

Modification proposal:	<b>Modification Proposal NTS GCM16 'Supply and Demand Balancing Rules and Supply Source Data'</b>		
Decision:	<b>The Authority<sup>1</sup> has decided not to veto this proposal<sup>2</sup></b>		
Target audience:	<b>NGG NTS and other interested parties</b>		
Date of publication:	<b>23 June 2009</b>	Implementation Date:	<b>1 October 2009</b>

## Background to the modification proposal

National Grid Gas (NGG) uses the transportation model in order to derive entry and exit capacity prices. This calculates the Long Run Marginal Cost (LRMC) of transporting gas:

- (a) from each entry point to a 'reference node'<sup>3</sup>, and
- (b) from the 'reference node' to each exit point

The LRMCs then form the basis of the entry and exit capacity charges.

### *Data sources*

The inputs to the transportation model include supply flows, which are currently taken from the Ten Year Statement (TYS), and demand data, which is the forecast 1-in-20 peak day demand.

### *Supply and demand balancing rules*

In order to balance the supply and demand levels in the transportation model NGG currently employs a 'merit order' approach which turns off supply flows, taken from the TYS, at each entry point one-by-one in a set order until supply matches demand. The order by which the different types of entry points are turned off is as per the following groupings:

- Short-range storage (LNG)
- Mid-range storage
- Long-range storage (Rough)
- Interconnectors
- LNG importation
- Beach

### *Issue*

It has been observed that the approach that NGG dopts has resulted in volatility in exit capacity prices between years, which has an impact on shippers' forecasts and consequently on their investment decisions.

An analysis of the circumstances that give rise to this volatility has found the main driver to be year-to-year variations in the TYS. Accordingly, NGG's proposal seeks to deal with the issue of supply data variability.

## The modification proposal

In aiming to reduce the high level of price volatility, the modification proposal has two main components:

<sup>1</sup> The terms 'the Authority', 'Ofgem' and 'we' are used interchangeably in this document. Ofgem is the Office of the Gas and Electricity Markets Authority.

<sup>2</sup> This document also constitutes notice of the reasons for this decision as required by section 38A of the Gas Act 1986.

<sup>3</sup> The reference node is an arbitrary point on the system chosen to model entry and exit flows. The entry and exit prices are not dependent on the choice of reference node. Currently Peterborough is selected as the reference node.

- **Supply and Demand Balancing** – supplies are split into six groups and each group is fully used in turn. Supplies in the last group that is required for balancing are scaled by the same percentage in order to match demand. The groups are used to match demand in the following order:
  1. Beach
  2. Interconnectors
  3. Long-range storage
  4. LNG importation
  5. Mid-range storage
  6. Short-range storage

This differs from the current approach by changing the order in which the groups are used, and also by scaling all supplies in the last group that is required for balancing.

- **Supply Data** – the supply data source depends on the entry terminal type (though each Aggregated System Entry Point would be capped at the obligated entry capacity level):
  1. Beach terminals<sup>4</sup> – use TYS supply data
  2. Non-beach terminals – use physical capability
 Currently supply data comes from the TYS only.

Section 4.6<sup>5</sup> of the TYS will be used to identify new entry points and the year in which they come into operation. This will bring greater transparency to the process.

### **Justification of the modification proposal**

NGG considers that GCM16 better achieves the relevant gas transmission transportation charging methodology objectives in that it:

- **reflects cost** – the proposed balancing rules are more consistent with NGG’s planning approach and so would be more reflective of actual peak day supplies if supply significantly exceeded demand. NGG considers that using physical capability for non-beach terminals reflects the costs incurred in planning the National Transmission System (NTS) to facilitate current levels of entry and exit capacity; however, the delivery capability of beach terminals is limited by the connected offshore fields so it would be inappropriate to model these at greater flow rates.
- **accounts for developments in the transportation business** – changing the balancing rules reflects the changes to the planning approach which has in part been driven by the changes to sources of UK gas supply, for example, through the reprioritisation of the long range storage facility in the merit order.
- **facilitates effective competition** – by setting clear rules for the prioritisation of balancing supplies and specifying the supply data used at entry points, the methodology is more transparent and simple, allowing industry to better replicate NGG’s charge setting process.

### **Responses to NTS GCM 16 Consultation**

NGG consulted on the modification proposal between 17 April 2009 and 15 May 2009. It received eight responses. Five gave support for the balancing rules proposed whilst two stated preference for other options, which had been considered during the analysis stage but not included in the GCM16 proposal, and

---

<sup>4</sup> Beach terminals are currently Bacton (excluding BBL and IUK), Barrow, Burton Point, Easington (including Langeled but excluding Rough), St Fergus, Teesside (including Excelsior), Theddlethorpe and Wytch Farm (Onshore field). This is the same definition of ‘beach’ as is used for the supply and demand balancing rules.

<sup>5</sup> Section 4.6 is entitled ‘UK Import and Storage Projects’.

the other respondent only provided comments. Six gave support for the proposed changes to the source of supply data and one did not support this, whilst the other respondent did not state explicitly whether it supported this aspect of GCM16.

One respondent noted that it found it difficult to understand the volatility in exit prices at specific exit points when there were no significant changes in the local infrastructure or supply and demand conditions. One other respondent noted that in extreme cases, the volatility results in prices changing by thousands of per cent each year. It considered that this causes significant issues for shippers that are unable to forecast such volatile changes. Another noted that it is not necessarily the fluctuations in charges that are problematic, but the fact that these are not often predictable. It favoured predictable charges over stable charges. One respondent was supportive of GCM16 in aiming to improve stability and predictability so long as the resulting prices are cost reflective.

With regards to balancing demand, the proposal would use an equal percentage of supplies from all entry terminals in a group of similar types of entry terminals. One respondent considered that this is more consistent than choosing an arbitrary single marginal supply point. Another noted the current merit order is at best arbitrary and questionable due to limited experience of operating some of the flows in a commercial manner. Though this respondent supported GCM16, it did question the positions of interconnectors and LNG importation in the balancing order and thought the ordering of groups of supplies for balancing purposes should be kept under review. Another supported the scaling of supplies in the last required balancing group, stating that the GCM16 proposal for balancing rules seemed intuitive and was more appropriate than prescribing a rigid hierarchy within the various supply types, which may not resemble actual peak day supplies. However, this respondent expressed disappointment that the options had not been "stress tested".

Another respondent who supported the supply data source in GCM16, noted that capping the supply flow at the obligated level may not be appropriate for use in forecasts from year four onwards, as incremental obligated capacity could be triggered from that period (considering the 42 month incremental entry capacity lead time). We have taken this as a useful caveat for users rather than as a criticism of NGG's approach, as it is not within NGG's control to accurately predict the arrival of incremental obligated capacity that far out in the future.

One respondent noted that even though the capability data can be calculated from data in the public domain, NGG should still state the capability assumptions by supply group and update them with each release of the transportation model.

The respondent that did not support the supply data source proposed in GCM16 preferred using TYS data for all supplies (rather than just beach entry terminals) as it would be consistent. It noted that NGG's argument that physical capability at non-beach terminals reflects costs incurred in developing NTS to facilitate flows could equally be applied to beach terminals. Similarly, it argued that conditions may arise at non-beach terminals such that peak flows are below the physical capability.

### **The Authority's decision**

**The Authority has considered the issues raised by the modification proposal and the Conclusions Report dated 26 May 2009. The Authority has considered and taken into account the responses to NGG's consultation. The Authority has concluded that:**

- 1. Implementation of the modification proposal will better facilitate the achievement of the relevant objectives of the Methodology<sup>6</sup>; and;**
- 2. Deciding not to veto the proposal is consistent with the Authority's principal objective and statutory duties.**

### **Reasons for the Authority's decision**

*SSC A5(5)(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*

In its modification report, NGG states that by using physical import capability of non-beach infrastructure and TYS data as its best estimate of beach supplies, it "...is not seeking to reflect historic levels of capacity bookings at entry points but to reflect system costs incurred". We agree that this change will result in an improvement in cost reflectivity, albeit potentially a marginal improvement, and that the change would therefore better facilitate this objective. The allocation of costs in line with usage should result in pricing signals which will incentivise better use of underutilised entry/exit points and bring about system efficiencies over the longer term.

*SSC A5(5)(b) that, so far as is consistent with sub-paragraph (a), the charging methodology properly takes account of developments in the transportation business*

GCM16 proposes to balance supply with demand by capping flows at a number of supply sources instead of switching off supplies one-by-one. Ofgem agrees that this approach, rather than choosing a single marginal supply source, is more consistent with what happens in practice on the gas network. The order of the supply terminal groups also appears to go towards reflecting NGG's current planning approach as set out in the TYS and Transmission Planning Code.

*SSC A5(5)(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*

Responses to NGG's consultation highlighted the significant variability and lack of predictability of prices as a significant issue of concern. NGG's analysis indicates that the variability will be reduced as a result of the proposed changes, but just as important, the level of predictability will be improved substantially. This should facilitate more effective competition between shippers because users will be able to undertake their own scenario planning and forecast charges accordingly.

We agree with respondent views that, in the short run, the ordering of the supply source groups should be kept under review to reflect further developments. We also consider that there are parallels with the work that is being undertaken on charging in the context of electricity transmission. This work includes consideration of alternative approaches to charging, better suited to circumstances that will arise when a significant proportion of electricity is produced by intermittent, wind generators. The presence of significant intermittency is likely to give rise to a situation when part of the network is utilised under certain weather conditions. This may be similar to the circumstances which would arise on the gas transmission network where, for

---

<sup>6</sup> As set out in Standard Special Condition A5(5) of NGG's Gas Transportation Licence

example, flows of gas from LNG terminals would be potentially highly variable, depending on the relative price of LNG and other gas supplies. We would like NGG to consider the applicability of such principles and techniques which are established for electricity transmission as part of its continual review of the gas charging methodology.

**Decision notice**

**In accordance with Standard Special Condition A5 of NGG NTS's Gas Transportation Licence, the Authority has decided to not to veto modification proposal GCM16: Supply and Demand Balancing Rules and Supply Source Data.**

**Stuart Cook  
Director, Transmission**

**Signed on behalf of the Authority and authorised for that purpose**