National Grid Gas plc

Gas Transmission Charging Methodologies Working Group

Draft Meeting Report: 02 March 2006

This report outlines the key discussions of the Working Group meeting of the TCMF held at Elexon Offices, 350 Euston Road, London on 02nd March 2006. All supporting material can be found at www.nationalgrid.com/uk/gas

ATTENDEES

Tim Davis (Chair)	TD	Joint Office of Gas Transporters
Amrik Bal	AB	Shell Energy Europe
Adam Cooper	AC	Merrill Lynch
Colin Dickens	CD	ExxonMobil
Christiane Sykes	CS	E.ON UK
Dan Roberts	DR	Frontier Economics
Eddie Blackburn	EB	National Grid NTS
Erik Sleutjes	ES	Ofgem
Fiona Lewis	FL	EDF Energy
John Bradley	JB	Joint Office of Gas Transporters
Jeff Chandler	JC	Scottish and Southern Energy
Merel Van Der Neut Kolfscholten	MVDNK	British Gas Trading
Mike Young	MY	British Gas Trading
Nick Wye	NW	Waters Wye Associates
Paul Roberts	PR	National Grid NTS

1. Introduction and Key Objectives of the Meeting

TD welcomed attendees to the meeting and suggested that the key objectives of this meeting were to go through the options within the Transport Model, as described previously, and evaluate advantages and disadvantages of options within this model.

2. Charging Methodology Assessment Criteria

EB summarised the objectives within National Grid NTS' licence related to charging principles and noted that any changes or enhancements to the NTS Transportation Charging Methodology must be consistent with these objectives. He summarised these objectives in a table that related each of these licence objectives to specific capacity charging objectives and proposed that these should be used as the assessment criteria for any potential regime enhancement.

The meeting accepted the general principles outlined.

3. LRMC Methodology Transport Model Enhancement Options

EB began by summarising the material covering potential enhancements to the NTS Transport and Tariff Models presented at the last TCMF meeting and highlighted that this working group was being held to discuss the Transport Model.

1. Supply and Demand Scenarios: 1 Year or Multiple Year?

EB described the period 2005/6 to 2014/5 showing the increasing forecast LNG Importation proportion within national gas supply. He then demonstrated how this would affect costs if a 1 Year assumption had been used for each of the ten years: the effect would have been to depress costs if only the initial year had been considered potentially due to high use of storage required to meet forecast 1-in-20 demand. MY suggested that a hybrid approach might overcome this problem. It was recognised that a similar ten year forecast developed, say, five years previously would have come to a very different result for the years common to each assessment. TD suggested that an administered price scenario might indicate the use of a Multiple Year option but an incremental price scenario would indicate the 1 Year option.

2. How should incremental costs be modelled?

Three models had been identified, Transcost, Transcost + Expansion Factor and Transportation Model + Expansion Factor.

On Model 2, EB explained that the pressure drop formula would be based upon the Panhandle A equation used internationally to model pipeline networks and as the basis for both Transcost and Falcon.

NW asked how the Expansion Factor might be determined. EB replied that National Grid NTS was doing work, based upon a number of pipeline configurations, using Graphical Falcon and other analysis in order to determine a suitable expansion factor or potentially pipe diameter specific expansion factors. The Transcost model assumed that reinforcement would involve laying a second pipeline of the same diameter on the same route as an existing line or adding additional compressor units at existing compressor stations. EB pointed out that with Model 2, any incremental flow change would generate costs. In Model 1, in some cases spare capacity might be identified, which could allow an incremental flow change at zero cost.

EB suggested that a decision tree could summarise the rationale for selecting Model 1, 2 or 3. Model 1 would be required if spare capacity was to be modelled with the selection of Model 2 or 3 depending on the feasibility of generating expansion factors. ES asked whether Models 2 and/or 3 could be refined to utilise spare capacity. The working group concluded that this would essentially signal a return to the complexities associated with Model 1, although a “fudge factor” might be able to account for spare capacity. In answer to the proposition that capacity above the baseline must, by definition, incur costs, MY distinguished between the physical and commercial aspect of baselines. TD pointed out that the principle of cost reflectivity, within the terms of the licence, was essentially a backward facing principle but the nature of investment was forward looking. DR pointed out that physical reinforcement tends to produce step increments of cost so some averaging is required. TD responded that Transcost assumes just enough incremental capacity is provided, which effectively avoids lumpy investment.

3. How should spare capacity be treated?

EB demonstrated how spare capacity might arise through reinforcement identified to cater for a number of years of growth or how it might appear to arise within the model via storage flows supporting system extremity pressures. TD asked for initial reactions to the two alternatives: modelling or removing spare capacity. AB asked how accurate Transcost was at modelling spare capacity. EB stated that, while Transcost was accurate for the modelling of spare capacity and small increments (the purpose for which it was designed) the weakness with Transcost was that for large incremental flows that exceeded the prevailing feeder flows, the model tended to break down. This was because it would duplicate pipeline and uprate compression at existing points, which would not always be the most efficient way of handling large flow changes. For major changes such as the largest increments modelled as part of the entry capacity price schedule analysis, manual runs of Graphical

Falcon would be required but this programme should not be considered a reinforcement cost calculator in the way that Transcost is.

NW suggested that the accuracy of any spare capacity calculation was dependent on the accuracy of the forecasting assumptions and for this reason might not be worth including within the model. DR suggested over a long term, such as ten years, a more economical pipeline design would diverge from that assumed by taking sequential elements over ten years using Transcost.

EB suggested that application of spare capacity would have more validity for a multi year model than a 1 Year model.

4. Should decrement (back flow) costs be considered?

EB presented a simple example. Currently, Transcost ignores backhaul. The question arose on certainty of backhaul flows. NW suggested that it could be safely assumed at peak. EB responded that maximum flows from certain Entry Points may arise for an extended period each year, where it would not be reasonable to assume the backhaul always existed. TD suggested that, intuitively, some provision for backhaul was required. EB acknowledged this point and said that backhaul could be included in the Transport Model.

In order to consolidate the analysis required, EB suggested four variants to review.

Issue	Variant 1	Variant 2	Variant 3	Variant 4
Treatment of spare capacity and duration of model	No spare capacity 1 year model	Spare capacity 10 year model	Spare capacity 10 year model	No spare capacity 1 year model
Backhaul costs modelled?	Yes	No	Yes	No
Transport Model	1, 2 or 3	1. Transcost	1. Transcost	1, 2 or 3

TD queried why, given the earlier discussion, 1 year, spare capacity variants had been excluded. DR responded that investment in physical capacity could be “lumpy” and the answer would be very different if a large increment in capacity were required in year 1 than if that type of requirement did not apply until later years. TD suggested that this was a characteristic of the assumptions made and the choice of base year. After listening to the discussion, PR proposed that a Variant 5 (1 year, spare capacity) be included.

CD asked how many of the Transport Models were available to National Grid NTS currently. EB replied 1 and 3. It would look at the feasibility of developing Model 2 once the question of the feasibility of calculating a cost reflective expansion factor or factors had been addressed.

PR stated that an early reaction would assist National Grid in identifying what was not worth pursuing. For example it could lead to National Grid not being required to develop Model 2.

Variant 1: No spare capacity, 1 year, with backhaul and any of the Transport Models

EB presented a summary table of the pros and cons and asked for comments. CD did not accept the implication that spare capacity and backhaul were legitimately offset against each other. For this reason it was questionable whether this summary, in respect of cost reflectivity, was accurate. A revision might be to refer to a pro of 'no virtual spare capacity being modelled'. A con might be that no physical spare capacity was being modelled. It was agreed that the word "offset" was misleading and this cell within the table would be reworded accordingly. DR noted that removing spare capacity would result in all incremental flows triggering a costs and hence the pairing of spare capacity removal with backhaul, where all reverse flows generated a benefit, was consistent.

Variant 2: Spare capacity, 10 year, no backhaul and Model 1

A similar replacement of the word "offset" would be required. It was pointed out that this was the status quo and could be used as a benchmark for evaluating the other variants.

Variant 3 Spare capacity, 10 year model, with backhaul and Model 1

No comments were made.

Variant 4 No spare capacity, 1 year, no backhaul and any of the Transport Models.

The working group concluded that further analysis of this variant was not required.

5. Way Forward

National Grid NTS would reword the pros and cons table and would further analyse the first three variants plus the variant proposed by the Working Group. **Action National Grid NTS**

6. AOB

EB offered to give a presentation of the solver that included backhaul. It was decided that this could be given on a later date.

End of Report

Action Log

No.	Date Raised	Description	Status	Comments
5	02/03/06	National Grid NTS to revise Transport Model Variants tables to reflect further Variant and the wording refinements suggested at the working group meeting.	Open	
6	02/03/06	National Grid NTS to conduct further analysis of Transport Model Variants 1 to 3 plus Variant 5 suggested at the working group meeting.	Open	