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| **UNC Workgroup Report - PART I** | | | | At what stage is this document in the process? |
| UNC 0621, 0621A, 0621B, 0621C, 0621D, 0621E, 0621F, ~~0621G,~~ 0621H, 0621J, 0621K, 0621L:  Amendments to Gas Transmission Charging Regime | | | |  |
| **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). | | | | |
| Description: Description: YES_GREEN | This suite of Modifications has been to Workgroup for assessment, as recommended by the Proposers. | | | |
| Description: Description: High_Impact | High Impact: All parties that pay NTS Transportation Charges and/or have a connection to the NTS, and National Grid NTS | | | |
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Report Structure and How to use the Report

The Workgroup Report is divided into 2 parts. Part I is the overarching Workgroup Report containing all the key material relating to Modification 0621 and the ten Alternative Modifications (0621A, 0621B, 0621C, 0621D, 0621E, 0621F, 0621H, 0621J, 0621K and 0621L). The content for this section comprises the following:

* How to use the report, including navigation;
* Comparison Tables – an ‘at a glance’ comparison of the key elements of Modification 0621 and the alternative Modifications ;
* Key Issues – provides Workgroup analysis and views of the key regime changes and differences in the proposed approaches;
* Relevant Objectives – contains the Workgroup assessment on how the Modifications better facilitate the objectives;
* Workgroup Conclusions and Recommendations.



Part II provides an individual Workgroup Report for each Modification containing all the information specific to that Modification. The content each Part II report comprises the following:

* Modification (including Solution)
* Analysis – where provided by each Proposer or National Grid to illustrate the impact of the Modification
* Relevant Objectives – as provided by each proposer in the final version of their Modification.
* Legal Text – This is published as a separate document but the Workgroup’s views on the text is captured here.

Introduction

National Grid submitted Modification 0621 to the UNC Modification Panel in June 2017 with the aim of designing an amendment to the gas charging regime which was to better meet the relevant charging objectives and customer/stakeholder provided objectives and deliver compliance with the forthcoming EU Tariff Code (Regulation 2017/460).

Modification 0621 and all of its alternative Modifications 0621A, 0621B, 0621C, 0621D, 0621E, 0621F, 0621H, 0621J, 0621K and 0621L aim to replace the current charging methodology, which is based on Long Run Marginal Cost (LRMC).

Modification 0621 and nine alternative Modifications 0621A, 0621B, 0621C, 0621D, 0621E, 0621F, 0621H, 0621K and 0621L all propose Capacity Weighted Difference (CWD) as the replacement methodology; Modification 0621J proposes Postage Stamp (PS) instead. Modification 0621G was withdrawn on 20 April 2018.

Comparison Table

**Introduction**

The comparison table has been developed to show how the alternative Modifications differ from the UNC Modification Proposal 0621. In the simplified and full version, blue cells show variation in treatment of that element from UNC Modification Proposal 0621.

Note: the full comparison table has been used to aid in the formulation of the key issues section and the production of the legal text, especially where alternatives differ from the original National Grid 0621 proposal.

Simplified Comparison Table

[insert table or link to it]

Full Comparison Table

[insert table or link to it]

Key Issues

The table below sets out the key issues and differences as highlighted by the comparison table (4.1 to 8). Additional issues have also been identified through Workgroup discussions and these added to the table (4.9 onwards). The Workgroup have provided an assessment of each of these issues in order to provide rationale for the approach taken. The report also captures Workgroup members’ views where relevant on the issues and any impacts on the Relevant Objectives.

|  |  |  |
| --- | --- | --- |
| Issue Reference | Charging Regime Element | Issue Description |
| 4.1 | Reference Price Methodology | * Use of Capacity Weighted Distance (CWD) and Postage Stamp over the current LRMC methodology |
| 4.2 | Forecasted Contracted Capacity | * Transition and enduring arrangements * Obligated Capacity (during the 2 or 3 year transition period) and then National Grid forecast |
| 4.3 | Multipliers | * Multiplier of 1.0 (year 1) and approach to setting it in future years (stay as 1.0 or subject to consultation) |
| 4.4 | Interruptible Discount | * 10% (year 1) and approach to setting it in future years (stay as 10% or subject to consultation) |
| 4.5 | Specific Capacity Discounts | * Storage Discount - 50% or 86% * Interconnector Points – none or 50% (for 2 years)/average weighted matched forecast (thereafter) |
| 4.6 | Revenue Recovery (Interim) | * 2 years and being Flow based for non-IPs (except non-own-use at storage)/capacity based for IPs. * Exclusions for IPs – none or historical contracts * Exclusions for Non IPs – Storage or Storage and Historical Contracts |
| 4.7 | Revenue Recovery (Enduring) | * Capacity based for all * Exclusions for IPs – none or historical contracts * Exclusions for Non IPs - Historical Contracts at Storage or Historical Contracts |
| 4.8 | NTS Optional Charge | * 2 years/Enduring/3years/none * Existing formula structure with cost base indexed to RPI.  60km cap. Alternative to Transmission Services * Revenue Recovery Charge and Non Transmission services charge. |
| 4.9 | Legislative Compliance |  |
| 4.10 | Periodic process to determine Parameters and information publication |  |
| 4.11 | Non-Transmission Services Charges |  |
| 4.12 | K Principles and adjusting revenues in subsequent years |  |
| 4.13 | Security of Supply (SoS) and NBP impacts |  |
| 4.14 | Unintended (or simply) consequences |  |

**4.1 Reference Price Methodology (RPM)**

The aim of the RPM and overall framework of charging is to recover the Transmission Services Revenue from Capacity based charges.

Analysis and critique of the current methodology and potential alternatives have been conducted through the NTSCMF and UNC0621 workgroups. The results of this assessment were published in January 2017 (<https://www.gasgovernance.co.uk/ntscmf/subg1page>) and the updated analysis presented April 2018 (<https://www.gasgovernance.co.uk/0621/200418>). From January 2017 the Workgroup considered that the current LRMC methodology is no longer suitable and not be continued under the Gas Charging Review (that became UNC0621), this view was considered in the context of

* the EU Tariff Code,
* measurement against relevant charging objectives and
* stakeholder objectives.

This continues to be the view and is reflected in the analysis.

The overall conclusion from this Workgroup is support for this approach to move away from LRMC.

A number of drivers have been considered for the change to the reference price methodology. This includes moving from a forward-looking investment focused model (that does not deliver revenue recovery via capacity) to one that is more a revenue recovery-based approach based on usage/capacity reservations. Workgroup supported this move away from an incremental focused model as the network is not expanding. CWD still provides some geographical diversity in charges whereas postage stamp provides uniform charges across the network.

All the proposals, with the exception of UNC0621J, have adopted CWD as the basis to underpin the methodology.

UNC0621J adopts a postage stamp (PS) model to underpin the methodology.

Moving away from LRMC was supported by the Workgroup. The critique of the LRMC methodology highlighted that even small changes to the inputs to the methodology can drive significant variations in the charges. These arose mainly from the boundary issues of supply merit order requirement in the LRMC methodology that is not a feature of either CWD or PS. If adjusting the supply merit order and applying revenue adjustments, as highlighted in the analysis [link], then the resulting methodology is similar to a CWD approach, albeit more complicated. There is an expectation that CWD or PS will provide more stable and predictable charges than LRMC, to the extent that the inputs are stable.

Therefore, it was considered an alternative approach was more appropriate than attempting to modify the LRMC methodology.

**4.2 Forecasted Contracted Capacity**

**Inputs to RPM**

The CWD methodology requires three main inputs:

1. FCC;
2. A target revenue; and
3. Distances on the network.

[add in simple description of CWD method applied]

**Forecasted Contracted Capacity**

The NTS CMF produced a paper[[1]](#footnote-1) on the initial thoughts for the FFC and the FCC will need to be further developed by National Grid as part of the implementation of UNC 0621 or one of its Alternatives. FCC is a required value per Entry and Exit point under CWD. For PS, only an aggregate value for Entry and Exit is required. The FCC is required in order to calculate capacity reserve prices.

**Transition**

All the Modifications that have a transition period propose Obligated capacity as the FCC:

* Values are published/publicly available and understood by stakeholders;
* Values are stable and the process for change is known; and
* Objectivity of the values is less of a concern as they are fixed as per the Licence.

Relevant Objective (d) Competition: this approach uses more stable charges, more predictable outcomes and therefore better facilitates this objective. This also applies to 0621B, which proposes that the transitional approach is also the enduring solution.

The driver behind any under recovery will be the relative difference between the actual bookings and the Forecast Contracted Capacity. Due to Obligated levels being generally higher than expected capacity bookings, this will drive an under recovery in the transition period, to be recovered through Transmission Services revenue recovery charges.

To reduce the Transmission Services revenue recovery charges, it may be necessary to set the FCC closer to actual bookings, which is the purpose of the enduring approach.

**Enduring**

For the enduring approach the proposals, with the exception of UNC0621B, are to use a National Grid forecast for the FCC. As mentioned earlier, this forecast is to be produced nearer the time the enduring arrangements become effective. An obligation to produce this has been included into the solution along with the required explanation and rationale behind the proposed forecast.

Some Workgroup members have concerns on the ability of National Grid to produce an accurate Entry and Exit point specific capacity forecast and the potential to compromise the stability / predictability of revenue recovery charges (within year changes) and / or K values (year + 2 under RIIO). Some Workgroup members expressed concerns over the potentially high number of changes to revenue recovery charges and if this would require a Licence change.

Workgroup members do not want revenue recovery charges changing within a Gas Year any more frequently than under the current charging arrangements (i.e. once per year).

**FCC & Historical Contracts**

The point specific capacity inputs to the CWD capacity calculations are net of Historical Contract capacity volumes. The FCC is therefore the non-Historical capacity bookings in the enduring period and Obligated net of Historical Capacity bookings in the transition period. This is the same across all the proposals using CWD, except UNC0621J which uses Postage Stamp where aggregate capacity net of aggregate Historical Capacity is used.

This is to follow two principles:

* Capacity charges should be set to recover the target revenue from a target capacity. For any capacity for which the revenue is known (i.e. Historical) the revenue and capacity should be netted off. This retains the focus of the RPM that capacity charges are set to recover the required revenue. Exit does not have any Historical Contracts. If there were any they would be treated as Entry ones are.
* Historical Contracts are those that have procured the capacity under the clear price auction (as defined in the UNC) under the current regime where it has not been reasonable to say that these prices would change.

Not all in the Workgroup agree with this approach. As it stands all the proposals follow the same approach. In respect of Entry Reserve prices, this approach results in relatively higher capacity charges compared with an alternative approach, where capacity inputs would not be reduced by Historical Contracts. This alternative approach would increase the Transmission Revenue recovery charges.

Some in the Workgroup, expressed concerns that, depending on the levels of interim contracts, this could mean that capacity booked, particularly in the enduring period (e.g. by new infrastructure projects), could face higher reserve prices.

Relevant Objectives (d) Competition: Some Workgroup participants felt that the impact was positive as this approach preserves the UNC contractual arrangements in place prior to any changes as a result of these Modifications.

However, some Workgroup participants felt that this approach was negative, as this could result in users paying very different prices for the same product, depending on when they procured it. This is not a new situation but the potential price difference under a new charging methodology could be much higher as it would be based on revenue allocation in the future.

**4.3 Multipliers**

**[**cross reference each of these to TAR article]

The Workgroup recognised that the proposal to include provision for capacity product specific multipliers (applied to the Reference Price to determine Reserve Prices) was proposed in order to comply with Article 13 of Regulation 2017/460.

National Grid stated that it has proposed to apply multipliers of one (1.0) for all capacity products on the basis that it had not identified a need to incentivise procurement of one capacity product over another and therefore this aspect of the pricing methodology would not influence Users’ capacity procurement strategy. The Workgroup supported the proposed multipliers and noted that they were within the range permitted by Regulation 2017/460 Article 13(1).

[Earlier versions of the Proposal advocated that the post-year 1 multiplier values were directly subject to, and therefore potentially revised, as a consequence an annual consultation process managed by National Grid. As a consequence of concerns expressed by some members of the Workgroup, National Grid revised its Proposal such that the Multiplier value of 1.0 is enduring to the extent that it may be subject to subsequent Modification made pursuant to the UNC Modification Rules. Workgroup participants support the revised (latter) approach.]

**4.4 Interruptible Discount**

The Workgroup explored the impacts on pricing stability of historical zero priced interruptible capacity products. It also considered the requirements contained in Regulation 2017/460 (Article 16) in relation to the extent of the future discount which can be applied to determine Reserve Prices for Interruptible Capacity. The discount is a product of the predicted probability of interruption and the economic value, of the interruptible capacity product, can be taken into consideration.  National Grid presented analysis (covering the previous ten years) to the Workgroup, to support the basis for the proposed discounts and although the probability was found to be very low, it was agreed that it was not zero. Workgroup participants, therefore gained a greater level of understand in relation to the proposed level of discount.

National Grid recognised the views of some Workgroup participants, that attractiveness of the Interruptible capacity product is dependent upon it having a material discount to the equivalent Firm product. On this basis, National Grid put forward a banding approach such that the interruptible discount derived from the calculation prescribed by Regulation 201/460 Article 16 was rounded up to the nearest 10%. This recognises the “economic value” aspect of Article 16.

Earlier versions of the Proposa,l advocated that the post-year 1 interruptible discount were directly subject to, and therefore potentially revised by, an annual consultation process managed by National Grid. In response to reservations about this approach expressed by the Workgroup, National Grid revised its Proposal such that the interruptible discount of 10% (at Entry Points and at Exit Points) is proposed to be enduring to the extent that it may be subject to subsequent Modification Proposal.

**4.5 Specific Capacity Discounts**

**Storage**

The Workgroup recognised that the requirement for application of at least a 50% discount to the Reserve Price at Storage Connection Points was proposed in order to comply with Article 9 of Regulation 2017/460.

Options proposed:

1. 50% discount (UNC0621, E, H, L); or
2. 86% discount (UNC0621A, B, C, D, J, K)

Where 50% is proposed, it is stated that this is proposing the minimum level of discount prescribed by Article 9(1) in order to avoid double charging and to deliver compliance with the Regulation.

Where 86% is proposed, it is stated that this level of discount is proposed based on that prescribed by Article 9(1) in order to avoid double charging and to sufficiently reflect storage’s contribution to system flexibility and security of supply (as given in Article 9(1)) and to deliver compliance with the Regulation.

The following provided by Nick Wye/Storengy:

Justification for 86% over the minimum 50% capacity charge discount

*[summary of WWA paper]*

Relevant Objectives reference: Cost reflectivity is the primary objective from the proposer UNC0621A, B, C, J, K for proposing 86% discount. The proposals put forward a way that recognises Storage points do not have access to the NTS Optional Charge (or ‘shorthaul’) arrangements.

UNC0621D’s proposal of 86% is proposed on the basis of the likely marginal cost associated with flowing gas in and out of storage.

**LNG**

The Workgroup recognised the proposal to include the potential provision for application of discount to the Reserve Price at LNG Connection Points. Article 9 of Regulation 2017/460 says this may be applied. All Modifications propose a 0% discount, effectively as a placeholder for compliance purposes, as, unlike the case of Storage Connection Points, there is no minimum level of discount prescribed in the Regulation.

Workgroup participants supported the proposed level of LNG discount. This level can be changed in the future through a UNC Modification.

**Interconnection Points (IPs)**

[Revised wording for this section has been provided by the proposer of 0621F]

UNC0621F proposes a discount (50%) to physically bidirectional interconnection points which is equal to the discount applied to storage points. The proposer believes this is necessary to avoid a current market distortion and to ensure effective competition in the provision of seasonal flexibility whether via access to continental storage through physically bi-directional interconnection points, or via storage.

[For the transition the same discount as applied to storage is applied against the obligated capacity levels given this is used for forecasting bookings. For the enduring the discount is only applied to the proportion of anticipated entry bookings at the physically bi-directional IPs which, over the same year, equals the anticipated exit bookings at the IP. Any additional entry/or exit bookings would receive no discount and thus would be treated in the same as any other entry or exit point. By combining these two discount levels in proportion to the anticipated bookings to determine a weighted capacity reserve price, it ensures an enduring solution that can adapt to, and reflects in an appropriate way, future variations in how the interconnectors may be used.

One workgroup member suggested a counter to the justification in terms of the relevant objectives of the proposal is that access across the physically bidirectional interconnector provide more optionality for Users over domestic Storage.

Relevant objectives for the proposed discount

Effective Competition between Interconnector Users and Storage Users.

The proposer argues effective competition will be enhanced through the equal charging treatment of storage and physically bi-directional interconnection points. It will remove a market distortion for shippers using continental storage via the interconnectors to meet GB’s seasonal flexibility. It will create more of a level playing field for different sources of seasonal flexibility available to shippers, and ultimately to GB consumers. It increases the choice of shippers when procuring seasonal flexibility - they can consider Continental Storage accessed via physically bi-directional IPs or GB-located storage, without the distortion of differential National Grid charges. This is particularly relevant to the GB market and GB consumers following the closure of the Rough storage facility. Improved access to Continental Storage, on a levelized and competitive charging basis, would be a step in the right direction to meet the market’s current structural needs.

It also ensures compliance with the Regulation (EC) No 715/2009 by removing a distortion to cross border trade.

**4.6 Revenue Recovery (Interim)**

Historical / Existing Contracts

The Workgroup was in agreement around some of the National Grid interpretation of Article 35 of Regulation 2017/460 that while entry capacity was relevant, exit capacity was not, on account of exit capacity already being subject to a variable price. It was concluded that Existing Contracts therefore relate to entry capacity booked prior to 06 April 2017 (which is the entry into force date of TAR). It was recognised that there is a disconnect between the entry into force date of TAR, and the implementation date of the related UNC Modification proposal. National Grid therefore created the category of ‘Interim Contracts’ to cover entry capacity booked between these two dates. Together then Existing Contracts and Interim Contracts can be referred to as Historical Contracts. National Grid also stated its belief that Article 35 does not, in general, cover commodity charges, again on account of this being a variable charge. There was more debate around this point, but the Workgroup was in broad agreement with National Grid’s view.

The existing/historical contracts matter because they are treated in a particular way under some of the other processes. There was some Workgroup debate around the treatment of Existing Contracts, including a paper produced by ENI (link) which recognised the status and contribution of Existing Contracts, and argued for special consideration under the new regime. National Grid confirmed in its Modification that Existing Contracts do not feed into the CWD model (as part of the capacity input) for producing prices, and the updated CWD price will then also not apply to Existing Contracts – rather the existing fixed price of the booking will continue to prevail. Additionally, a rule was added in around Reconciliation, so that the historical entitlement at Storage sites will not attract a capacity reconciliation charge. The justification for this, is that uniquely, Storage sites have a zero commodity charge at present (and it is not considered a variable charge under the current methodology), therefore the reconciliation charge will continue to be zero for this capacity. It was noted that this ‘exempt’ capacity at storage sites will naturally fall away to zero with time.

[other Modifications have included further special rules for the treatment of Existing/Historical contracts with regards to Reconciliation]

Use of Transition period (relevant to all proposals except UNC0621B)

The Transition period for UNC621, A, C, D, F, H, J is between October 2019 and September 2021, inclusive. UNC0621E is the same for Entry, with Exit between October 2019 and September 2022 . UNC0621B does not have a transition period.

[Ideally the methodology proposed from 2019 for an FCC would produce reserve prices that will recover most of the transmission services revenue.] The main benefit identified in having a transition period is to allow time to see behavioural responses to fundamental changes to the charging framework and to develop a more informed capacity forecast. Most Workgroup participants agreed with this proposal.

Moving from low capacity charges, high commodity charges to a framework with high capacity charges and low, or zero commodity charges is a fundamental shift in the charging methodology.

Moving to a completely new methodology from that currently in place, resulting in prices that can be materially different with the addition of a transition period allows market participants time to adapt.

The scope and depth of changes is significant and in terms of the impact on Users of the NTS, a transition period would provide time to understand the impacts and to provide data to better inform a forecast.

Buying behaviours will change and, with the removal of zero prices, this is unpredictable.

[Refer to some text for 621B which does not have a transition period]

[refer to some text for 621E which has a longer transition for Exit]

**Relevant Objectives for the Transition Period**

Relevant objective (d). Competition is based on having stable and predictable charges which can only be generated if National Grid has reliable data on which to build a capacity forecast. This data is expected to be generated during the transition period as behavioural responses emerge. E.g. reaction to the removal of zero reserve prices.

Revenue Recovery Charges are required in order to manage the collection of National Grid’s allowed revenue within year.

For any anticipated revenue shortfall from capacity charges (or any other dedicated charges) the revenue recovery charges are required and typically adjusted within year with the aim that there is no or little under or over recovery by the end of the year. Changes to these recovery charges are only on an ex-ante basis with the exception of the Entry Rebate.

Transition

Under all proposals the Transmission Services Revenue Recovery charge is commodity based at Non-IPs. Due to the uncertainty on the capacity forecast in the transition period as this new methodology comes into place, it was considered helpful to not place too many burdens on the capacity forecast as the risk of under or over recovery could be more significant without gaining more certainty on the capacity values expected. This would have the potential to add more risks on revenue recovery in the event the forecast is incorrect and capacity bookings are expected to change from 2019.

[add in sensitivity analysis on FCC % variations to demonstrate the effects].

[link to use of Transition period – in this doc]

Given it is an established method and understood and considered to be effective in managing revenue recovery, the use of a flow based commodity Transmission Services charge is to be applied at Non Interconnection Points. This is similar to the TO Commodity charges in place currently. This will not be applied to any storage flows (except own-use gas).

At Interconnection Points it is not possible to levy a commodity charge for the purposes of revenue recovery for Transmission Services. However the prospect of not levying a revenue recovery charge is material and would place additional revenue recovery on non-Interconnection Points. National Grid proposes a capacity charge in the interim period for non-Interconnection Points that will be applied to all capacity except any storage.

**4.7 Revenue Recovery (Enduring)**

Revenue Recovery charges should be the exception rather than the norm for the enduring period. It is necessary to have these in order to manage revenue recovery taking note that the capacity reserve prices can only be changed once per year.

All capacity will pay the top up charge in the enduring regime, with the exception of historical storage contracts.

The top up charge will be there to manage the difference between the FCC and the anticipated bookings. Any anticipated under recovery driven by any capacity discounts (e.g. storage, interruptible) will be managed by an ex ante adjustment in the RPM to adjust the reserve prices.

As a result, it is expected that the Transmission Services Revenue Recovery charges should be minimal and over the whole capacity demand base (except historical storage) it will be a small charge.

**4.8 NTS Optional Charge**

All proposals except UNC0621D propose an NTS Optional Charge. Views expressed in the Workgroup on the benefits of having such a charge have included it being required:

* To encourage use of the NTS and therefore avoid inefficient bypass;
* To attract gas to the GB market
  + Conducive to cross border trade;
* To potentially help overcome some of the counter intuitive outcomes from the RPM, such as exit prices close to entry points being high.

Some of the Workgroup expressed the view that the product cannot be justified or the suggested benefits do not (?) justify the product.

Through the Workgroups, the majority of participants support the inclusion of a NTS Optional Charge.

UNC0621B and UNC0621C propose a methodology for the NTS Optional Charge that is enduring and does not have a defined end for the methodology proposed. All other Modifications (except UNC0621D) propose NTS Optional Charge arrangements that will end at the end of the transition period prescribed (i.e. ending 30 September 2021).

The options in the proposals:

1. Same formula structure as today, costs indexed by RPI each year, exemption from Transmission and Non Transmission revenue recovery charges for eligible volumes, distance cap of 60km. Under this proposal the product does not “time-out”. (This is UNC0621B).
2. Same formula structure as today, costs indexed by RPI each year, exemption or discounts to Transmission and Non Transmission revenue recovery charges for eligible volumes, distance cap of 60km. End date of product at the end of the transition period. (This is UNC0621, A, E, F, H, J, K)
3. Discounted Transmission Services Capacity charge Transmission Services Revenue recovery charges payable on eligible quantities. Exemption from General Non Transmission Services Revenue Recovery Charges. (This is UNC0621C).
4. No NTS Optional Charge (This is UNC0621D).

Updating costs for RPI

The cost inputs to the NTS Optional Charge are based on historical values from 1998. It is proposed these are indexed to 2019 for the first year and then by RPI into each subsequent year where these are used in the NTS Optional Charge proposals (UNC0621, A, B, E, F, H, J, K). As there is a limited cost base to update costs with confidence, the use of RPI was used as it is a publicly available value. RPI was considered more preferable than CPI as RPI is a feature of the RIIO-T1 price control.

This is on an average cost basis and does not take into account geographic variation of costs that would be incurred if building a bypass or costs of existing infrastructure that could be utilised to bypass the NTS.

Use of a distance cap (link to the 0621 presentation on distance cap that profiled the range of distances).

Several of the Modifications, propose the use of a distance cap of 60km. The cap (measured in km) is a straight line distance between the two nominated points. No other distances are being proposed for the distance cap. The use of the distance cap is to keep the product “short” in nature without having known routes for NTS Optional Charge ‘just missing out’ (e.g. if there were currently two routes utilised of 55 and 57km, a cap of 56 would mean the 57km route just misses out – a scenario proposals are looking to avoid). The range of routes showed [link] that there is a plateau beyond 60km and was a reasonable limit to adopt.

Some have expressed views that there should not be a distance cap or that 60km is arbitrary. Other views have been raised which question the logic behind the 60km value not being linked to investment costs, although no proposals put forward a distance cap different to 60km. The 60km value does not represent an analysis of what is an efficient or viable investment to bypass the NTS. It is trying to make the charging arrangements more equitable by reducing the amount not paid by NTS Optional Charge users and borne by Non NTS Optional Charge users. In the development of the changes to the NTS Optional Charge, a review of costs was considered, however simply adjusting (increasing) the costs did not address the issue whereby high commodity charges incentivise use of NTS Optional Charge and this in turn increases the commodity which again incentivises use of the NTS Optional Charge. The use of a distance cap does limit the access to the NTS Optional charge to what could be considered a more reasonable distance. Originally it was not envisaged to be taken over the large distances it is currently being utilised for.

On the use of a distance cap, some Workgroup participants thought that it would adversely impact large customers and including Interconnection Points who avail themselves of the NTS Optional Charge.

Enduring arrangements

A review of the whole NTS Optional Charging arrangements was considered beneficial if there was sufficient time. Rather than continue the current arrangements, and consider how it could work in a mostly capacity based regime, most of the Workgroup supported a more comprehensive review. For those Modifications that do not have an NTS Optional Charge beyond the transition period, it is required that a UNC review will be proposed to look at the future of the NTS Optional Charge to be effective from the end of the transition period. This will be a separate UNC change outside of UNC0621. Whilst this is expected to be raised in mid-2018, some concerns have been expressed in the Workgroup where, under proposals that have no NTS Optional Charge beyond the end of the transition period, there is no certainty of an NTS Optional Charge in the respective UNC0621 Modifications. The conclusion of any separate Modification on the review of the NTS Optional Charge would only deliver a new arrangement if implemented. Without such a change to the UNC, the NTS Optional Charge ends at the end of the transition phase.

UNC0621B and UNC0621C propose to have enduring arrangements for the NTS Optional Charge. UNC0621B and UNC0621C proposes an approach from 2019 and this will continue for all years to follow.

UNC0621D proposes that the current NTS Optional Charge will end on implementation of this proposal and by definition is an enduring solution.

In all proposals except UNC0621C where there is an NTS Optional Charge, the current NTS Optional Commodity charge will end on implementation to be replaced by the NTS Optional Charge and all Users will be required to apply for the charge to be effective from 01 October 2019.

For UNC0621C, Users will be deemed to apply for the charge to be effective from 01 October 2019.

Methodology for the NTS Optional Charge

All proposals except UNC0621C propose that National Grid produces and maintains a methodology statement for the NTS Optional Charge formula. This methodology statement will be referenced in UNC. UNC0621D does not require a methodology as it does not propose an NTS Optional Charge.

UNC0621C has the methodology for the NTS Optional charging as part of its solution and the inclusion of the method will be in the UNC.

**4.9 Legislative Compliance**

The Workgroup recognised and acknowledged that elements of the Proposal are driven by a need for the GB arrangements to comply with EU Regulation 2017/460. Principle areas of the proposed methodology subject to such compliance issues are:

* the Reference Price Methodology (*Articles 6 to 8*);
* the categorisation of Transmission and Non-Transmission Services (*Article 4*);
* the transition to a capacity based charging regime (*Article 4(3)*); and
* the application and extent of site and capacity product specific discounts (*Articles 9 and 16*).

The broad Workgroup consensus was that the Proposal is compliant with Regulation 2017/460 [however specific concerns expressed by one or more individual members of the Workgroup are recorded in the relevant section/s of this impact assessment].

*Include Julie Cox table or link to it here???*

**4.10 Periodic process to determine Parameters and information publication**

For Multipliers (all set at ‘1’), Interruptible adjustments (10%) and LNG discounts (0%), in all the proposals these values will be in the UNC. Any subsequent changes to these values will require a UNC change.

*The reasoning behind this was that the UNC Modification process is a known and accepted route likely to result in the enabling of a thought-through and transparent change.*

**4.11 Non-Transmission Services Charges**

Non Transmission Services Revenue is recovered through a number of charges. These are:

(i) St Fergus Compression Charge;

(ii) NTS Meter Maintenance Charges;

(iii) DN Pensions Deficit Charges;

(iv) Shared Supply Meter Point Administration Charge;

(v) Interconnection Point Allocation Charge;

(vi) General Non-Transmission Services Charges.

These charges are not Transmission Services as they are not considered to fall under the definition 4.1 of TAR NC. The charges can be attributed to Transmission or Non Transmission, subject to approval by the NRA (in this case Ofgem). The proposals are that these are treated as Non Transmission Services. This is the same under all the proposals.

The Calculation and application of all the above charges are to be the same as under the current methodology. The General Non Transmission Services Charges (Entry and Exit) are to be calculated in the same manner as the current SO Commodity Charges in that the other charges are forecasted then deducted from the target Non Transmission Services Revenue to derive the amount to be recovered through the General Non Transmission Services Charges (GNTSC).

There is limited change in approach between the current SO charging methodology and the proposed Non-Transmission Services charging methodology. Workgroup participants supported the proposals including the exemption from the General Non Transmission charges under the NTS Optional Charge rules.

**4.12 ‘K’ Principles and adjusting revenues in subsequent years**

‘K’ is the under or over recovery from a previous revenue or formula year (i.e. April to March) that is added to or subtracted from the allowed revenue for the year in which charges are being set. Under the RIIO-T1 price control there is a two year lag, i.e. if K was an under recovery in the formula year 18/19 it would be added to the allowed revenue for the formula year 2020/21. If K was an over recovery it would reduce the allowed revenue. The recovery of any value under ‘K’ will therefore be added or subtracted to the part of the revenue to be recovered in the relevant year. K will continue to be split between Entry and Exit for Transmission Services, like it is in the current Transmission charges. Therefore an over recovery on Exit will reduce Exit charges in a subsequent year but not impact Entry. Likewise Entry will not influence Exit in the same manner.

All the proposals put forward the same approach.

Workgroup participants supported the proposals as they also reflected comments and feedback through the development of the proposals that Entry K values should only influence Entry charges and Exit K values should only influence Exit charges.

The enduring aim of the methodology proposed by all Modifications with the exception of UNC0621B is to recover the majority of Transmission Services Revenue through capacity charges. There is an aspiration to keep the Transmission Services revenue recovery charges as low as possible.

* With the overall changes to the charging framework, the industry feedback was to allow aspects of the methodology to bed in for a period;
* Ultimately a move to 100% capacity requires a forecast or a methodology to produce a forecast of capacity bookings. This would benefit from having data on behavioural changes to capacity bookings, especially with the removal of zero priced capacity and changes to interruptible pricing. National Grid has proposed a two year period for the transition whereby there is a fixed approach for setting the charges (i.e. obligated capacity), then the transition to an enduring approach that will use a forecast of capacity and will, in addition to developing a strawman and method for creating a forecast, also benefit from taking into account the capacity bookings up to that point and the behavioural changes from the new methodology.
* A transition with a specified end point provides certainty of when the changes take effect. Given the aspirations of National Grid’s proposal, in line with the EU Tariffs Code to achieve a majority of Transmission revenue via capacity, this provides a short and predictable path to deliver this objective.

**4.13 SoS and NBP impacts 0621**

Workgroup raised some concerns on this but one for the responses / IA.

Impact on security of supply and the National Balancing Point (NBP) price and any potential unintended consequences.

Several Workgroup participants requested analysis relating to the impact of Modifications 0621/A/B/C/D/E/F/G/H/J on security of supply. Several Workgroup participants felt that aspects of the changes proposed by National Grid in its Modification 0621 were likely to have effects or consequences which could contribute to an improvement in the security of supply such as….

Others proposed consequences of the proposed changes which were likely to have a detrimental effect on security of supply were suggested, such as increasing charges for onshore storage facilities which may lead to economic decisions to close such facilities. Other consequences were proposed with regard to charges at entry points, in particular St Fergus, where potential charge increases may lead to economic decisions which could affect the viability of the facilities at the entry point, with concomitant effects on those North Sea fields supplying gas to the GB market through such facilities.

Changes to charges at Interconnection Points could also clearly affect the NBP with more liquidity provided where flow to the GB market was favourable compared with other destinations and vice versa.

The Workgroup as whole recognised that any quantified analysis of this nature would not be provided by National Grid and therefore requested that the Regulator to assess this factor in its Regulatory Impact Assessment.

**4.14 Unintended (or simply) consequences (Draft)**

Outcomes of the methodology all combined for Transmission has some effects that some parties have raised as concerns on aspects of the resulting charges. Some that have been identified are:

* Geographic distribution of prices. Under CWD the geographic distribution plays a part, however it creates more of a level playing field with the ranges of charges between points being narrower than under CWD. In some cases this does mean prices rise from current levels and others fall.
* Prices of points, specifically Exit points that are close to Entry points. Similar to above, for some prices do rise from current levels.
* Whilst the size of the band of prices is narrower under CWD than LRMC, there are some prices that are potentially more significantly higher than others, even if in keeping with the methodology applied. Perhaps more noted in the enduring for Entry (St Fergus).
* Comparisons between the Existing or Historical Contract prices and all others generated under the RPM.

Relevant Objectives

Approach for Workgroup Assessment of the Relevant Objectives

For every Relevant Objective an assessment has been made by the relevant proposer stating whether the impact of the Modification Solution is negative, neutral (“none”) or positive. The text provided by the proposer should explain the Impacts of their Modification. It is not enough for the Proposer to simply state that, for instance, a Modification has a positive impact on competition between shippers (Objective d); a full rationale of specifically how competition is furthered must be demonstrated.

The Workgroup must also provide an assessment against all the Relevant Objectives. Modification 0621 and each Alternative Modification will be assessed against each Relevant Objective in turn to determine if the Workgroup agrees or disagrees that the Modification demonstrates that the Relevant Objectives are furthered as set out in the Modification Proposal(s).

Where this is the case, the Workgroup Report has changed the status to indicate that the Relevant Objective is ‘impacted’. Where the Workgroup has differing views to that proposed in the Modification, the Workgroup Report captures a statement of the summary of the reasons why the Workgroup consider the impact to be different (positive or none or negative).

Where supporting evidence is provided, this has been cross-referenced to the analysis of the impacts against the Relevant Objectives. This approach does not preclude Workgroup 0621 participants from providing additional views and evidence as part of the consultation process.

**Table One - A summary of each Modification and the Proposer’s assessment against each Relevant Objective.**

The table below provides a summary of the Proposer’s assessment against each Relevant Objective. It also includes details of the version of the Modification (and the Relevant Objectives contained within it) which has been considered as part of the Workgroup’s assessment of the Relevant Objectives. Where the Modifications were amended subsequent to Workgroup assessment…..

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Relevant Objective** | **0621** | **0621A** | **0621B** | **0621C** | **0621D** | **0621E** | **0621F** | **0621H** | **0621J** | **0621K** | **0621L** |
| v4.0 (6/4/2018) | V4.0 (20/4/2018) | v4.0 (6/4/2018) | v4.0 (17/4/2018) | V4 (30/4/2018) | V2.0 (23/4/18) | v4.0 (13/4/2018) | V2.0 (26/4/2018) | v2.0 (10/4/2018) | v1.0 (26/4/2018) | v1.0 (26/4/2018) |
| **National Grid** | **Storengy** | **SSE** | **Centrica** | **WWU** | **Uniper** | **IUK** | **ENI** | **RWE** | **Gateway** | **Shell** |
| a) Efficient and economic operation of the pipe-line system. | None | Positive | Positive | Positive | Positive | None | None | None | None | Positive | None |
| 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 | None | None | None | None | None | None | None | None | None | None |
| c) Efficient discharge of the licensee's obligations. | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | 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 | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | 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 | None | None | None | None | None | None | None | None | None | None |
| f) Promotion of efficiency in the implementation and administration of the Code. | None | None | None | None | None | None | None | None | None | None | 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 | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive |

Workgroup Assessment of Impacts of the modification on the Relevant Objectives.

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| Impact of the modification on the Relevant Objectives: | |
| **Relevant Objective** | **Identified impact** |
| a) Efficient and economic operation of the pipe-line system. | Positive – 0621A/B/C/D/K |
| 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 – All Modifications |
| 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 – All Modifications |
| 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 – All Modifications |

1. **Efficient and economic operation of the pipe-line system**

**0621A:** Based on analysis carried out by Storengy and WWA there is a clear relationship between the physical operation of storage facilities and the pipe-line system.[[2]](#footnote-2) The strong, positive correlation between aggregate gas demand and storage withdrawals/injections means that National Grid, in its role as SO, benefits from gas storage, at no cost. The flexibility provided by gas storage provides direct support to National Grid in its role as system balancer through contributing to linepack management and reduced activity and costs associated with National Grid’s participation in the balancing market (OCM) or any other contractual arrangements it may choose to enter into as part of its network balancing toolbox.

The level of discount should be consistent with the contribution to system flexibility (EU Tariff Code) and the proposer of 0621A believes that the application of the minimum 50% discount does not fulfil this requirement. A discount of 50%, according to the EU Tariff Code simply avoids storage users being “double charged” for the use of the system. On this basis, the proposer contends that a discount of 86% not only better reflects the contribution made by storage facilities in relation to the efficient and economic operation of the pipe-line system, but also preserves the ability for gas storage to provide an economic means for balancing the pipeline system. The additional costs imposed on storage users through the application of the minimum 50% discount, and in particular the related significant escalation in the cost of off peak capacity, would result in undesirable market impacts, such as increased between day and within day price volatility. These market impacts conflict with this objective by inflating the costs associated with balancing the system.

**0621B:** The NTS Optional Charge is an important aspect to maintain efficient and economic operation of the pipeline system. Without a suitable NTS Optional Charge product allowing a reduction to Transmission and Non-Transmission charges, one can expect the increased use of private bypass pipelines. For example, a private pipeline of 400m could connect St Fergus to Peterhead. Once built, a private bypass pipeline would allow a shipper to avoid all future Transmission and Non-Transmission charges. The revenue then forgone by National Grid would have to be recovered across a smaller remaining customer base. In general, this would increase costs to some NTS customers and result in a duplicate of pipeline infrastructure - hardly an efficient outcome.

**0621C:** The whole charging package contained in this proposal 0621C has been designed to encourage fair and efficient access to the pipe-line 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. The removal of free capacity products is an important aspect of the proposal as is the inclusion of a meaningful and sustainable solution for the Optional Charge (or ‘shorthaul’). Without ‘shorthaul’ there will likely be an increased incentive for the use of some system bypass pipelines because some of the charges being generated by CWD produce counter-intuitive outcomes – high exit charges for large sites located close to entry points (the same argument could be made had the reference price methodology been Postage Stamp.) By improving the predictability of the use of the system, National Grid should be better placed and better prepared to operate it in a more efficient manner. By encouraging efficient use of the system by shippers (e.g. by avoiding inefficient bypass) National Grid will ensure that its operations can be economically optimised so that costs are kept as low as possible on a pence/ kWh flowed basis.

At the same time, this Proposal 0621B recognises that the current level of ‘shorthaul’ discounts applied to Transmission Owner (TO) charging has become distorted in recent years by their structural link to the rising level of TO Commodity charges. The Proposal 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 TO ‘shorthaul’ charging methodology and thus providing a robust, enduring basis for dis-incentivising inefficient NTS by-pass.

**0621D:** The amendments in particular the removal of the optional charge will facilitate efficient and economic operation of the pipeline system in compliance with Gas Act section 9.

**0621K:** Based on analysis carried out by Storengy and WWA there is a clear relationship between the physical operation of storage facilities and the pipe-line system.[[3]](#footnote-3) The strong, positive correlation between aggregate gas demand and storage withdrawals and injections means that National Grid, in its role as SO, benefits from gas storage at no cost. The flexibility provided by gas storage provides direct support to National Grid in its role as system balancer through; contributing to linepack management and reduced activity and costs associated with National Grid’s participation in the balancing market (OCM) or any other contractual arrangements it may choose to enter into as part of its network balancing toolbox.

The level of discount should be consistent with the contribution to system flexibility (EU Tariff Code) and the proposer believes that the application of the minimum 50% discount does not fulfil this requirement. A discount of 50%, according to the EU Tariff Code simply avoids storage users being “double charged” for the use of the system. On this basis, the proposer contends that a discount of 86% better reflects the contribution made by storage facilities in relation to the efficient and economic operation of the pipe-line system.

With regards the proposed 100% discount for Off Peak capacity at storage Exit Points, this is justified on the basis that pipeline capacity is constructed and paid for by storage users through the acquisition of Firm Capacity, in particular Entry Capacity. The 86% discount reflects the additional benefits provided by the operation of the storage, however, given that storage Users only inject gas into facilities at times of Off-Peak, any charge for the purchase of this product results in National Grid recovering surplus revenue. Firstly, the capacity costs have been recovered, through revenue collected from firm capacity sales, and that the additional infrastructure can be used on a bi-directional basis, Secondly, access to zero priced interruptible exit capacity has facilitated storage cycling with facilities filling and emptying [on average 3 times] a year. Storage cycling operates counter to capacity demands for which the pipeline system is designed to meet. Storage exits gas from the pipeline system into storage at times of relative low demand (i.e. when there is spare pipeline system capacity) and injects gas back into the network at times of relative high demand (i.e. when there is high demand for pipeline system capacity). This cycling therefore does not utilise network capacity designed to meet peak demand; indeed, it reduces the level of pipeline capacity that is required by other Users and needs to be provided by National Grid.

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| Workgroup Statement |
| [review/link to wording from interruptible discount key issue and justification of 100% - some Workgroup participants are concerned as to the adoption of a 100% discount and discrimination issues with storage getting a higher discount not made available to other users]. |

**c) Efficient discharge of the licensee's obligations.**

**0621/0621A/0621B/0621D/0621E/0621F/0621H/0621J/0621K/0621L:**

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

**0621C:** The proposal 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.

**0621D:** The proposer believes that the removal of the Optional Charge from October 2019 better facilitates A5(5).

**0621L:** Removing existing contract volumes and revenue prior to calculation of Reference Prices leads to higher reference prices for the remaining unsold capacity. It is proposed to include existing contracts in the calculation to ensure that there is no undue distortion between existing capacity holders and parties purchasing capacity in the future, thus facilitating the Licensee’s obligations by setting the reference price at a level best calculated to avoid undue preference in the supply of transportation services.

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| Workgroup Statement |
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**Workgroup Participant question/s for consideration**

**RO C and Charging OBJ AA I – Licensee’s obligations and undue preference**

* Removing existing contract volumes and revenue before calculation of reference prices does lead to higher reference prices for the remaining unsold capacity. Does this create an undue distortion between existing capacity holders and parties buying capacity in the future?

To note:

1. The average prices hide that all prices in CWD model exhibit a range – existing contract prices cover a range too (info not publicly available)
2. Existing capacity is held on quarterly blocks and future bookings cannot be changed, whereas other new capacity bookings can be purchased daily and profiled to meet requirements – is this sufficient to ensure there is no undue preference in the interim period and the enduring periods too?

**d) Securing of effective competition between relevant shippers and between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers (0621D).**

**0621/0621A/0621D/0621E/0621F/0621H/0621J/0621K/0621L:** The proposed changes to TPD B, EID B and Transition Document (where applicable) support the implementation of the new charging methodology and arrangements. To the extent that the application of a new Reference Price Methodology is expected to provide a more stable and predictable price setting regime, Shippers will have a greater level of confidence in their forecasts of prospective use of network costs and therefore set their own service costs more accurately (potentially with a lower risk margin) thereby enhancing effective competition.

**0621B:** The proposed changes to TPD B, EID B and Transition Document (where applicable) support the implementation of the new charging methodology and arrangements*.* Charges derived from the Capacity Weighted Distance (CWD) methodology will only be stable and predictable if the FCC (Forecasted Contracted Capacity) values are stable. FCC values based on Obligated capacity, are published in advance in National Grid’s (NG’s) licence and change infrequently, they will be more stable than values based on forecasts derived by National Grid using a methodology that is yet to be defined and exposed to annual change. More predictable and stable charges will facilitate competition because, all else being equal, greater cost certainty will lower risk and will result in lower cost of capital for Shippers which will reduce barriers to entry and facilitate competition. Therefore, a stable Forecasted Contracted Capacity (FCC) based on Obligated baseline values in the licence is expected to improve competition compared with an FCC based on forecasts*.*

**0621C:** The proposal 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 Historical capacity, providing shippers with confidence that once a contract for capacity has been struck it will be honoured. The discount to capacity charges for gas storage has been set to help keep these important facilities economically viable and available to shippers.

The 0621C Optional Charge/ ‘shorthaul’ solution will allow shippers to compete more effectively at proximate offtakes, including power stations, without having to build their own (inefficient) by-pass pipelines. The solution will provide for this during both the transitional and enduring periods.

**0621D:** The removal of the Optional Charge better facilitates competition between Distribution Network (DN) operators and relevant Shippers because it removes a cross subsidy in favour of large gas consumers directly connected to the NTS. This is a considerable disincentive to connect to DN networks.

**0621F:** Additionally, effective competition will be enhanced through the equal charging treatment of storage and physically bi-directional interconnection points. It will remove a market distortion for shippers using continental storage via the interconnectors to meet GB’s seasonal flexibility. It will create more of a level playing field for different sources of seasonal flexibility available to shippers, and ultimately to GB consumers. It increases the choice of shippers when procuring seasonal flexibility - they can consider Continental Storage accessed via physically bi-directional IPs or GB-located storage, without the distortion of differential National Grid charges.

This is particularly relevant to the GB market and GB consumers following the closure of the Rough storage facility. It is widely recognised that the GB market now has a relatively low level of seasonal storage within national boundaries. Improved access to Continental Storage, on a levelized and competitive charging basis, would be a step in the right direction to meet the market’s current structural needs.

**0621J:** Basing the RPM only on Forecasted Contracted Capacity and Revenue under a Postage Stamp methodology allocates network costs uniformly which is fair, proportionate and non-distortive.

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| Workgroup Statement |
| Links to key issues – FCC, etc.  Consideration of Stakeholder/0621 additional objectives are also relevant to this section. |

**Workgroup Participant question/s for consideration**

**RO D and Charging OBJ C – competition**

Capacity prices will change year on year as existing contracts expire where existing contracts are excluded prior to the reference price calculation – does this result in an impact on competition or an undue distortion?

Should NG’s FCC forecast at entry be the same as the forecast for the enduring period at exit, which uses DN bookings?

* WG view: The forecast is to be developed at a later date so this question cannot be answered at this stage.

**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.**

**0621/0621A/0621B/0621D/0621E/0621F/0621H/0621J/0621K/0621K:** The proposed changes to TPD B, EID B and Transition Document (where applicable) support the implementation of the new charging methodology and arrangements including those elements required to comply with the EU Tariff Code.

**0621C:** A key driver for change is the requirement to fully implement the EU Tariff Network Code by 31 May 2019 and this proposal will ensure that the obligation is fulfilled.

**0621E: Longer Transition Period at Exit (2019-2022)**

Under the current charging arrangements, parties can make a reasonable assessment of future gas transportation costs as the structure, nature and trend of charges is generally well understood. In Modification 0621, National Grid Gas has proposed a transition period of 2019-2021, moving from capacity / commodity to full capacity based charges. Although the base capacity prices will differ from now (due to the implementation of the CWD model), the use of a FCC value of 100% of obligated capacity will result in a commodity based revenue recovery charge, like the current arrangements. Analysis conducted during the Modification development process has shown that the move to full capacity based charges will result in significant changes to payable charges for certain points on the network with some large locational shifts in charge levels.

At the time parties participated in the recent Electricity “T-4” Capacity Auction (February 2018), which requires parties to bid four years ahead of electricity capacity delivery, neither the inputs to the CWD model nor the overall structure of the charging regime were finalised, meaning that it was almost impossible for parties to make an accurate assessment of the full capacity based Exit charges that would be payable in 2021. To avoid unfairly penalising parties for commercial decisions made on the best available facts, it is therefore proposed that the transition arrangements at Exit continue until 30 September 2022. This would mean that the existing capacity / commodity arrangements at Exit would effectively continue into the gas year for which the recent T-4 auction applied (2021-22).

In the proposer’s view, this aspect of the proposal would therefore better facilitate Relevant Objective (c) (*That, so far as is consistent with sub-paragraphs (a) and (b), compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers*), as it would maintain a “level playing field”, by avoiding imposing unforeseeable costs on Generator Users, which had they been known at the time of the T-4 auction, could have been fully factored into Capacity Market bids. As this was not realistically possible for any party, there is a risk of significant, unavoidable costs being levied which could harm competition between Shippers and ultimately have unintended consequences for both gas and electricity consumers.

**0621E: Historical Contracts**

In the proposer’s view, it is necessary to maintain the existing approach of applying a commodity-based revenue recovery charge for revenue recovery purposes to Entry Capacity committed to by Shippers before implementation of these charging reforms in October 2019. Full-capacity based revenue recovery charges for existing contracts, as proposed under National Grid Gas’ Modification 0621 would, in the proposer’s view, impose undue costs on Shippers, which could not have reasonably been foreseen at the time the contracts were struck many years ago. Furthermore, such a change would likely have a “chilling” effect on long-term entry capacity bookings as it would create regulatory uncertainty for Shippers about the possible future treatment of such contracts, as National Grid Gas’ proposal, if implemented would set a new precedent. Moves between transmission charging models in the past have not resulted in material changes to charges for Entry capacity already booked.

Maintaining a capacity / commodity split for Existing Contracts would ensure fair treatment of all Shippers, incentivising those who can adjust their capacity bookings to reflect flows to do so (e.g. new bookings) but not unduly penalising those who cannot (i.e. existing bookings). Implementation, therefore, could be considered to better facilitate Relevant Objective (c) (“*That, so far as is consistent with sub-paragraphs (a) and (b), compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers”*).

**0621F:** Key objectives of the third energy package are to facilitate efficient gas trade and competition across borders. Given that physically bi-directional IPs compete with GB storage and that the unequal treatment distorts cross border trade, the Modification 0621F solution is necessary to ensure GB compliance with:

* Tariffs for access to networks under Regulation (EC) No. 715/2009:

Article 13.1 of *Tariffs for access to networks* in Regulation (EC) 715/2009 which says *“Tariffs, or the methodologies used to calculate them, shall be applied in a non-discriminatory manner.”* And *“Tariffs, or the methodologies used to calculate them shall facilitate efficient gas trade and competition”*

And 13.2 which requires *”Tariffs for network access shall neither restrict market liquidity nor distort trade across borders of different transmission systems”*

* Commission Regulation (EU) 2017/460 (the Tariff Network or TAR Code)

Under Article 7(e), TSOs must ensure that the reference prices do not distort cross-border trade.

It should be noted that a discount for physically bi-directional IPs is entirely consistent with the Tariff Network Code given TSOs can make adjustments to the application of the reference price methodology in accordance with Article 6.4 or Article 9.

Under Article 6.4(a), TSOs can make adjustments to reference prices at any given entry or exit point to meet the competitive level of the reference price.

**Legislative compliance**

Some workgroup participants have requested clarification from National Grid on legislative compliance of the Modification proposal with reference to the Tariff Network Code. Specifically, there remain questions about use of commodity charging for some of the future implementation years of the Modification.

*[National Grid are to supply a response to the issues raised.]*

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| Workgroup Statement |
| Comparison to counterfactual (basic CDW) – see comparison table for comparison to 0621 (and alternatives). This justifies aspects of the 0621 proposals to make the CWD methodology work/prevent a massive under recovery.  Examples – Article 7 reference price methodology approach  Multipliers  Existing contracts and Article 35 interpretation (justification for different approaches/Mods)  OCC  Link to key issues on above to demonstrate compliance. |

**Table two - A summary of each Modification and the Proposer’s assessment against each Charging Methodology Relevant Objectives.**

The table below which provides a summary of the Proposer’s assessment against each Charging Methodology Relevant Objective. It also includes details of the version of the Modification (and the Relevant Objectives contained within it) have been considered as part of the Workgroup’s assessment of the Charging Methodology Relevant Objectives.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Relevant Objective** | **0621** | **0621A** | **0621B** | **0621C** | **0621D** | **0621E** | **0621F** | **0621H** | **0621J** | **0621K** | **0621L** |
| v4.0 (6/4/2018) | v3.0 (17/3/2018) | v4.0 (6/4/2018) | v4.0 (17/4/2018) | V4.0 (30/4/2018) | V2.0 (23/4/18) | v4.0 (13/4/2018) | v1.0 (2/3/2018) | v2.0 (10/4/2018) | v1.0 (26/4/2018) | v1.0 (26/4/2018) |
| **National Grid** | **Storengy** | **SSE** | **Centrica** | **WWU** | **Uniper** | **IUK** | **ENI** | **RWE** | **Gateway** | **Shell** |
| 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 | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive |
| aa) That, in so far as prices in respect of transportation arrangements are established by auction, either:  no reserve price is applied, or  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 | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | 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 | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | 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 | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | 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 | None | None | None | None | None | None | None | None | None | 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 | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive |

Workgroup Assessment of Impacts 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 – All Modifications |
| aa) That, in so far as prices in respect of transportation arrangements are established by auction, either:   1. no reserve price is applied, or 2. 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 – All Modifications |
| b) That, so far as is consistent with sub-paragraph (a), the charging methodology properly takes account of developments in the transportation business; | Positive – All Modifications |
| 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 – All Modifications |
| 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 – All Modifications |

**0621/0621B/0621D/0621E/0621F/0621H/0621J/0621K:**

This modification proposal does not conflict with:

1. *paragraphs 8, 9, 10 and 11 of Standard Condition 4B of the Transporter's Licence; or*
2. *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.

1. **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;**

**0621/0621D/0621E/0621H/0621J/0621L:** Proposers believe that the proposed utilisation of a new Reference Price Methodology which re-distributes National Grid’s costs on a geographic basis, weighted by capacity will enhance cost reflectivity and competition between gas suppliers and between gas shippers when compared to the current application of a Long Run Marginal Cost Methodology (LRMC). The proposed model is better suited to the current and expected future usage of the NTS and the current model is more suitable for an expanding network requiring an investment based RPM.

A sub-group of the NTS Charging Methodology Forum identified that as the inputs into the LRMC model are varied the resulting price changes are not intuitive and the changes can cause unpredictable results, and the changes to prices can be volatile (link to material). As a result, similar offtake points (in terms of offtake volumes and distances from points of entry) may incur materially different charges. Use of a methodology which delivers more comparable costs would better facilitate these objectives.

**0621A:** Storengy as proposer of 0621A believes that the proposal better reflects the costs incurred by the licensee. In particular, in relation to gas storage the application of an 86% discount combined with the non-application of Revenue Recovery Charges during the transition and enduring phases, better facilitates this objective. The requirement for a minimum 50% discount for storage related capacity in the EU Tariff Code insulates storage users from double charging and nothing more, however, given that storage facilities are embedded in the network and are unable to benefit from Optional Commodity Rates, its application results in a non-equitable allocation of costs.

As set out in the WWA paper (see footnote 8) the fact that flows to and from offtakes located close to storage facilities are cheaper, in terms of transportation costs, than the cost of flowing gas to the same offtakes, but via storage (including a 50% discount), suggests that a 50% discount is not cost reflective. The application of an 86% discount ensures that the costs incurred under these two flow scenarios are equivalent, and that the costs of transporting gas to and from storage are as cost reflective as the costs of transporting gas directly between non-storage entry points and non-storage exit points.

Further, the application of an 86% discount ensures that the benefits, or negative costs which are delivered by storage in terms of investment savings attributable to the transmission owner are to some degree represented in the cost of using storage (see WWA and Storengy reports, footnote 8).

The fact that the benefits of embedded entry points located within DN networks receive discounted DN transportation costs, or even credits, suggests that a discount which is set to singularly remove double charging is inconsistent with the approach taken in other pipeline networks. The additional level of discount provides a mechanism for recognising the benefits afforded by embedded entry points (and exit points) and is in line with the cost reflective charging methodologies approved and employed at the DN level

Finally, in relation to the application of Revenue Recovery Charges, the proposal recommends that no charges are applied to storage in either the transition or the enduring periods (note that Modification 0621 proposes that such charges should be applied to non-Historical Capacity holdings in the enduring period on a capacity top-up basis). Currently, storage flows are exempt from the application of TO Commodity Charges (the mechanism employed to recover revenues not recovered from the sale of capacity products). From 2019, Modification 0621 proposes the continuation of this approach. On the basis that it is accepted that storage flows and indeed storage related capacity bookings should not be double charged then it must be the case that whatever Revenue Recovery Charge mechanism is employed that storage users should be exempt from its application. This approach is consistent with the findings of Ofgem in its Gas Transmission Charging Review on the basis that flows to and from storage (or capacity booked at an entry to deliver gas to, or an exit point to ultimately offtake from) have already made a contribution to historical cost recovery (see WWA report footnote 8).

**0621B:** The Proposer believes that the proposed utilisation of a new Reference Price Methodology which redistributes National Grid’s costs on a geographic basis, weighted by capacity will enhance this objective compared to the current application of a Long Run Marginal Cost Methodology (LRMC) only when an NTS Optional Charge is employed.

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

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

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

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

**0621C:** The Capacity Weighted Distance (CWD) basis for allocating costs and setting reference prices is expected to provide a platform for more stable and predictable capacity reserve prices compared with the current Long Run Marginal Cost methodology. Some shortcomings with the CWD approach have been identified, in particular the production of some relatively high exit capacity prices close to some entry points. However, the inclusion of optional charging (or ‘shorthaul’) arrangements in this 0621C proposal provide a means of correcting such anomalies and provide a more intuitively correct outcome when considering the cost-reflectivity of the charges.

The current Long Run Marginal Cost (LRMC) reference price methodology was designed to provide economic signals on where it would be economic for customers to acquire capacity on the NTS, i.e. it provided locational price signals. This approach was relevant during the period when the network was expected to expand so that informed and efficient network usage would be encouraged. Today, however, expansion of the network is likely to be limited and gas demand has been following a generally downward trend in most recent years. Therefore, an LRMC approach is not best suited to the current usage and requirements of the NTS and will not provide such a relevant, cost-reflective approach to charging as it has in the past.

A new approach to paying for these costs, reflecting how the NTS is now used, is therefore required; a methodology that more fairly distributes costs among the users of the system and that recognises that historical decisions on how the network was developed over many years should not in future unduly dictate how charges are set in future. A Postage Stamp methodology has its appeal – it’s simple and generally equalises entry and exit charges for users. However, a Postage Stamp method could be considered a relatively extreme departure from an LRMC approach and would be a step too far at this point in time because there will remain some additional use of the NTS in future (witness the number of PARCA windows being opened) for which an element of locational price signal would remain relevant and cost-reflective.

A Capacity Weighted Distance (CWD) charging methodology sits somewhere between LRMC and Postage Stamp. It significantly flattens capacity charges across the range of entry points and range of exit points whilst still maintaining a degree of locational price signal. A CWD reference price methodology has therefore been adopted in this 0621C proposal to provide a balanced cost-allocation approach, one which recognises the changing use of the NTS yet one that retains some locational price signals. It is the view of the Proposer of 0621C that CWD provides a more reasonable basis for setting cost-reflective reference prices during this phase of the NTS’ life but it requires and relies on the addition of an Optional Charge (or ‘shorthaul’) solution to make it work.

The inclusion of a workable Optional Charge (or ‘shorthaul’) solution is critical to ensuring the cost-reflectivity of either a CWD or Postage Stamp methodology. Both of these Reference Price Methodologies would produce counter-intuitive capacity charges for some combinations of entry and exit points, 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 meaningful and enduring Optional Charge solution to resolve such anomalies in order to provide a holistic solution that results in cost-reflective charges. This 0621C Modification proposal provides such a solution with a new Optional Charge approach that is based on the cost allocation principles contained in the CWD reference price methodology. The result is a consistent, holistic solution that works for both the transitional period and, critically, for the enduring period without resort to any artificial restrictions such as ‘shorthaul’distance caps.

**0621F:** By removing double charging of bi-directional IP flows a market distortion will be removed. The solution ensures a level playing field for users of GB storage and seasonal flexibility via physically bi-directional IPs.

**0621K:** Gateway as proposer of 0621K believes that the proposal better reflects the costs incurred by the licensee. In particular, in relation to gas storage the application of an 86% discount combined with the non-application of Revenue Recovery Charges during the transition and enduring phases, better facilitates this objective. The requirement for a minimum 50% discount for storage related capacity in the EU Tariff Code insulates storage users from double charging and nothing more, however, given that storage facilities are embedded in the network and are unable to benefit from Optional Commodity Rates, its application results in a non-equitable allocation of costs, As set out in the WWA paper (see footnote 8) the fact that flows to and from offtakes located close to storage facilities are cheaper, in terms of transportation costs, than the cost of flowing gas to the same offtakes, but via storage (including a 50% discount), suggests that a 50% discount is not cost reflective. The application of an 86% discount ensures that the costs incurred under these two flow scenarios are equivalent, and that the costs of transporting gas to and from storage are as cost reflective as the costs of transporting gas directly between non-storage entry points and non-storage exit points.

Further, the application of an 86% discount ensures that the benefits, or negative costs which are delivered by storage in terms of investment savings attributable to the transmission owner are to some degree represented in the cost of using storage (see WWA and Storengy reports, footnote 8).

The fact that the benefits of embedded entry points located within DN networks receive discounted DN transportation costs, or even credits, suggests that a discount which is set to singularly remove double charging is inconsistent with the approach taken in other pipeline networks. The additional level of discount provides a mechanism for recognising the benefits afforded by embedded entry points (and exit points) and is in line with the cost reflective charging methodologies approved and employed at the DN level

Finally, in relation to the application of Revenue Recovery Charges, the proposal recommends that no charges are applied to storage in either the transition or the enduring periods (note that Modification 0621 proposes that such charges should be applied to non-Historical Capacity holdings in the enduring period on a capacity top-up basis). Currently, storage flows are exempt from the application of TO Commodity Charges (the mechanism employed to recover revenues not recovered from the sale of capacity products). From 2019, Modification 0621 proposes the continuation of this approach. On the basis that it is accepted that storage flows and indeed storage related capacity bookings should not be double charged then it must be the case that whatever Revenue Recovery Charge mechanism is employed that storage users should be exempt from its application. This approach is consistent with the findings of Ofgem in its Gas Transmission Charging Review on the basis that flows to and from storage (or capacity booked at an entry to deliver gas to, or an exit point to ultimately offtake from) have already made a contribution to historical cost recovery (see WWA report footnote 8).

The 100% discount for Off Peak capacity at storage Exit Points ensures that the cost of providing this capacity is correctly reflected in the product tariff. The combination of the level of revenue recovered via the application of tariffs on frim capacity products for a single pipeline which is used and paid for on a bi-directional basis with the use of this capacity during non-peak demand periods means that the cost of provision for National Grid is zero. In fact, it is argued by WWA and Storengy (see footnote 8) that the existence and symbiotic nature of the relationship between storage flows and aggregate demand results in investment savings for National Grid, which are not recognised in the charging methodology.

**0621L:** Where the distance matrix is an input to the RPM and assuming distance is a cost driver, excluding certain valid routes from the matrix (e.g., Milford Haven and Isle of Grain in the enduring period), changes the Weighted Average Distance of all points and makes the prices less reflective of the network flow scenarios and therefore less cost reflective. As these contracts expire these routes will be reintroduced in to the flow scenarios and the weighted average distance and consequently, price will change as a result of contract expiry. Including existing contracts in the CWD calculation ensures tariffs remain cost reflective and more predictable.

**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**

**0621/0621A/0621D/0621E/0621H/0621J/0621K/0621L:**

Proposers believe that the proposed utilisation of a new Reference Price Methodology which re-distributes National Grid’s costs on a geographic basis, weighted by capacity will enhance cost reflectivity and competition between gas suppliers and between gas shippers when compared to the current application of a Long Run Marginal Cost Methodology (LRMC). The proposed model is better suited to the current and expected future usage of the NTS and the current model is more suitable for an expanding network requiring an investment based RPM.

A sub-group of the NTS Charging Methodology Forum identified that as the inputs into the LRMC model are varied the resulting price changes are not intuitive and the changes can cause unpredictable results, and the changes to prices can be volatile (link to material). As a result, similar offtake points (in terms of offtake volumes and distances from points of entry) may incur materially different charges. Use of a methodology which delivers more comparable costs would better facilitate these objectives.

**0621A:** The application of an 86% discount and exemption from Revenue Recovery Charges for storage Users better achieves this objective. Firstly, as described in the Storengy and WWA reports (footnote 8) gas storage provides shippers with access to physical flexibility to manage any physical portfolio imbalances which occur for a variety of reasons. Gas storage is an essential tool for a large number of shippers which contract directly with storage operators, but also provides wider benefits to all shippers as a result of enhanced security of supply and well-understood, significant, positive externalities. These wider benefits dampen price volatility and reduce the likelihood of network constraints, gas deficit issues and cost escalation (see WWA and Storengy reports, footnote 8).

In terms of cost distribution, analysis carried out by WWA and presented at the 28 March Modification 0621 workgroup[[4]](#footnote-4) the impact on charges of applying an 86% discount is marginal. During the transition phase the entry Cxxxx Revenue Recovery Charge CRRC(applied to non-IPs) and the entry capacity top up charge (applied to IPs) does not increase when compared with a 50% discount. At exit, the exit CRRC increases by 0.98% and the IP exit capacity top-up charge increases by 0.54%. In the enduring phase (October 2021) there is no perceptible increase in capacity charges as a result of the increase of the discount from 50% to 86%. On this basis, there is no cross-subsidy between storage and non-storage users, beyond perhaps that as a result of the security of supply and broader societal benefits (externalities) non-storage users are net beneficiaries of the 86% discount.

### 0621B:

### Promoting Efficiency and Economic principles associated with network charging

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

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

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

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

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

### Basis for locational signals

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

The fact that CWD is not based on marginal costs does not necessarily mean it is inappropriate. Empirically, CWD may have desirable properties in the correct conditions such as stability and predictability. However, the absence of a marginal cost basis means the chances of it deviating from a reasonable estimate of “stable” marginal costs is non-trivial.  If it does so, economic theory suggests it will result in inefficient outcomes.  The same can be said for a capacity based Postage Stamp model too where there is not spare capacity everywhere. Therefore, the more revenue collection that is allocated to up front capacity charges, rather than residual commodity charges risks greater distortion, 0621B avoids this.

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

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

### Basis for revenue recovery

#### Objectives in relation to cost recovery

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

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

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

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

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

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

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

#### Capacity or commodity

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

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

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

Now contrast this to a capacity price with a uniform incremental element of £Y per unit of contracted capacity to recover revenue.

Having purchased capacity for a year, including this incremental element, the cost of capacity is sunk to a shipper.  They should use the capacity they have purchased whenever the price of gas at the NBP is greater than their cost (or opportunity cost) of gas.  They cannot pass through the cost of £Y to wholesale gas prices.

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

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

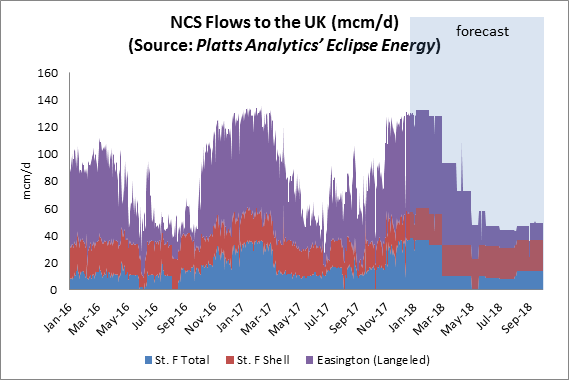
The higher capacity charges in Modification 0621 are less efficient than the 0621B charges as illustrated in the examples below:

**Increased costs to customers. Capacity Mechanism**

Risk of capacity substitution means that exit capacity at electricity generators may be purchased in advance. The increased capacity costs at exit will increase fixed costs that are bid into the electricity Capacity Mechanism Auction. Comparing 0621 with 0621B, post transition, and using Pembroke as an example would result in an increase In cost of [0.0326-0.0166 p/kwh/d] which equates to [£2.6 /kW] based on 96 GWh/day. If this plant were marginal and set the clearing price then, all else being equal, the increase in cost across a typical 50 GW auction volume would be [£130m/year] charged to and paid by increases to customer bills. There may be a fall in power cost of [£0.30 MWh] due to the reduction in TO commodity charges of [0.8 p/t]h. This could reduce power costs by [ £100 m/yr] resulting in a net increase in costs to power customers of [£30] m/yr.

**Increased costs to customers. More expensive NBP price**

St Fergus will have the most expensive entry capacity charge in a 0621 Enduring capacity only regime at [0.0783] p/pkWh/day. St Fergus currently receives gas every day from Norway as shown below.



In the future, if flows are incremental and discretionary on the day, then all else being equal, one can expect the marginal capacity cost to feed into the cost of wholesale gas at the NBP.  The difference between 0621 and 0621B, post transition, including commodity revenue recovery charge is.[0.0783-(0.0545) = 0.0238] p/kWh/d. Applied to annual gas demand of 900 TWh.

[https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/632523/Chapter\_4.pdf](https://protect-eu.mimecast.com/s/ihGyCpYjMcLZBjHJK9su)

This equals a cost increase of [£214m]/year to customers.

**Increased costs to customers. More expensive DN capacity charge**

After the Transition period, higher capacity charges for DNs in 0621 compared with 0621B will increase charges to domestic customers. Although this will be offset to a degree by a reduction in flow based revenue recovery charges the higher fixed costs will have a disproportionate effect on low use, vulnerable energy customers.

**0621C (aa) (II)):** 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.

**0621F:** By removing double charging of bi-directional IP flows a market distortion will be removed. The solution ensures a level playing field for users of GB storage and seasonal flexibility via physically bi-directional IPs.

**0621K:** The application of an 86% discount and exemption from Revenue Recovery Charges for storage users better achieves this objective. Firstly, as described in the Storengy and WWA reports (footnote 8) gas storage provides shippers with access to physical flexibility to manage any physical portfolio imbalances which occur for a variety of reasons. Gas storage is an essential tool for a large number of shippers which contract directly with storage operators, but also provides wider benefits to all shippers as a result of enhanced security of supply and well-understood, significant, positive externalities. These wider benefits dampen price volatility and reduce the likelihood of network constraints, gas deficit issues and cost escalation (see WWA and Storengy reports, footnote 8).

In terms of cost distribution, analysis carried out by WWA and presented at the 28 March Modification 0621 Workgroup[[5]](#footnote-5) the impact on charges of applying an 86% discount is marginal. During the transition phase the entry CRRC (applied to non-IPs) and the entry capacity top up charge (applied to IPs) does not increase when compared with a 50% discount. At exit, the exit CRRC increases by 0.98% and the IP exit capacity top-up charge increases by 0.54%. In the enduring phase (October 2021) there is no perceptible increase in capacity charges as a result of the increase of the discount from 50% to 86%. On this basis, there is no cross-subsidy between storage and non-storage users, beyond perhaps that as a result of the security of supply and broader societal benefits (externalities) non-storage users are net beneficiaries of the 86% discount.

With regards to the proposed 100% discount for Off Peak capacity, as has been previously stated, storage facilities ability to cycle and hence, provide flexible gas will be significantly impacted if this product attracts the proposed charge in Modification 0621. This reduction in availability of flexible gas will add to Suppliers costs, increase price volatility which will ultimately be passed on to consumers, In the extreme, security of supply issues may arise should a supply or demand stress impact the market when storage levels are depleted.

In terms of inter-User costs, the following data has been extracted from the CWD Model v2.2. Assuming an 86% discount, in the enduring regime the average cost per unit of Off Peak capacity is 0.00226 p/kwh (0.066 p/th). The model assumes a level of Off Peak capacity booking for storage Exit Points (and all Exit Points) of @73 GWh/d. At the same time it assumes a total storage Exit Capacity booking of 141 GWh/d (combined firm and interruptible). Historical bookings are 1,379 GWh/d and Obligated levels are 621 GWh/d.

If it is assumed that Historical flows (which feeds the Enduring Exit Capacity booking scenario) is a reasonable proxy for future flows and bookings (albeit it is likely to be conservative in the opinion of the Proposer) then total annual bookings are @52 TWh/yr. With an aggregate storage working gas volume of @14TWh (figure estimated by Storengy & Gateway), this suggests that storage cycle 3 times per year, on average. Again, this is based on historical data and the Proposer expects that the cycling frequency will increase in future. Using the average tariff for Off Peak capacity, with an 86% discount for storage, the overall increased cost burden for storage Users equates to £1.15m per year (assuming that all 52 TWh of Exit Capacity bookings are Off Peak). For reference purposes, the average cost of Off Peak capacity at storage Exit Points, under Mod 621 with a 50% discount , is 0.008 p/kwh/d (0.234 p/th). This generates a total cost burden of £4.1m per year for the same level of Exit Capacity booking as described above.

In summary, a combination of an 86% discount on capacity prices and a 100% discount for Off Peak capacity at storage Exit Points will result in an increased cost to non-storage Users of approx. £1.15m per annum in the enduring regime.[[6]](#footnote-6) This will be recovered via an adjustment to the initial reserve prices.

This small additional cost (noting the overall revenue allowance of £424m) is more than offset by the benefits which accrue to all Users of the operation of storage. Without access to Off Peak capacity with a 100% discount storage facilities will cycle less, which in turn will place upward pressure on gas prices as described previously. The cycling of storage is highly price-sensitive; an Exit Price higher than the current Off-Peak arrangements will limit the ability for storage users to “capture” market spreads and inevitably reduce the amount capacity bookings. As a result the real net impact of a 100% discount on TO Revenue will actually be lower than the figure calculated above

**0621L:** Where the distance matrix is an input to the RPM and assuming distance is a cost driver, excluding certain valid routes from the matrix (e.g., Milford Haven and Isle of Grain in the enduring period), changes the Weighted Average Distance of all points and makes the prices less reflective of the network flow scenarios and therefore less cost reflective. As these contracts expire these routes will be reintroduced in to the flow scenarios and the weighted average distance and consequently, price will change as a result of contract expiry. Including existing contracts in the CWD calculation ensures tariffs remain cost reflective and more predictable.

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

**0621/0621D/0621E/0621F/0621H/0621J/0621L:** The update to the Transmission Services methodology proposal takes into account developments which have taken place in the transportation business, in particular that the network is no longer expanding.

**0621A:** The update to the Transmission Services methodology proposal takes into account developments which have taken place in the transportation business, in particular that the network is no longer expanding. The development of storage assets connected to the transmission grid has also been factored into the WWA analysis presented at the 28 March Workgroup (see footnote 9). Considering the lead time required for the development of such assets, assumptions on storage flows for the modelling of the impact of a discount of 86% on the CRRC capacity top up charges are robust for 5 years, at the very minimum.

**0621B:** The update to the Transmission Services methodology proposal takes into account developments which have taken place in the transportation business. Given the future uncertainty over sources of supply and variable demand on any given day the hybrid approach to CWD charging in 0621B provides an element of forward looking marginal price signals and recovery of allowed revenue for NG on a fair, non-discriminatory basis, where users pay for the benefits they obtain by using the network. The RPI indexation applied to the NTS Optional Charge also furthers this Objective.

**0621C:** 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 proposal 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.

**0621D:** The proposer believes that this premise will require National Grid to make changes to its policy on the availability of flexible capacity and its reinforcement policy otherwise there is an inconsistency between a charging methodology that assumes an unconstrained network and polices on flexible capacity and reinforcement that assert that capacity is constrained.

**0621K:** The update to the Transmission Services methodology proposal takes into account developments which have taken place in the transportation business, in particular that the network is no longer expanding. Storage has reduced the need for network expansion and its operation will continue to support the operation on the gas network going forward. The discount package reflects the benefits provided by storage to the transportation business and will limit the requirement for future investment in the network. This is particularly the case if current trends continue, resulting in further demand for system flexibility, as opposed to any growth in peak demand.

1. **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**

**0621/0621A/0621D/0621E/0621F/0621H/0621J/0621K/0621L:** Proposers believe that the proposed utilisation of a new Reference Price Methodology which re-distributes National Grid’s costs on a geographic basis, weighted by capacity will enhance cost reflectivity and competition between gas suppliers and between gas shippers when compared to the current application of a Long Run Marginal Cost Methodology (LRMC). The proposed model is better suited to the current and expected future usage of the NTS and the current model is more suitable for an expanding network requiring an investment based RPM.

A sub-group of the NTS Charging Methodology Forum identified that as the inputs into the LRMC model are varied the resulting price changes are not intuitive and the changes can cause unpredictable results, and the changes to prices can be volatile. As a result, similar offtake points (in terms of offtake volumes and distances from points of entry) may incur materially different charges. Use of a methodology which delivers more comparable costs would better facilitate these objectives.

**0621A:** The application of an 86% discount and exemption from Revenue Recovery Charges for storage users better achieves this objective. Firstly, as described in the Storengy and WWA reports (footnote 8) gas storage provides shippers with access to physical flexibility to manage any physical portfolio imbalances which occur for a variety of reasons. Gas storage is an essential tool for a large number of shippers which contract directly with storage operators, but also provides wider benefits to all shippers as a result of enhanced security of supply and well-understood, significant, positive externalities. These wider benefits dampen price volatility and reduce the likelihood of network constraints, gas deficit issues and cost escalation (see WWA and Storengy reports, footnote 8).

In terms of cost distribution, analysis carried out by WWA and presented at the 28 March Modification 0621 Workgroup[[7]](#footnote-7) the impact on charges of applying an 86% discount is marginal. During the transition phase the entry CRRC (applied to non-IPs) and the entry capacity top up charge (applied to IPs) does not increase when compared with a 50% discount. At exit, the exit CRRC increases by 0.98% and the IP exit capacity top-up charge increases by 0.54%. In the enduring phase (October 2021) there is no perceptible increase in capacity charges as a result of the increase of the discount from 50% to 86%. On this basis, there is no cross-subsidy between storage and non-storage users, beyond perhaps that as a result of the security of supply and broader societal benefits (externalities) non-storage users are net beneficiaries of the 86% discount.

**0621B:** To minimise the impact of competitive distortion described above a flow based commodity revenue recovery charge is preferable to high capacity based charges as would be the case in 0621B. Particularly, it avoids reduced supply competition and reduced security of supply due to storage curtailment from increased capacity costs.

Even with an 86 % discount to storage capacity costs and exemption from all enduring revenue recovery charges and non-transmission charges, overall transportation charges will increase for Hornsea and Aldbrough storage assets in 0621 and 0621J, post transition, compared with 0621B, this has 2 impacts:

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

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

### Note: the following text is the same as used under Relevant Objective aa.

### Promoting Efficiency and Economic principles associated with network charging

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

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

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

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

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

### Basis for locational signals

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

The fact that CWD is not based on marginal costs does not necessarily mean it is inappropriate. Empirically, CWD may have desirable properties in the correct conditions such as stability and predictability. However, the absence of a marginal cost basis means the chances of it deviating from a reasonable estimate of “stable” marginal costs is non-trivial.  If it does so, economic theory suggests it will result in inefficient outcomes.  The same can be said for a capacity based Postage Stamp model too where there is not spare capacity everywhere. Therefore, the more revenue collection that is allocated to up front capacity charges, rather than residual commodity charges risks greater distortion, 0621B avoids this.

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

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

### Basis for revenue recovery

#### Objectives in relation to cost recovery

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

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

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

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

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

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

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

#### Capacity or commodity

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

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

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

Now contrast this to a capacity price with a uniform incremental element of £Y per unit of contracted capacity to recover revenue.

Having purchased capacity for a year, including this incremental element, the cost of capacity is sunk to a shipper.  They should use the capacity they have purchased whenever the price of gas at the NBP is greater than their cost (or opportunity cost) of gas.  They cannot pass through the cost of £Y to wholesale gas prices.

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

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

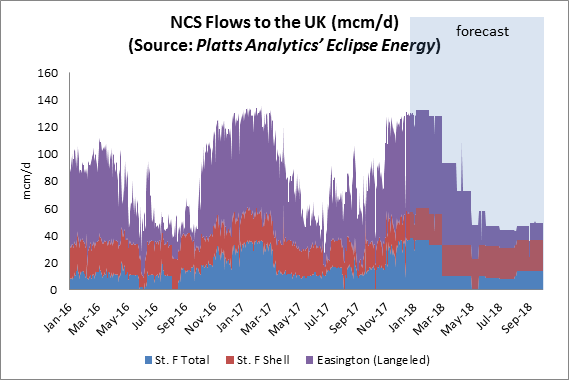
The higher capacity charges in Modification 0621 are less efficient than the 0621B charges as illustrated in the examples below:

**Increased costs to customers. Capacity Mechanism**

Risk of capacity substitution means that exit capacity at electricity generators may be purchased in advance. The increased capacity costs at exit will increase fixed costs that are bid into the electricity Capacity Mechanism Auction. Comparing 0621 with 0621B, post transition, and using Pembroke as an example would result in an increase In cost of [0.0326-0.0166 p/kwh/d] which equates to [£2.6 /kW] based on 96 GWh/day. If this plant were marginal and set the clearing price then, all else being equal, the increase in cost across a typical 50 GW auction volume would be [£130m/year] charged to and paid by increases to customer bills. There may be a fall in power cost of [£0.30 MWh] due to the reduction in TO commodity charges of [0.8 p/t]h. This could reduce power costs by [ £100 m/yr] resulting in a net increase in costs to power customers of [£30] m/yr.

**Increased costs to customers. More expensive NBP price**

St Fergus will have the most expensive entry capacity charge in a 0621 Enduring capacity only regime at [0.0783] p/pkWh/day. St Fergus currently receives gas every day from Norway as shown below.



In the future, if flows are incremental and discretionary on the day, then all else being equal, one can expect the marginal capacity cost to feed into the cost of wholesale gas at the NBP.  The difference between 0621 and 0621B, post transition, including commodity revenue recovery charge is.[0.0783-(0.0545) = 0.0238] p/kWh/d. Applied to annual gas demand of 900 TWh.

[https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/632523/Chapter\_4.pdf](https://protect-eu.mimecast.com/s/ihGyCpYjMcLZBjHJK9su)

This equals a cost increase of [£214m]/year to customers.

**Increased costs to customers. More expensive DN capacity charge**

After the Transition period, higher capacity charges for DNs in 0621 compared with 0621B will increase charges to domestic customers. Although this will be offset to a degree by a reduction in flow based revenue recovery charges the higher fixed costs will have a disproportionate effect on low use, vulnerable energy customers.

**0621C:** 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. The proposed discount for storage facilities will help to ensure that these important assets can remain economically viable and provide gas shippers with options for efficiently attracting and delivering gas to the market. The retention of these facilities will also help to encourage competition.

**0621F:** The proposer believes effective competition will be enhanced through the equal charging treatment of storage and physically bi-directional interconnection points. It will remove a market distortion for shippers using continental storage via the interconnectors to meet GB’s seasonal flexibility. It will create more of a level playing field for different sources of seasonal flexibility available to shippers, and ultimately to GB consumers. It increases the choice of shippers when procuring seasonal flexibility - they can consider Continental Storage accessed via physically bi-directional IPs or GB-located storage, without the distortion of differential National Grid charges.

This is particularly relevant to the GB market and GB consumers following the closure of the Rough storage facility. It is widely recognised that the GB market now has a relatively low level of seasonal storage within national boundaries. Improved access to Continental Storage, on a levelized and competitive charging basis, would be a step in the right direction to meet the market’s current structural needs.

**0621K:** The application of an 86% discount and exemption from Revenue Recovery Charges for storage users better achieves this objective. Firstly, as described in the Storengy and WWA reports (footnote 8) gas storage provides shippers with access to physical flexibility to manage any physical portfolio imbalances which occur for a variety of reasons. Gas storage is an essential tool for a large number of shippers which contract directly with storage operators, but also provides wider benefits to all shippers as a result of enhanced security of supply and well-understood, significant, positive externalities. These wider benefits dampen price volatility and reduce the likelihood of network constraints, gas deficit issues and cost escalation (see WWA and Storengy reports, footnote 8).

In terms of cost distribution, analysis carried out by WWA and presented at the 28 March Modification 0621 Workgroup[[8]](#footnote-8) the impact on charges of applying an 86% discount is marginal. During the transition phase the entry CRRC (applied to non-IPs) and the entry capacity top up charge (applied to IPs) does not increase when compared with a 50% discount. At exit, the exit CRRC increases by 0.98% and the IP exit capacity top-up charge increases by 0.54%. In the enduring phase (October 2021) there is no perceptible increase in capacity charges as a result of the increase of the discount from 50% to 86%. On this basis, there is no cross-subsidy between storage and non-storage users, beyond perhaps that as a result of the security of supply and broader societal benefits (externalities) non-storage users are net beneficiaries of the 86% discount.

With regards to the proposed 100% discount for Off Peak capacity, as has been previously stated, storage facilities ability to cycle and hence, provide flexible gas will be significantly impacted if this product attracts the proposed charge in Modification 0621. This reduction in availability of flexible gas will add to Suppliers costs, increase price volatility which will ultimately be passed on to consumers, In the extreme, security of supply issues may arise should a supply or demand stress impact the market when storage levels are depleted.

In terms of inter-User costs, the following data has been extracted from the CWD Model v2.2. Assuming an 86% discount, in the enduring regime the average cost per unit of Off Peak capacity is 0.00226 p/kwh (0.066 p/th). The model assumes a level of Off Peak capacity booking for storage Exit Points (and all Exit Points) of @73 GWh/d. At the same time it assumes a total storage Exit Capacity booking of 141 GWh/d (combined firm and interruptible). Historical bookings are 1,379 GWh/d and Obligated levels are 621 GWh/d.

If it assumed that Historical flows (which feeds the Enduring Exit Capacity booking scenario) is a reasonable proxy for future flows and bookings (albeit it is likely to be conservative in the opinion of the Proposer) then total annual bookings are @52 TWh/yr. With an aggregate storage working gas volume of @14TWh (figure estimated by Storengy & Gateway), this suggests that storage cycle 3 times per year, on average. Again, this is based on historical data and the Proposer expects that the cycling frequency will increase in future. Using the average tariff for Off Peak capacity, with an 86% discount for storage, the overall increased cost burden for storage Users equates to £1.15m per year (assuming that all 52 TWh of Exit Capacity bookings are Off Peak). For reference purposes, the average cost of Off Peak capacity at storage Exit Points, under Mod 621 with a 50% discount , is 0.008 p/kwh/d (0.234 p/th). This generates a total cost burden of £4.1m per year for the same level of Exit Capacity booking as described above.

In summary, a combination of an 86% discount on capacity prices and a 100% discount for Off Peak capacity at storage Exit Points will result in an increased cost to non-storage Users of approx. £1.15m per annum in the enduring regime.[[9]](#footnote-9) This will be recovered via an adjustment to the initial reserve prices.

This small additional cost (noting the overall revenue allowance of £424m) is more than offset by the benefits which accrue to all Users of the operation of storage. Without access to Off Peak capacity with a 100% discount storage facilities will cycle less, which in turn will place upward pressure on gas prices as described previously. The cycling of storage is highly price-sensitive; an Exit Price higher than the current Off-Peak arrangements will limit the ability for storage users to “capture” market spreads and inevitably reduce the amount capacity bookings. As a result the real net impact of a 100% discount on TO Revenue will actually be lower than the figure calculated above

**0621L:** Where the distance matrix is an input to the RPM and assuming distance is a cost driver, excluding certain valid routes from the matrix (e.g., Milford Haven and Isle of Grain in the enduring period), changes the Weighted Average Distance of all points and makes the prices less reflective of the network flow scenarios and therefore less cost reflective. As these contracts expire these routes will be reintroduced in to the flow scenarios and the weighted average distance and consequently, price will change as a result of contract expiry. Including existing contracts in the CWD calculation ensures tariffs remain cost reflective and more predictable.

**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.**

**0621/0621A/0621D/0621E/0621F/0621J/0621K/0621L:** The EU Tariff Code compliance is taken into account in these Modification proposals. Accordingly, implementation of these Proposals would ensure that the GB arrangements are compliant with the EU Tariff Code.[[10]](#footnote-10)

**0621B:** The proposer of 0621B believes the Modification is fully compliant with the Commission Regulation (EU) 2017/460, of 16 March 2017, establishing a network code on harmonised transmission tariff structures for gas. One area that may benefit from further clarification is Article 4(3), Transmission and non-transmission services and tariffs.

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

* the complementary revenue recovery charge shall be :

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

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

There is a reference to the application of a commodity based transmission tariff being potentially permitted for a part of the transmission services.  Whilst this is a matter of interpretation (“part” could mean the entire part for example) this suggests that a commodity based transmission tariff would be used together with a capacity based transmission tariff, as is the intention of 0621B.

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

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

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

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

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

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

**0621C:** The proposed new charging methodology has been derived by taking account of the various provisions of the EU Tariff network code to ensure compliance with it. It strikes an appropriate balance between those code provisions whilst also ensuring that the transition from the current to the new charging regime can be effected in a way that provides users with some time to adjust to the new charging arrangements before the full suite of enduring provisions come into force. The proposed methodology adequately protects existing contractual rights and obligations, especially in respect of Historical entry capacity contracts..

**0621F:** Key objectives of the third energy package are to facilitate efficient gas trade and competition across borders. Given that physically bi-directional IPs compete with GB storage and that the unequal treatment distorts cross border trade, the proposer believes the Modification 0621F solution is necessary to ensure GB compliance with:

* Tariffs for access to networks under Regulation (EC) No 715/2009:

Article 13.1 of *Tariffs for access to networks* in Regulation (EC) 715/2009 which says *“Tariffs, or the methodologies used to calculate them, shall be applied in a non-discriminatory manner.”* And *“Tariffs, or the methodologies used to calculate them shall facilitate efficient gas trade and competition”*

And 13.2 which requires *”Tariffs for network access shall neither restrict market liquidity nor distort trade across borders of different transmission systems”*

* Commission Regulation (EU) 2017/460 (the TAR Code)

Under Article 7(e), TSOs must ensure that the reference prices do not distort cross-border trade.

It should be noted that a discount for physically bi-directional IPs is entirely consistent with the TAR Code given TSOs can make adjustments to the application of the reference price methodology in accordance with Article 6.4 or Article 9.

Under Article 6.4(a), TSOs can make adjustments to reference prices at any given entry or exit point to meet the competitive level of the reference price.

**0621H:** The 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, including a proper application of article 35 thereof.

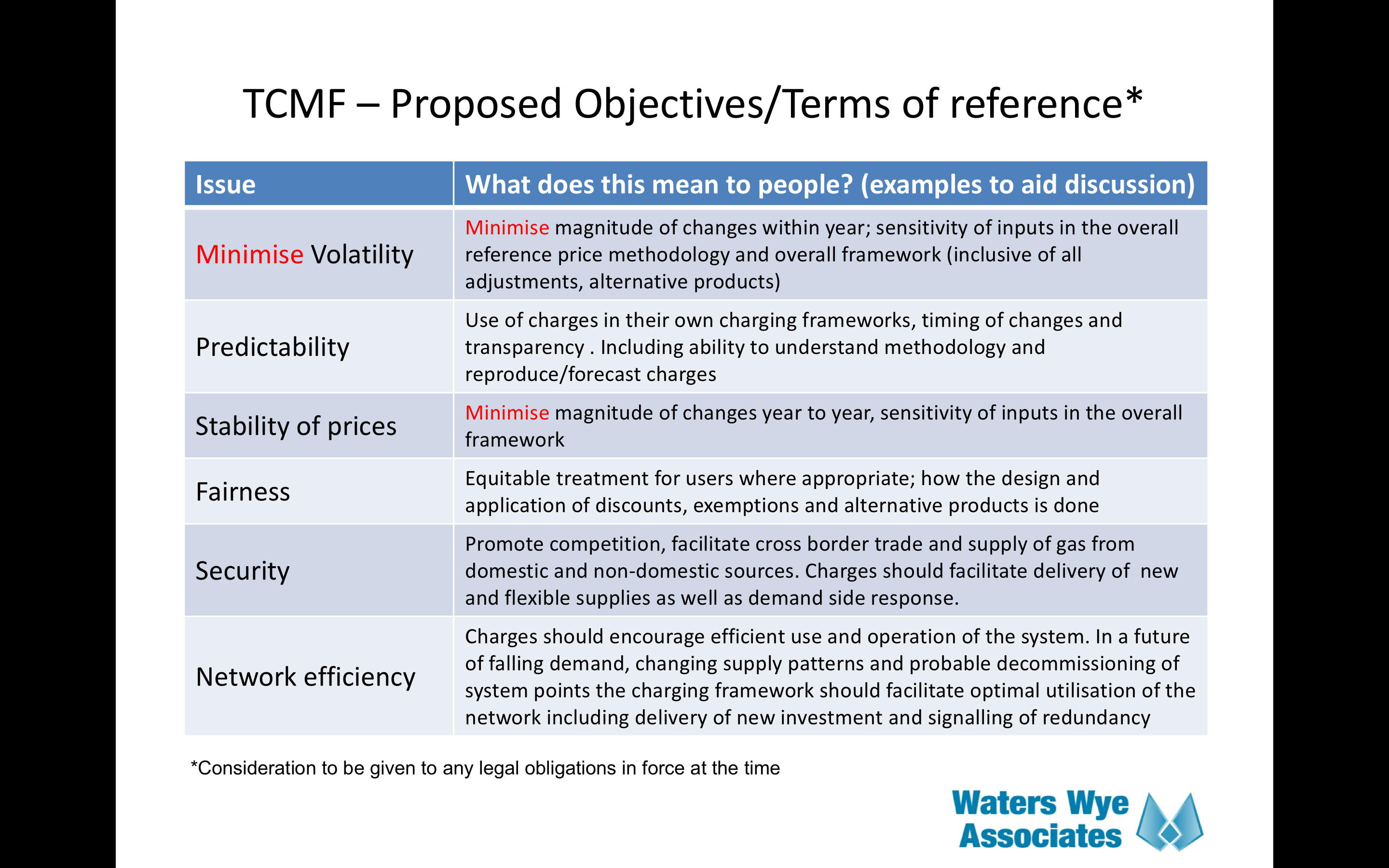
**0621L:** TAR NC Article 6.3 states that the same reference price methodology shall be applied to all entry and exit points in a given entry-exit system, subject to the exceptions set out in Articles 10 and 11 [these articles are not relevant to GB]. Including existing contracts for exit reference price calculations and entry reference price calculations ensures the proposal is compliant with this Article.  
TAR NC Article 6.4: Adjustments to the application of the reference price methodology to all entry and exit points may only be made in accordance with Article 9 [specific capacity discounts e.g. storage] or as a result of one or more of the following [benchmarking, equalisation, scaling] – adjusting data inputs by netting off existing contracts is inconsistent with this. Moreover, where existing contracts are netted off and the model results in a zero price, using the price from the nearest point, which in the case of entry points can be a considerable distance, represents an adjustment to the application of the reference price, which is not in accordance with this Article. Including existing contracts in the FCC and RPM resolves these issues and ensures the proposal is NC TAR compliant.

TAR NC Article 7(b) & (e) The reference price methodology shall comply with Article 13 of Regulation (EC) No 715/2009 and…shall aim at: b) taking into account the actual costs incurred for the provision of transmission services considering the level of complexity of the transmission network – by including existing contracts in the RPM and FCC, reference prices will reflect costs incurred.

Stakeholder Objectives

[Reference to Customer/stakeholder objectives developed within NTSCMF]

* *Minimise Volatility*
* *Predictability*
* *Stability of prices*
* *Fairness*
* *Security*
* *Network Efficiency*



(discussed at Sept and Oct 2016 NTSCMF)

<https://www.gasgovernance.co.uk/sites/default/files/ggf/NTS%20Charging%20Review%20Objectives%20v3%20%28from%20WWA%29.pdf>

Impacts and Other Considerations

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

These Modifications do not impact a current SCR.

Most Workgroup participants and many UNC Panel Members considered Modification 0621 should itself have been presented as a Significant Code Review.

#### 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. Further information can be found on this topic within the section on relevant objectives since Relevant Objective g) covers “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”.

#### Central Systems Impacts

There will be impacts on Gemini and UK Link invoicing systems.

The Workgroup requested an update from Xoserve, the CDSP which was communicated to Workgroup on 20 April 2018. Analysis of system changes associated to Part B of the National Grid led GB/EU Charging 2019 project will start at the end of April 2018. This analysis stage will take approximately two months to complete and will consider the 0621 Modification (and its alternatives) alongside other associated requirements, (however it should be noted that any system changes arising from the alternative Modifications will require scope assessments in terms of timescales and cost). At the end of this stage the change implications (additional to the original Modification 0621) of each of the Modifications will be understood, enabling a set of baselined requirements to be taken into the build phase of the project.

A March 2019 Authority decision as to which Modification is to be implemented means National Grid and Xoserve will need to progress build and test activities at risk. This approach is consistent with previous EU changes (2015) where Xoserve needed to be mindful of timescales and delivery due to compliance. Change of scope will be considered as the team moves through the project lifecycle, the closer to the implementation date any final decision are made could impact costs and user impacts.

National Grid Transmission continues to work closely with Xoserve to agree and progress appropriate risk mitigations.

Progress of the GB/EU Charging 2019 project will be routinely communicated to the industry within the DSC Change Management Committee in conjunction with National Grid Transmission Business Change project updates in order to ensure parties are kept fully informed.

Implementation

Whichever of these Modifications is implemented and the resulting methodology change will take effect for prices from October 2019, in order to achieve compliance with the EU Tariff Code.

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

Workgroup Conclusions

Overall Workgroup conclusions

In light of the Ofgem Direction on National Grid Gas, dated 08 March 2018, Workgroup understood the need to send the Workgroup report to April UNC Modification Panel for consideration. However, many Workgroup participants were concerned that the timescales allowed for consideration of the impact assessments were not sufficient to complete a robust assessment.

Workgroup therefore asks Panel to consider whether the Workgroup report can be sent out for consultation.

Workgroup recommendation for further analysis and assessment

[Workgroup participants strongly recommend that Ofgem considers inclusion of the following questions and topics in its Regulatory Impact assessment:

* The Impact of Modification 0621 and any alternatives need to be assessed against the counterfactual of the current methodology. – what is the current methodology at the time of final modification report submission?
* The impact on the GB gas market in terms of:
  + NBP liquidity (Impact on the volatility and price); including in relation to other hubs in North-West Europe, especially TTF;
  + GB competitiveness in relation to North-West European markets;
  + Wholesale prices, including volatility and risk of extreme prices;
  + Wholesale market competition;
  + Competition in supply.
  + Attractiveness of GB as a destination for gas, within EU and globally;
  + Security of Supply and price;
  + Impact on the availability of flexible gas and on the operation of the NTS;
  + Impact on gas balancing costs.
* Impact on the volatility and price level of the electricity market
* Impact on Security of Supply and on required network investment to pass N-1 test
* Cross market impacts with electricity; impact on volatility and prices for wholesale electricity, capacity mechanism, balancing costs and any issues arising from different approaches to charging
* Environmental impacts, if any?]

Recommendations to Panel

Workgroup therefore asks Panel to consider

Appendix 1: Impacts of Proposal on NTS Capacity Auctions



1. Link to FCC paper.<https://www.gasgovernance.co.uk/sites/default/files/ggf/Forecasting%20Contracted%20Capacity%20v0%205_0.pdf> [↑](#footnote-ref-1)
2. WWA and Storengy papers can be found here. https://www.gasgovernance.co.uk/ntscmf/170717 [↑](#footnote-ref-2)
3. WWA and Storengy papers can be found here. <https://www.gasgovernance.co.uk/ntscmf/170717> [↑](#footnote-ref-3)
4. <https://www.gasgovernance.co.uk/0621/280318> [↑](#footnote-ref-4)
5. <https://www.gasgovernance.co.uk/0621/280318> [↑](#footnote-ref-5)
6. Note that in the transition period the cost will be far lower due to the reduced reserve price levels [↑](#footnote-ref-6)
7. <https://www.gasgovernance.co.uk/0621/280318> [↑](#footnote-ref-7)
8. <https://www.gasgovernance.co.uk/0621/280318> [↑](#footnote-ref-8)
9. Note that in the transition period the cost will be far lower due to the reduced reserve price levels [↑](#footnote-ref-9)
10. The proposer of 0621D accepts National Grid’s statement but understands that not all the proposals in 0621 are required for EU Tariff Code compliance and that a clear statement of which parts are required would be helpful. This would be particularly useful if the Authority decided to direct implementation of those provisions required for EU Tariff Code compliance [↑](#footnote-ref-10)