

**Representation - Draft Modification Report**

**UNC 0621; 0621A; 0621B; 0621C; 0621D; 0621E; 0621F; 0621H; 0621J; 0621K\*; 0621L**

**Amendments to Gas Transmission Charging Regime**

**\* Amendments to Gas Transmission Charging Regime and the treatment of Gas Storage**

**Responses invited by: 5pm on 22 June 2018**

**To: [enquiries@gasgovernance.co.uk](mailto:enquiries@gasgovernance.co.uk)**

<b>Representative:</b>	Alex Nield
<b>Organisation:</b>	Storengy UK Ltd
<b>Date of Representation:</b>	22/06/2018
<b>Support or oppose implementation?</b>	<p>0621 - Oppose</p> <p>0621A – Qualified Support</p> <p>0621B – Qualified Support</p> <p>0621C - Qualified Support</p> <p>0621D – Qualified Support</p> <p>0621E - Oppose</p> <p>0621F - Oppose</p> <p>0621H - Oppose</p> <p>0621J - Qualified Support</p> <p>0621K - Support</p> <p>0621L - Oppose</p>
<b>Expression of Preference:</b>	<p><i>If either 0621; 0621A; 0621B; 0621C; 0621D; 0621E; 0621F; 0621H; 0621J; 0621K or 0621L were to be implemented, which <u>ONE</u> modification would be your preference?</i></p> <p>0621K</p>

**Standard Relevant Objective:**

Comparing proposals with the existing charging system

- a) Negative for all proposals, as loss of flexibility creates more imbalance in the network, and will require more investment in the NTS.
- c) Negative for all proposals, as:
  - high cost of NTS capacity creates a barrier to market entry.
  - increased liquidity and NBP creates higher costs/risks/volatility, destabilising the market.
  - creates market distortion between historical contracts and new Agreements.
  - makes UK based storage facilities less competitive with storage facilities outside of the UK, due to increased costs and double charging.
- g) Positive for all proposals, as they all go far beyond the requirements needed for compliance.

0621

- a) Negative
- c) Negative
- d) Negative
- g) Positive

0621A

- a) Negative
- c) Negative
- d) Negative
- g) Positive

0621B

- a) Negative
- c) Negative
- d) Negative
- g) Positive

0621C

- a) Negative
- c) Negative
- d) Negative
- g) Positive

0621D

- a) Negative
- c) Negative
- d) Negative
- g) Positive

0621E

- a) Negative
- c) Negative
- d) Negative
- g) Positive

0621F

- a) Negative
- c) Negative
- d) Negative
- g) Positive

(continued overleaf)

- 0621H  
a) Negative  
c) Negative  
d) Negative  
g) Positive

- 0621J  
a) Negative  
c) Negative  
d) Negative  
g) Positive

- 0621K  
a) Negative  
c) Negative  
d) Negative  
g) Positive

- 0621L  
a) Negative  
c) Negative  
d) Negative  
g) Positive

**Charging Methodology  
Relevant Objective:**

- a) Negative for all proposals, as storage facilities have seasonal gas flows dictated by supply and demand. This can never be reflected by charges based on a CWD approach as it is based on distance and annual capacity, not seasonal flows.
- aa) Proposals do not promote efficiency of transmission services or market competition as:
- Increased costs limit NTS and market flexibility
  - They fail to take into account the 'parking en route' nature of storage products through double charging and high costs.
- b) The charging methodology is focused on how costs can be allocated and monies collected to make it easier for the transmission provider to collect the required funds, and does not take into account developments in the transportation network. For example, in the storage industry it does not take into account:
- the flexibility requirements of the UK industry, availability of UK storage, and additional cost/risk of storing gas externally to the UK.
  - impacts of additional costs on UK storage facilities, leading to the mothballing or closure of facilities.
  - The services provided by storage in meeting market demand, minimising price volatility, and minimising NTS capacity requirements.
- c) Negative for all proposals, as:
- high cost of NTS capacity creates a barrier to market entry.
  - increased liquidity and NBP creates higher costs/risks/volatility, destabilising the market.
  - creates market distortion between historical contracts and new agreements.
  - makes UK based storage facilities less competitive with storage facilities outside of the UK, due to increased costs and double charging.
- e)- Positive for all proposals, as they all go far beyond requirements needed for compliance.

- 0621  
a) Negative  
aa) Negative  
b) Negative  
c) Negative  
e) Positive

(continued overleaf)

**Charging Methodology  
Relevant Objective  
(continued):**

- 0621A  
a) Negative  
aa) Negative  
b) Negative  
c) Negative  
e) Positive

- 0621B  
a) Negative  
aa) Negative  
b) Negative  
c) Negative  
e) Positive

- 0621C  
a) Negative  
aa) Negative  
b) Negative  
c) Negative  
e) Positive

- 0621D  
a) Negative  
aa) Negative  
b) Negative  
c) Negative  
e) Positive

- 0621E  
a) Negative  
aa) Negative  
b) Negative  
c) Negative  
e) Positive

- 0621F  
a) Negative  
aa) Negative  
b) Negative  
c) Negative  
e) Positive

- 0621H  
a) Negative  
aa) Negative  
b) Negative  
c) Negative  
e) Positive

(continued overleaf)

<b>Charging Methodology Relevant Objective (continued):</b>	0621J a) Negative aa) Negative b) Negative c) Negative e) Positive
	0621K a) Negative aa) Negative b) Negative c) Negative e) Positive
	0621L a) Negative aa) Negative b) Negative c) Negative e) Positive

**Reason for support/opposition and preference: Please summarise (in one paragraph) the key reason(s)**

The consultation material does not provide any clear evidence of the benefits or drawbacks of the different alternatives. It does not provide either with a comparison with the existing tariff structure.

There is nothing that allows benchmarking of the alternatives against the following elements: market liquidity, market prices, price volatility, resilience in case of supply and demand shocks.

The timing of the Gas Charging Review consultation seems driven on pure compliance with TAR NC and only few alternatives are considering the impact down the line to the end users and on the whole energy market.

A proper economic and market impact assessment will need to be done, incorporating all the above elements, before any decision is taken.

Tariff changes proposed in the GCR are going far beyond what is required by the TAR Network Code, adding unneeded complexity to the process and a lot of uncertainty on its consequences. Restricting the scope of the changes effective on October 2019 should help reduce uncertainty and potential negative consequences on the gas and electricity markets.

Storengy recommends that the Panel sends the modification report back to the workgroup to enable fuller analysis to be prepared. In addition, we recommend that a counterfactual scenario is developed which sets out the basis for a “minimum EU TAR compliance” solution. This will ensure that the 621 proposals are tested against a more meaningful benchmark (not the current regime, as is the case in the analysis presented) and that the solution taken forward is one which yields the greatest benefits to UK customers.

**Support**

Storengy supports proposal 0621K as this presents the closest reflection of the costs/benefits of storage facilities and is therefore the ‘least worst’ option available. This proposes the 86% discount for storage, providing an allowance for the contribution of system flexibility and reducing the effects of double charging (and cross-subsidy) for storage users. The zero price for Off-Peak Interruptible capacity also provides storage users with more opportunity to refill stocks to better meet the needs of the market, and help management of the network during periods of high demand.

The calculation and method used for determining the 86% discount can be found via the following web link:

[https://www.gasgovernance.co.uk/sites/default/files/ggf/book/2017-12/WWA\\_GSOGMod621Alernate\\_coretextv2.0.pdf](https://www.gasgovernance.co.uk/sites/default/files/ggf/book/2017-12/WWA_GSOGMod621Alernate_coretextv2.0.pdf)

**Qualified Support**

Storengy provide qualified support to proposals: 0621A, 0621B, 0621C, 0621D, and 0621J, as these propose the 86% discount for storage that provides an allowance for the contribution of system flexibility, and reduces some of the effects of double charging.

Despite Modification 0621A having been proposed by Storengy UK, we feel that we can only give it 'Qualified Support' as it only partially reflects the benefits of storage facilities and does not address all of the problems for the storage industry created by the original proposals of Modification 0621.

### **Oppose**

Storengy opposes proposals: 0621, 0621E, 0621F, 0621H, and 0621L, as these proposals do not account for the costs/benefits of storage facilities such as security of supply, managing price volatility through matching demand and supply, and reducing capacity requirements for the network. For this reason the proposal is not cost reflective and represents a cross subsidy from storage users to other Users of the system

**Implementation:** *What lead-time do you wish to see prior to implementation and why? Please specify which Modification if you are highlighting any issues.*

### **Prior to Implementation**

We would wish to see:

- 1) A full independent impact assessment, modelling, and analysis of options before any changes are decided.
- 2) A modification proposal that ensures only minimum EU compliance with the EU Network Code, in order to have a workable solution in case the Impact Assessment of the 621 alternatives conclude none of them is positive for the market and the end-users.
- 3) A lead time between decision and effective date of at least 12-18 months to allow industry members sufficient time to be able to plan and prepare for any potential changes,
- 4) An early decision made on the options, to provide clarity for the 2019/20 Gas Year (and 2019/20 Storage Year) at the earliest opportunity.

**Impacts and Costs:** *What analysis, development and ongoing costs would you face?*

### **Consequences for the market of higher cost for storages**

All proposals will result in higher costs for users of GB storage facilities to move gas in and out. Because of this additional hurdle, opportunities for storage to balance the network by reacting to market signals will reduce significantly. This will result in lower of storage flows from and to storage and eventually demand destruction for NTS entry and exit capacity from GB storage.

Our analysis is that any of the proposals will lead to:

- Reduced operability, reduced ability to support the network balance efficiency resulting in higher linepack usage, higher balancing costs, and reduced security of supply.
- Operation of UK storage sites being unprofitable and unviable, resulting in future site closures, and creating a barrier for future investment in existing and new storage facilities.
- Loss of competitiveness of UK storage sites against continental facilities, and an increase in reliance on foreign facilities and interconnectors to meet UK demand.

We note that the analysis provided by National Grid are based on GY 2016/17 flows, assuming no impact of the GCR on capacity bookings. We consider this assumption is a major caveat: it cannot be assumed that increasing the price of NTS capacity would not affect demand for NTS capacity, especially from users that are very price sensitive.

### **Changes in Market Behaviour**

The new proposals are also likely to see changes in behaviour across the industry. In storage we would be likely to see a change in booking strategies towards a minimisation of costs through short-term booking. This again is likely to place restrictions on storage facilities in being able to react to market needs, increasing price volatility, increasing risks on supply, and potentially overall network capacity requirements for peak imports if more storage close or is mothballed.

### **New IT requirement for seamless NTS capacity booking**

Shippers currently use National Grid IT system to book inexpensive NTS capacity in advance of the gas day in excess of needs. The decision to flow gas can they be made instantaneously, as per market requirements. Such excess booking in advance will no longer be possible (because of the costs incurred) and make flows much less responsive to price signals, as booking will have to take place prior to any balancing action.

Current National Grid systems for booking capacity at short notice will need a full overhaul to allow seamless booking, as they currently support options to flow with low premiums (capacity fee) and higher strike price (commodity fee), where as current proposals will move to a options with higher premiums (capacity) and lower strike price (commodity).

### **Proposals**

All proposals will increase the costs of operation for storage facilities and therefore force a reduced operability. Proposal 0621K provides the 'least worst' scenario of the proposals, placing fewer restrictions on operations, and better reflecting the costs and benefits of storage facilities. This proposal provides an allowance for the provision of contribution of system flexibility, reduces the effects of double charging, and also provides opportunities for storage facilities to refill quickly following demand spikes to better aid in future demand requirements. The costs and benefits for storage facilities can be seen in a previous paper provided by Storengy for the Workgroup Report, in appendix to this document.

Proposals 0621A, 0621B, 0621C, 0621D, and 0621J also incorporate the 86% discount for storage, but severely limit opportunities for storage facilities to refill stocks. The potential effects of this limitation can be seen in the graph below:

Proposals 0621, 0621E, 0621F, 0621H, and 0621L all solely incorporate a 50% and fail to take account of the costs and benefits of storage facilities.

**Legal Text:** *Are you satisfied that the legal text will deliver the intent of the Solution? Please specify which Modification if you are highlighting any issues.*

In the cases of Mod 621A and 621K in Section B 2.11.7, we consider that the legal text does not reflect the intention of the modifications.

In both cases where capacity is traded, whether that capacity is "historical" or "non-historical" it will not be subject to any Revenue Recovery Charge. We understand that this is not the case with Modification 621 (and others) where Historical Storage Capacity will, when transferred to another User, be exposed to this charge.

For storage operators who have secured NTS capacity for their customers would no longer be able to transfer it to storage users without the later incurring additional charges. This would be a major impediment to provide Third Party Access to storage.

**Modification Panel Members have requested that the following questions are addressed:**  
*Please specify which Modification your views relate to.*

**1. Do you believe there is specific issues that should be considered by Ofgem's Regulatory Impact Assessment?**

We believe that Ofgem should consider the following aspects in the Impact Assessment:

- Impact on the availability of flexible gas and on the operation of the NTS (linepack swing).
- Impact on gas balancing costs and the ability for market participant to balance the market efficiently.
- Impact on the volatility and price level at the NBP.
- Impact on the volatility and price level of the electricity market.

- Impact on SoS and on required network investment to pass N-1 test.
- Analysis around entry and exit points to find out how sensitive the proposed methodology is to the removal or addition of connection points.

As per our list provided for the requested Workgroup analysis in March 2018, please see the link below for the 'Draft Consolidated list of requests for analysis v0.5':

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

In addition we believe that a comparison of the current proposals with existing arrangements should be carried out, looking at the impacts on industry, consumers, and market behaviours.

Ofgem requested that the following questions be included as part of the consultation. Panel agreed to include these:

- 2. The rationale in the report for having an interim period and using the obligated capacity as the Forecasted Contracted Capacity (FCC) is to avoid significant changes to charges and have a period to understand how booking behaviour changes. How does this compare to having two structural changes to charges (one at the start of the interim period and another at the enduring period)?*

Storengy believes that changes should be made in one step rather than two, but that implementing the second a step currently tabled is too disruptive for the business so that is cannot be effective in October 2019..

A simplification of proposals to solely those required to meet EU regulations would also make it simpler to be able to implement step one changes on the 1<sup>st</sup> October 2019.

- 3. What (if any) consequences do you see from 'interim contracts' being allocated at QSEC and AMSEC auctions in 2019 given the timings of these auctions in the UNC and possible date of Ofgem decision on UNC621? What options are there to deal with these consequences and what impact would these options have?*

Storengy would welcome an early decision on proposals. However, with current expected timescales we see no reason why 2019 AMSEC and QSEC auctions should be changed from the current methodology, as there is not sufficient time for businesses to review and change auction strategies.

- 4. Do you consider the proposals to be compliant with relevant legally binding decisions of the European Commission and/or the Agency for the Co-Operation of Energy Regulators?*

Yes, all of the proposed modifications are compliant with EU and ACER regulations, as all current proposals go far beyond both current and future proposed regulations. The implementation of any of the proposals will see the UK implementing, across all Entry and Exit Points, an EU regulation that was solely affecting the charging at IPs.

- 5. In what way do you consider the reference price methodologies proposed (Capacity Weighted Distance (CWD), CWD using square root of distance and Postage Stamp) to be cost reflective and meet the criteria in Article 7 of TAR?*

All of the current and proposed methodologies are not truly cost reflective as the charging represents the recovery of historic costs. We see no significant difference between each of the methodologies with regards to their cost reflectiveness.

We consider that the prices from any of these methodologies must be adjusted to correct the bias they introduce. This is especially the case for charging at storage connection points to take into account the 'parking en route' nature of storage flows. The RPM would otherwise consider storage flows to be a load in winter (or at a time of high demand) and supply in summer (or at a time of low demand), whilst they in fact support the network by doing the opposite.

6. *The proposals have different combinations of specific capacity discounts for storage sites and bilateral interconnection points. In what way do you consider the different combinations facilitate effective competition between gas shippers and gas suppliers?*

All of the proposals incorporate various discounts for storage sites and bilateral interconnection points, however, Storengy does not believe that any of the proposals fully reflect the benefits and costs of storage for the network. Although modification 0621K is the 'least worst' of the options for storage facilities, it does not fully reflect the benefits provided to system flexibility, and the increased costs limit the operability of storage sites. Therefore we are keen for more analysis and impact assessment to be undertaken to challenge the restrictive nature of current proposals on storage sites.

**Are there any errors or omissions in this Modification Report that you think should be taken into account?** *Include details of any impacts/costs to your organisation that are directly related to this.*

Storengy would like a full independent impact assessment, modelling, and analysis of all possible options compared to the existing regime prior to any decision being made on possible future changes to charging.

**Please provide below any additional analysis or information to support your representation**

Please see appendix 1

## Appendix 1: Issues to be considered by the Regulatory Impact Assessment

### 1- Section 6: Security of Supply (SoS) and NBP Impact

#### a) Impact on the SoS and on required network investment to pass N-1 test

National Grid modelled the closure of storage facilities in its 2017 edition of the Future Energy Scenarios<sup>1</sup>. It concluded that if daily storage supply capability were reduced by half (compared to a base case with Rough), “the margin of supply over demand declines to the point where new capacity would be needed by the early 2020s” in two of their four scenarios, “Steady State” and “Slow Progression”.

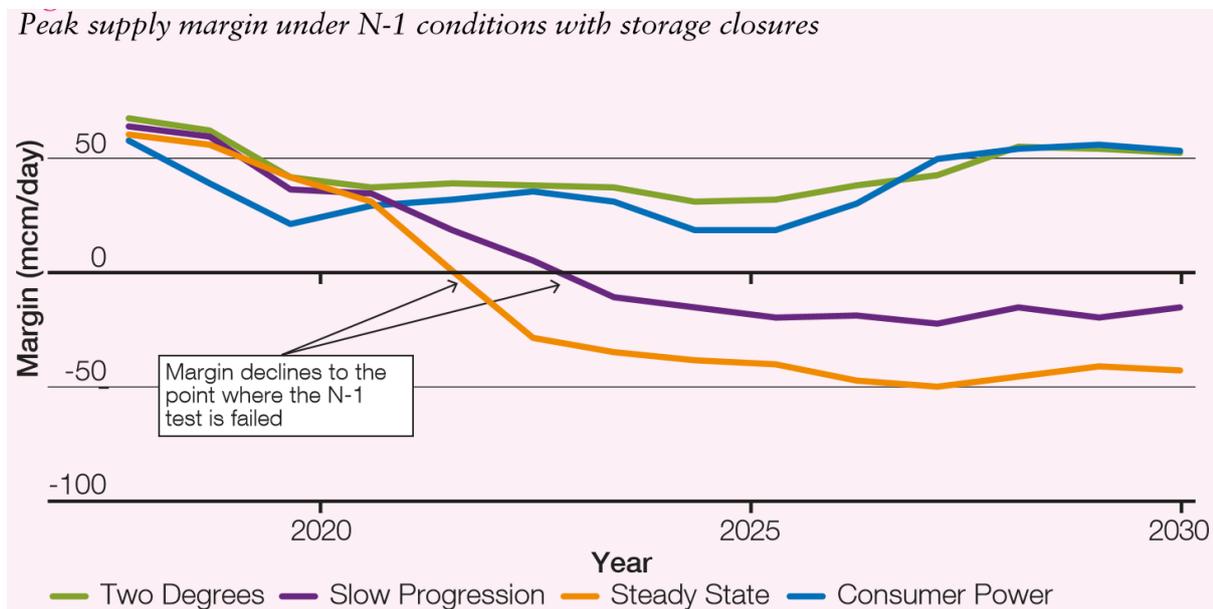


Figure 1: peak supply margin under N-1 conditions – Source National Grid

As the current UNC0621 and alternative proposals are set to increase annual costs for storage users by several millions pounds, the added burden will not only deter projects from moving forward, but will also put existing storage assets at risk of mothballing or closure, making failure of the N-1 test increasingly probable.

The cost of developing additional NTS Entry capacity is estimated using the Notice of Revised NTS Entry Capacity QSEC Reserve and Step Prices. The **cost of adding an incremental 200 GWh/d** (equivalent to 18 mcm/d) **of NTS Entry Capacity** to satisfy the N-1 test is in a range between £10m to £400m, with an **average at £125m**.

<sup>1</sup> [Future Energy Scenarios July 2017](#)

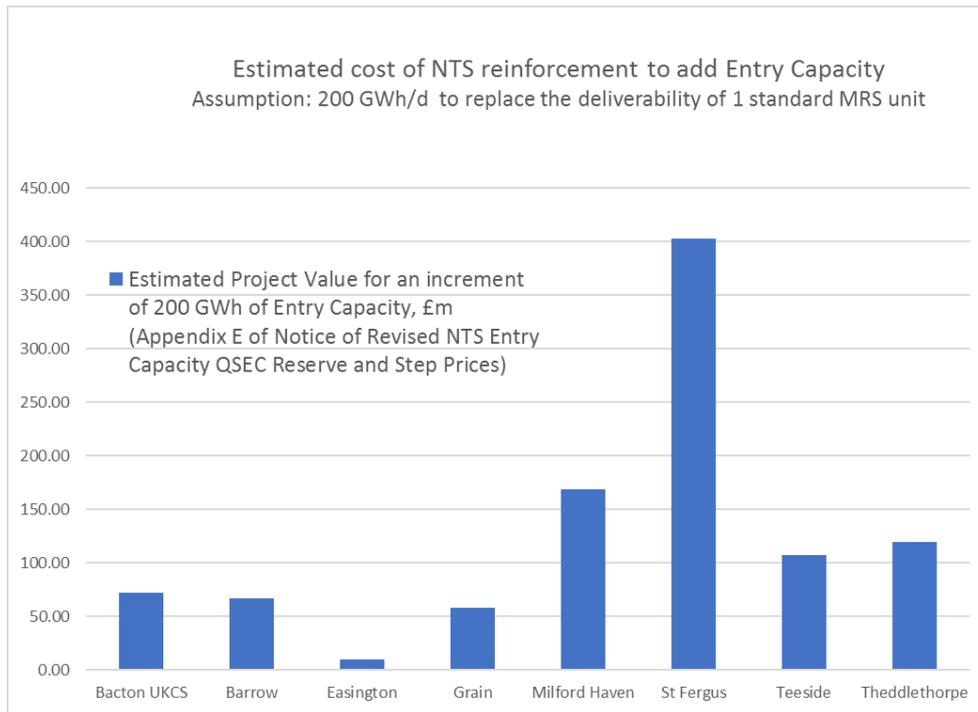


Figure 2: Estimated Project Value for 200 GWh of incremental Entry Capacity – Source Storengy UK based on National Grid figures

**b) Impact on SoS caused by the MRS lower ability to refill**

The higher variable fees (NTS costs for injection and withdrawal of gas) incurred by storage users proposed in UNC0621 will limit their ability to capture short-term volatility in prices, which importantly are highly correlated with demand variations. Based on the model simulations provided by the Proposer of UNC0621, NTS entry costs for storage with a 50% discount would be around 0.15 p/th in the interim period, rising to around 0.50p/th from GY21/22. Additionally, the costs of Exit Capacity would jump from virtually zero, as storage users typically rely on off-peak capacity, to 0.20 – 0.35 p/th (assuming booking of interruptible capacity depending on site), which would **bring the cost of cycling** (injecting and withdrawing) gas **on the NTS to 0.80 p/th**, on top of the operators’ own variable costs.

MRS re-injection during the winter is triggered by very small spreads across varying time periods. If storage variable costs for cycling the gas were to include NTS fees at this level, the refilling of storage space over the periods of lower demand during the winter will become uneconomic. The fast-cycle storage assets may still be physically present, but their stock will have been used only once in the winter, prevented by punitive charging from re-stocking and thus unable to contribute as expected to late winter cold snaps.

On figure 3, we can observe the multiple refills of the Stublach storage, which allowed the stock position to be re-built by more than 60 mcm (orange arrow) before each cold spell, and a simulation of the stock assuming higher transmission costs curtail 50% of the refilling opportunities.

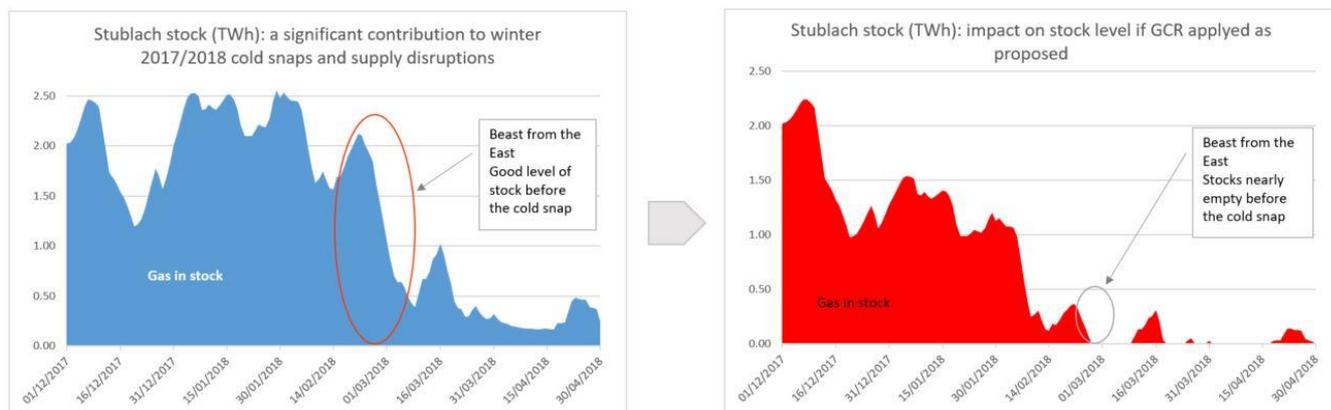


Figure 3: Stock of Stablach Gas Storage between 1<sup>st</sup> December 2017 and 30<sup>th</sup> April 2018 – Source Storengy UK

In addition to Entry capacity required to compensate for the possible loss of storage capacity (as seen above), it can be expected that new Entry Capacity would be required to make up for the reduced ability of MRS to refill in winter – and thus to deliver gas during the later cold spells of the winter flow gas.

### c) Impact on the volatility and price level at the NBP

The UNC0621 will change the dynamics of access to the NBP for flexibility. The NBP is in competition with other European markets for LNG imports. Over the summer when LNG is relatively more abundant, the LNG market seeks the cost effective access to storage capacity. GB must ensure that the charging regime does not favour continental storage over local flexibility from UK assets. NBP liquidity and access to local storage flexibility is essential for security of supply, both in terms of physical resilience and price volatility.

There must be a level playing field in the flexibility market, especially with countries competing with GB for LNG in summer: according to ENTSOG<sup>2</sup> current storage discounts applied in Spain are 100% and in France 85%, on average.

If GB charging results in storage being uncompetitive compared to storage on the continent, there is a risk that the LNG imports into Europe at times of lower demand (e.g. in Summer) bypass GB to head directly to continental hubs with better storage conditions. The NTS would become more dependent on just-in-time deliveries of gas and expose it to the vagaries of continental gas pricing; gas security protectionist measures; and the physical reliability of connecting infrastructure.

In order to meet the higher capacity charges introduced by UNC0621 and its alternatives, market prices will have to increase to higher extremes to allow the use of UK storage, this is likely to cause higher volatility and higher price time-spreads, and potentially higher costs to GB consumers as energy companies seek to compensate for the uncertainty.

## 2- Section 6: Unintended Consequences

### a) Impact on gas balancing costs

As National Grid state in their 2018 Summer Outlook<sup>3</sup>, medium range storage “provides a valuable balancing option to the market close to real time”.

<sup>2</sup> [TAR NC Implementation Document – Second Edition September 2017](#)

In practice, this option is valuable if price signals correctly incentivise market participants to balance the network efficiently.

Since 2011, the Default System Marginal Price (SMP) reflects the cost of linepack flexibility, considered to be a function of NTS compressors and pipeline space. The Default SMP for the gas year 2017/18 was set at 0.0452 p/kWh (1.32 p/th), which provides an incentive for network users to balance the grid without intervention of the TSO. This cost is regularly updated and has been higher than the short-term marginal cost of balancing using gas storages.

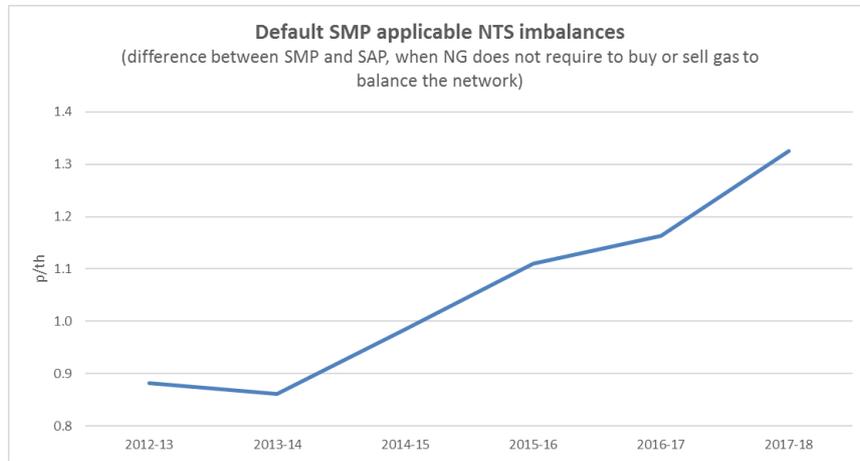


Figure 1: Default SMP the since GY2012 – Source National Grid MIPI Data

In a market based balancing regime, shippers balance their position to avoid exposure to the System Marginal Price. To achieve a balanced system, they rely on short-term flexible gas:

- using gas storage assets, and/or
- anticipating or deferring some imports or local production, and/or
- by adjusting demand.

Total marginal costs for these operations must be lower than SMP if the marginal price is to give any incentive to balance. As argued by National Grid in the final Modification Proposal<sup>4</sup> for the UNC0333A back in 2011, “Reducing this incentive (to balance) will lead to greater industry costs through imbalance charges and residual balancing actions”. To ensure this incentive remains, **the market must be given the means to provide flexibility to the grid at a lower cost than the linepack flexibility of the network.**

We also note that linepack flexibility does not attract capacity charging. **As UNC0621 would make flexible gas less competitive compared to linepack**, new arrangements could result in increased linepack requirements. This would mean more compressors and pipeline space must be added to the NTS in order to compensate for the reduction in the flexibility of flexible assets that have been pushed out of the competitive flexibility market.

If the short-term marginal cost of storage flows is significantly increased, following the Gas Charging Review, the incentive for the competitive market to balance the grid will reduce. This will have negative consequences on the balancing costs, which are charged to gas shippers and passed on to consumers.

#### b) Impact on the availability of flexible gas and on the operation of the NTS

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<sup>3</sup> [National Grid 2018 Summer Outlook](#)

<sup>4</sup>

<https://www.gasgovernance.co.uk/sites/default/files/ggf/Final%20Modification%20Report%200333%200333A%20including%20formal%20text%20v3.0.pdf>

The National Grid Future Energy Scenarios<sup>5</sup> 2017 suggest, “the reduction in the availability of flexible supply would also increase the complexity of operating the NTS”.

The re-shuffle of short-term marginal costs will affect the availability of flexible gas. This is particularly true of changes resulting from the Gas Charging review: lower discounts for short-term capacity combined with a larger share of the revenue eventually recovered through capacity rather than commodity charges. Any short-term decision not to flow after having bought the capacity will need to account for the relatively higher sunk cost of stranded capacity. This is in contrast with the current regime where the main cost driver (commodity) must be paid only after an actual flow. In turn, **greater inflexibility of gas flows linked to short-term capacity bookings** could make flexible gas **much less reactive to price movements (see above)**.

As seen in the above, the Default SMP is at risk of becoming the next most competitive source of balancing for participants, when short-term import flexibility (imported gas from UKCS, NCS, LNG...) is exhausted or does not respond, particularly in winter. Market participants may adopt a wait-and-see approach to balancing during the day, adjusting their position through storage (including booking the daily NTS capacity) late in the day only if and when it becomes clear (through observed linepack depletion, price spikes on the OCM), that the cost of cash-out may be higher than the Default SMP.

**c) Impact on the volatility and price level of the electricity market**

Given the very large share of gas in the electricity mix, the impact on the volatility and price level of gas will feed into the power prices. So both the direct effect on the cost of gas as a fuel and the price of capacity to be paid by the gas-fired power plant impact on the price of electricity. Furthermore, as coal is being phased out and renewable production grows, gas is expected to provide increased flexibility to the electricity market.

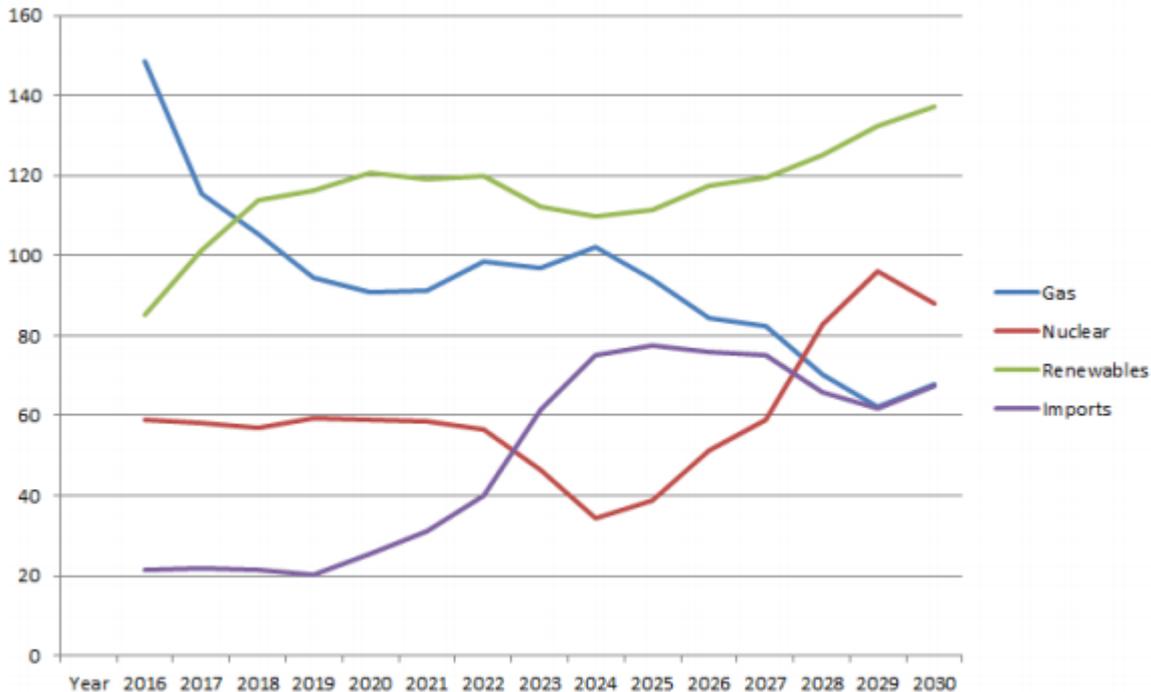


Figure 5: Projection of electricity generation by source (2016 estimates) – Source BEIS

<sup>5</sup> [Future Energy Scenarios July 2017](#)