920231	0.01714	4,902,120	337,823,191	1.45%
0678I Scenario	212920231	0.00086	666,042	337,823,191	0.20%
Additional cost to exit points of Ireland Security discount (p/KWh)			**0.000695**		

The table shows that the estimated unit increase costs at exit points is minimal, therefore an Ireland Security Discount of 95% does not lead to distortion in GB NTS capacity prices and will have very little impact on GB customers.

Based on the assumptions above and a series of confidential scenarios tested by the Proposer, the potential impact of implementing 0678 on the Republic of Ireland, Northern Ireland and Isle of Man gas markets is between ~£15m to ~£30m, however this does not consider the impacts on the Integrated Single Energy Market. Generators will need to consider the additional costs of procuring gas for CCGTs and hedge against increasing costs due further uncertainty in the future transmission charging arrangements. This premium is likely to be passed on to end-consumers.

14 Appendix 4: Ireland Market Analysis

The following extracts provide an overview of the Irish gas market and its dependency of the Moffat interconnector as the marginal source of gas.

https://www.cru.ie/wp-content/uploads/2018/12/CRU18269a-GNI-Network-Development-Plan-2018.pdf

https://www.gasnetworks.ie/corporate/company/our-network/irish-gas-market-overview/A-Look-at-the-Irish-Gas-Market.pdf

The following paper published by the Oxford Institute for Energy Studies analyses the potential risks to the NBP as a result of Brexit impacting the NBP-TTF spread, and the Irish Balancing Point (IBP) subsequently using the TTF as a reference price instead of the NBP . This similarity can be drawn with the impact of increased transportation charges on NBP spreads as larger NBP premiums will be required to accommodate the costs of delivering into the GB network

Shippers have international optionality in where to send gas therefore a decrease in arbitrage opportunities resulting from increased tariffs could lead to lower liquidity. Eventually a higher gas price which will not only be passed onto consumers, the progression of TTF liquidity will continue to divert gas away from the GB market.

https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/03/Brexits-Impact-on-Gas-Markets-Irish-Options-IBP-NBP-or-TTF.pdf

15 Appendix 5: Wheeling Analysis

The analysis set out here is specific to impact of introducing Wheeling as proposed in Modification 0678I. The impacts associated with implementing a CWD based methodology are considered in Modification Proposal UNC 0678 and not repeated here.

The analysis was performed by National Grid as the base data is commercially confidential.

Impacts of Wheeling

Table 1 shows the reduction in "Optional Charge" flows under Wheeling in Modification 0678I compared to current Optional Commodity Charge flows.

8 of the currently observed routes would qualify for a lower Wheeling Charges for entry and exit than the prevailing RPM from the sensitivity model for Gas Year 2019/20, therefore are considered to take the optional capacity charge. This would constitute 45% of the actual flows observed in Gas Year 2017/18.

2017/18	*Actual*	*Optional Charge flow GWh*	244,508
2019/20	*678I*	*Optional Charge flow (based on 2017/18 GY) GWh*	111,631

Table 1: Wheeling charge flow 2019/20 assumed, compared to GY 2017/18 actuals

The Wheeling charge is applicable on the condition there is 0km distance as outlined in the distance matrix that forms part of the RPM and FFC Methodology.

Table 2 compares the level of under recovery associated with the utilisation of Wheeling under the CWD model. It must be noted that in National Grid's analysis, the level of under recovery stated for both Entry and Exit may be exaggerated as the analysis does not recognise the impact of Existing Contracts which could impact the overall utilisation of Wheeling.

			Entry	Exit
2019/20	*678*	*Total Revenue Recovered (£):*	327,187,973	320,717,255
		Target Revenue Recovery (£):	337,823,191	337,823,191
		Revenue Input Figure Adjustment (£):	-10,635,218	-17,105,935
2019/20	*678I*	*Rev from Optional Charge flow @ 678 capacity prices*	34,535,608	17,665,740
		Rev from Optional Charge flow @ 678I capacity prices	2,260,910	2,260,910
		678I Under Recovery	-32,274,697	-15,404,830

Table 2: Wheeling charge assumed under recovery

16 Appendix 6: Compliance assessment

For ease of reference, the views of the Proposer of 0678I on Compliance with COMMISSION REGULATION (EU) 2017/460 of 16 March 2017 establishing a network code on harmonised transmission tariff structures for gas, can be found on the Joint Office website link below.

https://gasgov-mst-files.s3.eu-west-1.amazonaws.com/s3fs-public/ggf/book/2019-03/0678I%20EU%20TAR%20NC%20Compliance%20Commentary%20%282%29.pdf