

**Draft Workstream Report**  
**Update of the default System Marginal Buy Price and System Marginal Sell Price**  
**Modification Reference Number 0333**  
Version 0.1 Draft

This Workstream Report is presented for the UNC Modification Panel's consideration. The Transmission Workstream considers that the Proposal is sufficiently developed and should now proceed to the Consultation Phase. [The Workstream also recommends that the Panel requests the preparation of legal text for this Modification Proposal.]

## **1 The Modification Proposal**

### **Nature and Purpose of this Proposal**

Where capitalised words and phrases are used within this Modification Proposal, those words and phrases shall usually have the meaning given within the Uniform Network Code (unless they are otherwise defined in this Modification Proposal). Key UNC defined terms used in this Modification Proposal are highlighted by an asterisk (\*) when first used.

This Modification Proposal\*, as with all Modification Proposals, should be read in conjunction with the prevailing Uniform Network Code\* (UNC).

### **Background**

#### **Drivers for Proposal**

Special Licence\* Condition 27 (C27) has obligated National Grid Gas (NTS) to use reasonable endeavours to update the default System Marginal Buy Price\* and default System Marginal Sell Price\* (referred to collectively as the “default SMPs” within this proposal) as stated in Section F 1.2.1 (a) (i) and 1.2.1 (b) (i) of the UNC by 1<sup>st</sup> April 2011. C27 also includes the obligation to develop, in consultation with the industry, a linepack product by 1<sup>st</sup> April 2011 and, if directed to do so by the Authority, implement such product by 1<sup>st</sup> October 2011. For the avoidance of doubt, this proposal is solely proposing an update to the default SMPs to satisfy paragraph 3 of C27.

The current default SMPs, i.e. the SMPs set when National Grid does not take a Market Balancing Action\*, have remained unchanged since their introduction in April 2001 following the implementation of Network Code Modification Proposal 0433. As such the proposer believes that after almost ten years, the default SMPs should be updated to reflect the current market and / or operational conditions.

Further, work on aligning network codes within Europe has stated that “Imbalance charges shall be cost-reflective to the extent possible, whilst providing appropriate incentives on network users to balance their input and offtake of gas. They shall avoid cross subsidisation between network users and shall not hamper the entry of

new market entrants<sup>1</sup>". Due to the historic nature of the current default SMPs, the proposer believes that the proposed changes within this proposal would better reflect the European Regulation requirements.

### Daily Balancing Regime

The current daily balancing arrangements within the UNC are supported commercially by a System Clearing Contract\* between shippers via the Balancing Neutrality\* mechanism. In summary, a System Clearing Contract 'cashes out' a shipper at the end of each Day\* by multiplying a shipper's Daily Imbalance\* (the net difference between a shipper's physical inputs and NBP\* buys less physical outputs and NBP sells) by the relevant System Marginal Price. If a shipper is long, i.e. has entered more gas into the system than its customers have offtaken, the resulting Daily Imbalance is cashed out using the System Marginal Sell Price. If a shipper is short, i.e. its customers have offtaken more gas than it has entered then the Daily Imbalance is cashed out using the System Marginal Buy Price.

The calculation of the SMPs on days when National Grid does not take a Market Balancing Action\* is explored in further detail in the following sub-section however it is important at this stage to note that the SMPs provide a commercial incentive to balance by cashing a shipper out using a Buy price that is marginally higher than System Average Price (SAP\*) and a Sell price that is marginally lower than SAP.

The cash flows associated with the SMPs are included as a Daily Imbalance Charge\* and Balancing Neutrality Charges\* within the Balancing Invoice\*. It is important to note that Balancing Neutrality Charges ensure that National Grid does not gain or lose from any of the charges associated with clearing and balancing the system.

### Calculation of Current System Marginal Prices

The current SMPs are derived from either the price of National Grid's Market Balancing Actions, or System Average Price\* (SAP\*) plus or minus a default value. System Marginal Sell Price is the lesser of the lowest Balancing Action Offer Price\* on a day or SAP less 0.0324 pence per kWh. System Marginal Buy Price is the higher of the highest Balancing Action Offer Price\* on a day or SAP plus 0.0287 pence per kWh. In summary therefore, the 'default' SMPs apply on occasions where National Grid NTS, as the residual system balancer, has determined that it can manage a system imbalance without having to undertake Market Balancing Actions.

The numbers for the default SMPs were set in 2001 using the average price of a Standard Bundled Unit (SBU) at the Hornsea Storage Facility for the 2001 Storage Year\*. Rather than reflect the costs incurred by National Grid NTS' when managing a shipper or system imbalance, the current default SMPs provide a proxy for the alternative option a shipper could arguably have taken, i.e. to inject or withdraw gas from a storage facility rather than allowing the imbalance to be subject to the System Clearing Contract and associated SMPs. Whilst the current SMPs may have reflected

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<sup>1</sup> Paragraph 3, Article 21 of Regulation 715/2009

a proxy for ‘Hornsea storage flexibility’ for the initial year in which they were used, due to the annual changes in the price for Hornsea Storage the proposer believes the current default values are now out of date and no longer fully reflect the market conditions or operational costs..

To illustrate the above point further, Hornsea storage prices have increased by almost 80%, with an SBU costing 5.86 pence for the 2001 storage year, compared to 10.5 pence for the 2010 storage year.

Further, the proposer believes that the methodology used to provide the current default SMPs is flawed and in practice does not reflect the full cost of storage flexibility. In short the methodology assumes that a single SBU can provide sufficient flexibility to inject and withdraw 1 kilowatt hour (kWh) of gas on alternate days. However, due to the normal seasonal use profile of storage i.e. ‘slow’ injection during the summer and a relatively quicker withdrawal during the winter months a single SBU does not provide the short term flexibility available via Linepack. A Hornsea SBU provides 17.9 kWh of space, 1 kWh of deliverability and 0.1 kWh of injectability per day which means that, in crude terms, to obtain 1 kWh of injectability a user would require approximately 10 SBUs. Whilst this is a worst case scenario and in reality users purchase thousands or more SBUs, it is important to note that the cost of storage flexibility cannot be compared with system flexibility using only 1 SBU. As such, the proposer believes that the cost of storage flexibility is higher than reflected by the current default SMPs.

In reality, Linepack and its associated flexibility is a by-product of installing and operating a high pressure gas network. In simple terms Linepack offers a “buffering” flexibility that means that the system inputs and outputs do not have to be equal on a daily basis. As Linepack use is currently a ‘free service’ the costs of managing a net shipper imbalance using Linepack comprises of ‘sunk’ elements within the capacity and commodity charges of providing the pipeline and operating the compressors. This proposal seeks to identify the sunk costs and reflect these within the default SMPs.

#### Review Group\* 0291

To help meet the C27 GT Licence obligation National Grid NTS has initiated Review Group (RG) 0291 to discuss and develop potential updates to the default SMPs and potential Linepack service products.

A number of options were presented by National Grid and discussed by RG 0291 attendees to identify the most appropriate update to the default SMP values. Among the options taken forward for further analysis and development by RG 0291 were:

- Removing the default SMPs ie. SMPs to be SAP unless National Grid NTS takes a Market Balancing Action
- Updating the default SMPs using the current methodology (as described above) with an up-to-date Hornsea or equivalent SBU price
- Updating the default SMPs with a percentage of SAP

- Updating the default SMPs with a number based on the operational costs incurred by National Grid NTS when managing a system imbalance.

The proposer believes that the option proposed within this Modification Proposal (as summarised by the fourth bullet above) will better facilitate the relevant objectives to a greater extent than the alternative options discussed at RG 0291. However, it is important to note that whilst the nature of this proposal has been presented and discussed alongside a number of alternative approaches at the RG 0291 meetings, agreement on a particular option did not occur and thus this proposal does not represent the consensus view of RG 0291.

### **Nature of the Proposal**

In consideration of all points within the above section, it is proposed that the current default SMPs should be updated in time for a proposed 1<sup>st</sup> April 2011 implementation.

In short this proposal seeks to introduce two amendments to the UNC. First, it is proposed that the current default SMP values as stated within Section F of UNC be removed and replaced with a calculation based upon the operational costs incurred when managing a system imbalance. Secondly, it is proposed that National Grid NTS be obligated to undertake an update of the default SMPs in line with the new methodology on an annual basis and publish the relevant default SMP number for the subsequent Formula Year\*. It is further proposed that the updated default SMP value to apply from 1<sup>st</sup> April 2011 is 0.0544p/kWh. Both proposed changes are described in further in the following sub-sections.

#### Default SMP Update

This proposal seeks to update Section F of UNC to state that for each Day:

the "**System Marginal Buy Price**" is the greater of:

- (i) the System Average Price plus a number applicable from 1 April each year as calculated by National Grid and published in line with the Default System Marginal Price Methodology; and
- (ii) the price in pence/kWh which is equal to the highest Balancing Action Offer Price in relation to a Market Balancing Action taken for that Day;

the "**System Marginal Sell Price**" is the lesser of:

- (i) the System Average Price less a number applicable from 1 April each year as calculated annually by National Grid and published in line with the Default System Marginal Price Methodology; and
- (ii) the price in pence/kWh which is equal to the lowest Balancing Action Offer Price in relation to a Market Balancing Action taken for that Day;

#### Methodology for SMP Update

National Grid NTS proposes updating the default SMPs using a value that relates to the physical system components used by National Grid when addressing a system imbalance. These components can be broadly summarised into two categories:

namely the Transmission Owner (TO) and SO related costs. TO costs relate to the costs of providing a pipeline system within which the storage of gas as “Linepack” is an option for so long as the pipe is not fully utilised for gas transportation. The SO costs relate to the marginal costs of managing an imbalance using the compressors within the system to either move gas further through the system to address a short position in one area of the network or to compress and store gas within Linepack where the system is long. In summary, the TO element may be perceived as the sunk costs of providing the ‘space’ within the NTS to store gas as Linepack whilst the SO element may be perceived as the costs of ‘injecting’ or ‘withdrawing’ gas from Linepack storage. These elements of the proposed default SMPs are calculated using the following methodology.

TO Costs are obtained by dividing the TO Allowed Revenue for the previous year (less any under or over recovery allowances) by the sum of the annual System throughput and total absolute daily system imbalance for the previous incentive year (April through March). For clarity, ‘daily system imbalance’ means the net total of the individual shipper imbalance on a daily basis and ‘total absolute daily system imbalance’ means the gross (absolute) total difference between each daily system imbalance i.e. the sum of each day to day net shipper imbalance change. In addition, System throughput means the annual sum of the daily data item “Demand Actual, NTS, D+6” as published on the National Grid website. For the initial proposed update the Compressor Fuel Costs and Transmission Owner Allowed Revenue values will be as stated below. For future annual updates these values will be available via the National Grid website. All inputs to the following calculation will be published alongside the updated default SMPs to apply from 1 April each year. The TO Allowed Revenue figure is used to reflect all associated infrastructure costs incurred on a per kWh basis including consideration of any costs associated with a system imbalance.

SO costs are obtained by dividing the annual NTS compressor fuel costs for the previous incentive year by the sum of the annual NTS System throughput and total absolute daily system imbalance for the previous incentive year. The SO figure is used to reflect the marginal compressor fuel use when National Grid manage a system imbalance either by compressing gas into Linepack for long imbalances or moving gas further than it would otherwise have travelled to address a short imbalance.

It is proposed that the default SMPs be updated using the above methodology and figures from the previous Formula Year\*, as per the calculation below. It is proposed that the following formula be included within Section F of the UNC.

$$\text{Default SMP} = \frac{(\text{Compressor Fuel Cost} + \text{Transmission Owner Allowed Revenue})}{(\text{Total absolute daily system imbalance} + \text{annual System Throughput})}$$

The above value will be updated annually and the updated values will apply equally for all Days from 1 April each year. It is proposed that National Grid use the method and publish the values derived for the forthcoming period by 1 March each year.

Using the above methodology, the proposed update to the default SMPs to apply from 1 April 2011 shall be 0.0544p/kWh as calculated below;

$$\text{Default SMP} = \frac{(\pounds 33.434\text{M} + \pounds 612.8\text{M})}{(9.894\text{GWh} + 1,116.538\text{GWh})}$$

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Review Group 0291 did consider using solely the ‘SO’ element or marginal element to reflect the operational costs of managing a system imbalance, however National Grid NTS does not believe that this option captures the ‘sunk’ costs of providing the Linepack ‘space’ within the NTS pipeline. Further, National Grid NTS does not believe that solely using the ‘SO’ cost element will provide a sufficient incentive for shippers to balance on a daily basis and may therefore not satisfy the recently published EU Balancing Framework.

#### Publication of Methodology and Annual Review

In addition to introducing the updated values as stated in the above section, it is proposed that the above methodology also be incorporated into the UNC.

#### Housekeeping

When the current SMPs were introduced into the UNC on 1 April 2001 as part of Modification 0433 part of the old text in Section F 1.2.1 of the UNC remained in error rather than being deleted.

The incorrect text is situated at the end of Section F 1.2.1 and reads “(and for the avoidance of doubt on a Day on which National Grid NTS takes no Market Balancing Action the System Marginal Buy Price and the System Marginal Sell Price

shall be the System Average Price)”. This statement is in contrast to the nature of Modification 0433 which proposed using the default SMPs on a Day on which National Grid NTS does not make a residual balancing trade. As such it is proposed that this paragraph be removed.

## 2 User Pays

### a) **Classification of the Proposal as User Pays or not and justification for classification**

This proposal is not classified as User Pays. The proposer proposes that the agency costs associated with this proposal are classed as an Energy balancing change as per paragraph (d) Special Condition C8G of the NTS Licence and as such National Grid NTS is entitled to recover 100% of its expenditure in line this Licence Condition.

### b) **Identification of Users, proposed split of the recovery between Gas Transporters and Users for User Pays costs and justification**

No User Pays charges applicable.

### c) **Proposed charge(s) for application of Users Pays charges to Shippers**

No User Pays charges applicable to Shippers.

### d) **Proposed charge for inclusion in ACS – to be completed upon receipt of cost estimate from xoserve**

No charges applicable for inclusion in ACS.

## 3 **Extent to which implementation of the proposed modification would better facilitate the relevant objectives**

**Standard Special Condition A11.1 (a): *the coordinated, efficient and economic operation of the pipe-line system to which this licence relates;***

The proposer believes that this proposal will, if implemented, better reflect the cost of providing system flexibility within the default System Marginal Buy Price and default System Marginal Sell Price. By better reflecting the SO costs of balancing the proposer believes that the incentive to balance will be more cost reflective and therefore will promote a more efficient use of the system.

**Standard Special Condition A11.1 (b): *so far as is consistent with sub-paragraph (a), the (i) the combined pipe-line system, and/ or (ii) the pipe-line system of one or more other relevant gas transporters;***

Implementation would not be expected to better facilitate this relevant objective.

**Standard Special Condition A11.1 (c): *so far as is consistent with sub-paragraphs (a) and (b), the efficient discharge of the licensee's obligations under this licence;***

The proposer believes that this proposal is the most appropriate update of the default SMPs to satisfy the NTS Special Standard Licence Condition 27.

**Standard Special Condition A11.1 (d): *so far as is consistent with sub-paragraphs (a) to (c) the 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;***

The proposer believes that this proposal will, by reflecting the cost of system flexibility, provide a more appropriate incentive on Users to address their imbalance position. By providing this more appropriate incentive this may promote more efficient trading activity and promote competition.

The proposer also believes that this proposal will better relevant objective (d) by mitigating the cross subsidies within the industry by ensuring that Daily Imbalance Charges and Balancing Neutrality Charges are more reflective of the operational cost of system flexibility. The proposer believes that this proposal, if implemented, will provide more cost reflective default SMPs and therefore ensure that shippers using system flexibility as a balancing tool will pay an appropriate price for this.

**Standard Special Condition A11.1 (e): *so far as is consistent with sub-paragraphs (a) to (d), the provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards (within the meaning of paragraph 4 of standard condition 32A (Security of Supply – Domestic Customers) of the standard conditions of Gas Suppliers' licences) are satisfied as respects the availability of gas to their domestic customers;***

Implementation would not be expected to better facilitate this relevant objective.

**Standard Special Condition A11.1 (f): *so far as is consistent with sub-paragraphs (a) to (e), the promotion of efficiency in the implementation and administration of the network code and/or the uniform network code.***

The proposer believes that this proposal will better relevant objective (f) “so far as is consistent with sub-paragraphs (a) to (e), the promotion of efficiency in the implementation and administration of the network code and/or the uniform network code”. The proposer believes that this objective will be better achieved by the increased level of transparency introduced by amending the current fixed and potentially non cost reflective default SMPs to a clear calculation to allow greater understanding of Section F of UNC. For clarity, the calculated SMP values will be published each year as part of the annual update, whilst the UNC will contain the methodology describing how the values are derived.

**4 The implications of implementing the Modification Proposal on security of supply, operation of the Total System and industry fragmentation**

No implications on security of supply, operation of the Total System or industry fragmentation have been identified.

**5 The implications for Transporters and each Transporter of implementing the Modification Proposal, including:**

**a) implications for operation of the System:**

The proposer believes that this proposal will lead to a more efficient use of the system by amending the default SMPs to a more cost reflective value.

**b) development and capital cost and operating cost implications:**

A Rough Order of Magnitude (ROM) has indicated that the implementation of this proposal is likely to cost at least £90k but no more than £120k plus an additional 25-30% should project management resources be required.

In addition the ROM has indicated that the ongoing Application Support associated with this proposal is likely to be at least £5k but no more than £20k per annum.

**c) extent to which it is appropriate to recover the costs, and proposal for the most appropriate way to recover the costs:**

Costs will be recovered in line with paragraph (d) Special Condition C8G of the NTS Licence.

**d) Analysis of the consequences (if any) this proposal would have on price regulation:**

No consequences have been identified.

**6 The consequence of implementing the Modification Proposal on the level of contractual risk of each Transporter under the Code as modified by the Modification Proposal**

No such consequence is anticipated.

**7 The high level indication of the areas of the UK Link System likely to be affected, together with the development implications and other implications for the UK Link Systems and related computer systems of each Transporter and Users**

This proposal will require a change to the Gemini system.

**8 The implications of implementing the Modification Proposal for Users, including administrative and operational costs and level of contractual risk**

*Administrative and operational implications (including impact upon manual processes and procedures)*

It is anticipated that users may require the functionality to update the default SMPs within their systems.

*Development and capital cost and operating cost implications*

No implications have been identified.

*Consequence for the level of contractual risk of Users*

No consequences have been identified.

**9 The implications of implementing the Modification Proposal for Terminal Operators, Consumers, Connected System Operators, Suppliers, producers and, any Non Code Party**

The proposer is aware that the System Marginal Sell Price and System Marginal Buy Price may be referenced within industry contracts e.g. between Shippers and Storage Operators, Shippers and Industrial & Commercial end users.

**10 Consequences on the legislative and regulatory obligations and contractual relationships of each Transporter and each User and Non Code Party of implementing the Modification Proposal**

Implementation of the proposal would allow Special Standard Licence Condition 27 obligation to be met by 1 April 2011.

**11 Analysis of any advantages or disadvantages of implementation of the Modification Proposal**

**Advantages**

- Amends default SMP values to better reflect the costs associated with managing a shipper imbalance to allow the informed and efficient use of Linepack
- Better aligns GB balancing regime to EU Regulations regarding cost reflective imbalance charges and providing an incentive to balance
- Facilitates NTS Licence obligation to updates default SMPs by 1<sup>st</sup> April 2011

**Disadvantages**

- May require a change to;
  - Shipper – Storage and / or End User industry contracts
  - Shipper systems

**12 Summary of representations received (to the extent that the import of those representations are not reflected elsewhere in the Workstream Report)**

No written representations have been received.

**13 The extent to which the implementation is required to enable each Transporter to facilitate compliance with safety or other legislation**

No such requirement has been identified.

**14 The extent to which the implementation is required having regard to any proposed change in the methodology established under paragraph 5 of Condition A4 or the statement furnished by each Transporter under paragraph 1 of Condition 4 of the Transporter's Licence**

No such requirement has been identified.

**15 Programme for works required as a consequence of implementing the Modification Proposal**

No programme of works would be required as a consequence of implementing the Modification Proposal.

**16 Proposed implementation timetable (including timetable for any necessary information systems changes)**

It is recommended that this proposal be implemented on or before 1<sup>st</sup> April 2011 to allow the updated default SMPs to become effective by this date.

**17 Implications of implementing this Modification Proposal upon existing Code Standards of Service**

No implications of implementing this Modification Proposal upon existing Code Standards of Service have been identified.

**18 Workstream recommendation regarding implementation of this Modification Proposal**

The Transmission Workstream considers that the Proposal is sufficiently developed and should now proceed to the Consultation Phase. [The Workstream also recommends that the Panel requests the preparation of legal text for this Modification Proposal.]

