

0621 and Alternatives

Relevant Objectives Drafting Document

Once finalised this document will form part of the UNC 0621 Workgroup Report. The document contains all the current Relevant Objectives as proposed in 0621 and all the Alternative Modifications.

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 will change to indicate that the Relevant Objective is 'impacted'. Where the Workgroup has differing views to that proposed in the Modification, the Workgroup Report will capture 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 will be 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.

This document contains the following:

- a. Table one which provides a summary of each Modification and the Proposer's assessment against each Relevant Objective.
- b. Draft Workgroup Assessment against the Relevant Objectives
- c. Table two - which provides a summary of each Modification and the Proposer's assessment against each Charging Methodology Relevant Objectives.
- d. Draft Workgroup Assessment against the Charging Methodology Relevant Objectives.

Table one - A summary of each Modification and the Proposer's assessment against each Relevant Objective.

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)	v3.0 (18/4/2018)	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	None	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	None
f) Promotion of efficiency in the implementation and administration of the Code.	None	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	Positive

1 Relevant Objectives – Workgroup Assessment

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/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

Demonstration of how the Relevant Objectives are furthered:

a) 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.¹ 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

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¹ WWA and Storengy papers can be found here. <https://www.gasgovernance.co.uk/ntscmf/170717>

gas storage provides direct support to National Grid in its role as system balancer through; contributing to linepack management and reduced activity and costs associated with National Grid's participation in the balancing market (OCM) or any other contractual arrangements it may choose to enter into as part of its network balancing toolbox.

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

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.

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0621C: The whole charging package contained in this proposal 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 short-haul). Without short-haul 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.

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At the same time, this Proposal recognises that the current level of short-haul 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 **TC** short-haul charging methodology and thus providing a robust, enduring basis for dis-incentivising inefficient NTS by-pass.

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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.² 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 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 members 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].

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² WWA and Storengy papers can be found here. <https://www.gasgovernance.co.uk/ntscmf/170717>

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 out 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.

<u>Workgroup Statement</u>

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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?

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d) Securing of effective competition between relevant shippers;

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 NG using a methodology that is yet to be defined and exposed to annual change. More predictable and stable charges will facilitate competition because, all else being equal, greater cost certainty will lower risk and will result in lower cost of capital for Shippers which will reduce barriers to entry and facilitate competition. Therefore, a stable Forecasted Contracted Capacity (FCC) based on Obligated baseline values in the licence is expected to improve competition compared with an FCC based on forecasts.

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.

Our Optional Charge/ short-haul solution will allow shippers to compete more effectively at proximate offtakes, including power stations, without having to build their own (inefficient) bypass 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 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.

[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.

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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 Mod 0621, NGG 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 Mod 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 NGG's Mod 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 NGG's proposal, if implemented would set a new precedent. Moves between transmission charging models in the past has 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 Mod621F 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.

Legislative compliance

Some workgroup participants have requested clarification from National Grid on legislative compliance of the Modification proposal with reference to TAR NC. 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.]

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.

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)	v3.0 (3/4/2018)	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	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive

developments in the transportation business;											
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

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: (i) no reserve price is applied, or (ii) that reserve price is set at a level - (I) best calculated to promote efficiency and avoid undue preference in the supply of transportation services; and (II) best calculated to promote competition between gas suppliers and between gas shippers;	Positive – 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

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0621/0621B/0621D/0621E/0621F/0621H/0621J/0621K; This modification proposal does not conflict with:

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

Demonstration of how the Relevant Objectives are furthered:

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- 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;**

0621B: 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.

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Commented [c5]: Does the key issues discussion support this view of not? CWD can impact on sites on the extremities of the network and in some proposers view the OCC helps mitigate these impacts.

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

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

A hybrid CWD methodology which seeks to retain an element of flow based charges will be more cost reflective and have a less distortive effect than a pure capacity based recovery regime which exacerbates the unintended consequences described above and in Relevant Objectives aa) (l) 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 short-haul) arrangements in this 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 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 that CWD provides a more reasonable basis for setting cost-reflective reference prices during this phase of the NTS's life but it requires and relies on the addition of an Optional Charge (or short-haul) solution to make it work.

The inclusion of a workable Optional Charge (or short-haul) 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 IUK 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 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 short-haul distance caps.

0621K: Gateway 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 Mod 621 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, Mod 621 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 firm 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.

- 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**

0621A: Storengy 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

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

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

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

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

Basis for locational signals

CWD is not a marginal cost based methodology. It is a way of allocating total costs 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, 621B avoids this.

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

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

Basis for revenue recovery

Objectives in relation to cost recovery

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

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

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

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

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

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

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

Capacity or commodity

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

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

Each shipper will face the same charge of £X for each MWh of gas they move through the entry point. Therefore, when considering the price at which they would sell gas at the NBP, each shipper's

cost would be £X higher per MWh than it otherwise would be. Compared to the situation with no commodity charge at entry, NBP prices should be expected to be £X/MWh higher. In other words, the entry commodity charge has been 100% passed through to buyers at the NBP. As a result, there has been no change in the competitive position of any shipper, and there should be no change to the way in which gas is supplied to GB customers. If the supply mix was efficient before the charge, it would be as efficient after the charge.

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.

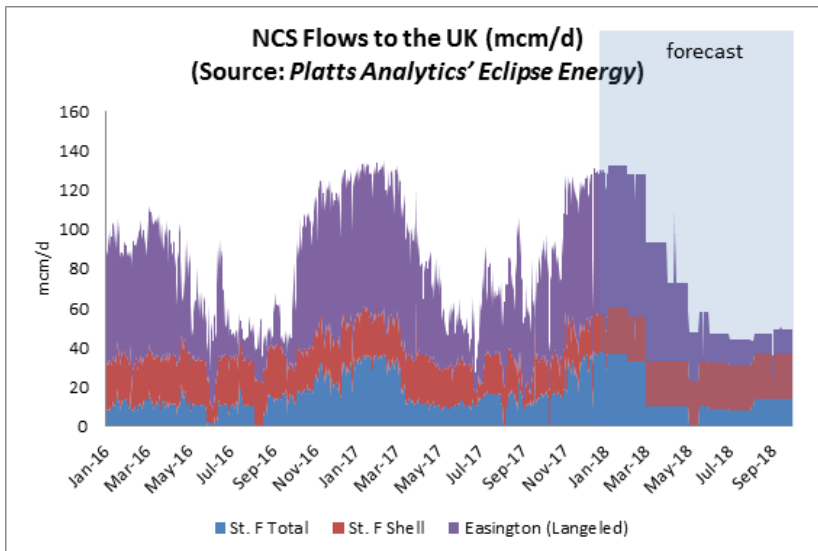
The higher capacity charges in 621 are less efficient than the 621B charges as illustrated in the examples below:

Increased costs to customers. Capacity Mechanism

Risk of capacity substitution means that exit capacity at electricity generators may be purchased in advance. The increased capacity costs at exit will increase fixed costs that are bid into the electricity Capacity Mechanism Auction. Comparing 621 with 621b, post transition, and using Pembroke as an example would result in an increase in cost of [0.0326-0.0166 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 621 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 621 and 621B, 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

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

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.

aa) (II)

0621C: The proposed changes to the balance of reserve prices among capacity products of different durations will ensure that a much fairer price is paid by shippers generally compared with the current situation where short-term entry and exit capacity can be readily purchased free of charge. This will help to significantly reduce the situation where parties that choose, or for business reasons are required, to purchase capacity on a long-term basis are disadvantaged and who, because of revenue under-recovery provisions such as has been witnessed with TO commodity charges, end up paying well in excess of their fair share of transmission costs. This rebalancing of charges and fairer

allocation of costs is conducive to better promoting competition between gas suppliers and between gas shippers.

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

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 621B provides an element of forward looking marginal price signals and recovery of allowed revenue for NG on a fair, non-discriminatory basis, where users pay for the benefits they obtain by using the network. The RPI indexation applied to the NTS Optional Charge also furthers this Objective.

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 policies 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.

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

(RO a, aa & C) 0621/0621A (aa & C) /0621D/0621E/0621F (C only) /0621H/0621J/0621K (aa and C) /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.

(RO aa & C) 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 Mod 621 workgroup³ 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 (Oct 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.

(RO aa & C) 0621K:

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³ <https://www.gasgovernance.co.uk/0621/280318>

(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).

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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 Mod 621. 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

⁴ <https://www.gasgovernance.co.uk/0621/280318>

approx. £1.15m per annum in the enduring regime.⁵ 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

(RO a, aa & C) 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

(RO C) 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 621B. Particularly, it avoids reduced supply competition and reduced security of supply due to storage curtailment from increased capacity costs.

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

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

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

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

⁵ Note that in the transition period the cost will be far lower due to the reduced reserve price levels

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.

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 this modification proposal. Accordingly, implementation of this Proposal would ensure that the GB arrangements are compliant with the EU Tariff Code.⁶

0621B: The proposer of 621B believes the modification is fully compliant with the Commission Regulation (EU) 2017/460, of 16 March 2017, establishing a network code on harmonised transmission tariff structures for gas. One area that may benefit from further clarification is Article 4(3), Transmission and non-transmission services and tariffs.

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

- the complementary revenue recovery charge shall be :
 1. Levied for the purpose of managing revenue under recovery.
 2. Calculated on the basis of forecasted flows
 3. Applied to points other than IPs
 4. Applied after the NRA has made an assessment of cost -reflectivity and on cross -subsidisation between IPs and non-IPs.
- To the extent that use of such commodity based transmission tariff is approved there is no time period for which this must apply – i.e. there is nothing that would prohibit long

⁶ 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

term use of a commodity based transmission tariff and make the 621 proposal more favourable/compliant with the Regulations;

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

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.

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 H.

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 Mod621F 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.