

CODE MODIFICATION PROPOSAL No xxxx
Update of the default System Marginal Buy Price and System Marginal Sell Price
Version 0.1 DRAFT

Date: 25/08/2010

Proposed Implementation Date: 1 April 2011

Urgency: Non Urgent

1 The Modification Proposal

a) 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 “SMPs” within this proposal) as stated in Section F 1.2.1 (a) (i) and 1.2.1 (b) (i) of the UNC by 1st April 2011. C27 also includes the obligation to develop, in consultation with the industry, a Linepack* product by 1st April 2011 and, if directed to do so by the Authority, implement such product by 1st 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 gas 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 entrants¹”. 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 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 SMP. If a shipper is long, i.e. has entered more gas into the system than it’s customers have offtaken, the resulting Daily Imbalance is cashed out using the System Marginal Sell Price. If a shipper is short, i.e. it’s customers have offtaken more gas than it has entered, 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 subsection 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 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 Action, 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 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 SO cost of managing a shipper

¹ Paragraph 3, Article 21 of Regulation 715/2009

or system imbalance, the current default SMPs provide a proxy for the alternative option a shipper could arguably have taken 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 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 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

² Total absolute daily system imbalance means the absolute total of each daily system imbalance with daily system imbalance derived by netting off individual shipper imbalance on a daily basis.

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, updating the default SMPs using the current methodology with an up-to-date Hornsea SBU price, updating the default SMPs with a percentage of SAP, and finally updating the default SMPs with a number based on the operational costs incurred by the SO when managing a system imbalance.

The proposer believes that the option proposed within this Modification Proposal will better facilitate the relevant objectives to a greater extent than the alternative options discussed at 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 1st April 2011 implementation in line with the following criteria that default SMPs should;

- be reflective of the costs (both marginal and ‘sunk’) incurred by the System Operator in managing shipper and system energy imbalances
- value the flexibility of system
- be calculated via a transparent and not unduly complex process
- be able to be updated on a regular (annual) basis

As such, this proposal seeks to update the default SMP values as stated within Section F 1.2.1 (a) (i) and 1.2.1 (b) (i) of UNC, to values based on the operational costs incurred by National Grid when managing a system imbalance.

In addition, it is proposed that the methodology used to calculate the above values be introduced into the UNC together with the obligation on National Grid to update the default SMP values on an annual basis.

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.

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 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 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

The proposed values in the section above relate to the numerous physical system components used by National Grid when addressing an 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. 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 imbalance² for the previous incentive year (April through March). 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 2009-2010 Incentive year, as per the calculation below.

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

The above value will be updated annually and will apply from 1 April each year. It is proposed that National Grid use the method and publish projected values 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

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.

Balancing Neutrality

This proposal does not propose an amendment to the current neutrality process. As such the balance of users Daily Imbalance Charges, incurred by Users who have used Linepack flexibility to balance, will be smeared back to the physical shippers that have funded the pipeline network through the capacity regime.

b) Justification for Urgency and recommendation on the procedure and timetable to be followed (if applicable)

Not applicable.

- c) **Recommendation on whether this Proposal should proceed to the review procedures, the Development Phase, the Consultation Phase or be referred to a Workstream for discussion.**

The proposer believes that this Modification Proposal is sufficiently clear to proceed directly to consultation

2 **User Pays**

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

TBC

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

TBC

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

TBC

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

TBC

3 **Extent to which implementation of this Modification Proposal would better facilitate the achievement (for the purposes of each Transporter's Licence) of the Relevant Objectives**

The proposer believes that this proposal better facilitates a number of the relevant objectives as described below.

With regards to relevant objective (a) 'the 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 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.

With regards to relevant objective (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.

With regards to relevant objective (d) "so far as is consistent with sub-paragraphs (a) to (c) the securing of effective competition" 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 trading activity and promote competition.

In addition to the above, the proposer 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.

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

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

a) The implications for operation of the System:

By implementing more appropriate cost reflective default SMPs, it is anticipated that the incentive to manage daily imbalances may increase. As a result the balance of the system may improve.

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

TBC

c) Whether it is appropriate to recover all or any of the costs and, if so, a proposal for the most appropriate way for these costs to be recovered:

TBC

d) The consequence (if any) on the level of contractual risk of each Transporter under the Uniform Network Code of the Individual Network Codes proposed to be modified by this Modification Proposal

6 The extent to which the implementation is required to enable each Transporter to facilitate compliance with a safety notice from the Health and Safety Executive pursuant to Standard Condition A11 (14) (Transporters Only)

Not applicable.

7 The development implications and other implications for the UK Link System of the Transporter, related computer systems of each Transporter and related computer systems of Users

This proposal will require a change to the Gemini system

8 The implications for Users of implementing the Modification Proposal, including:

a) The administrative and operational implications (including impact upon manual processes and procedures)

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

b) The development and capital cost and operating cost implications

TBC

c) The consequence (if any) on the level of contractual risk of Users under the Uniform Network Code of the Individual Network Codes proposed to be modified by this Modification Proposal

Not applicable.

9 The implications of the implementation for other relevant persons (including, but without limitation, Users, Connected System Operators, Consumers, Terminal Operators, Storage Operators, Suppliers and producers and, to the extent not so otherwise addressed, any Non-Code Party)

10 Consequences on the legislative and regulatory obligations and contractual relationships of the Transporters

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 not otherwise identified in paragraphs 2 to 10 above

Advantages

Disadvantages

12 Summary of representations received as a result of consultation by the Proposer (to the extent that the import of those representations are not reflected elsewhere in this Proposal)

- 13 Detail of all other representations received and considered by the Proposer**

- 14 Any other matter the Proposer considers needs to be addressed**

- 15 Recommendations on the time scale for the implementation of the whole or any part of this Modification Proposal**

- 16 Comments on Suggested Text**

- 17 Suggested Text**
To be added

Code Concerned, sections and paragraphs

Section F

Uniform Network Code

Transportation Principal Document

Section(s)

Proposer's Representative

Nick Reeves

Proposer

National Grid NTS