Transmission Workstream
Minutes of Gas Quality Workshop 1
Monday 23 April 2007
held at
Elexon, 350 Euston Road, London NW1 3AW

Attendees

John Bradley (Chairman)	JB	Joint Office of Gas Transporters
Lorna Dupont (Secretary)	LD	Joint Office of Gas Transporters
Alexandra Campbell	AC	E.ON UK
Amrik Bal	AB1	Shell
Andrew Knights	AK	South Hook LNG Terminal
Bruce Phillips	BP	Ofgem
Charles Ruffell	CR	RWE npower
Chris Wright	CW	Centrica
Christiane Sykes	CS	Statoil
Danny O'Brien	DO	Bord Gais Eireann
David Cox	DC	Poyry Consulting
Dick Hoekstra	DH	Gas Transport Services
Ed Proffitt	EP	MEUC
Fiona Lewis	FL	BP Gas Marketing
Jackie Atterton	JA	Px (TGPP) Ltd
Juan Vazquez	JV	Fluxsys
Lester Callanan	LC	National Grid NTS
Martin Watson	MW	National Grid NTS
Mike Piggin	MP	TPA Solutions
Nevile Henderson	NH	Gasunie
Nick Bates	NB	National Grid Transmission
Nick King	NK	National Grid Transmission
Peter Taff	PT	Independent consultant
Rahaina Braimah	RB	Ofgem
Richard Street	RS	Statoil
Robert O'Rourke	RO	CER
Simon Goldring	SG	Centrica
Sofia Fernandez Avendano	SFA	Total
Tim Bradley	TB	National Grid NTS
Tim Davis	TD	Joint Office of Gas Transporters

1 Introduction

JB welcomed everyone to the meeting and outlined the programme for the day.

2 Introduction to Gas Quality Topic – National Grid NTS

MW (National Grid NTS) gave a presentation, covering the background to the topic. The industry was concerned that, as a consequence of Britain becoming a net importer, gas available for import could be provided to the NTS that was not compliant with the current GS(M)R upper Wobbe limit. There was uncertainty as to sources and therefore the range of specifications that would be encountered, and it was recognised that there could be a need for gas quality treatment services. There was also likely to be an associated licence obligation on

National Grid NTS to provide a service. Ofgem had already initiated a consultation process on changes that may be required to this licence and National Grid NTS or other parties would be expected to raise Modification Proposals to the Uniform Network Code (UNC).

MW explained the assumptions made by National Grid NTS that were to form the basis to develop a UNC Modification Proposal, and proposed a way forward outlining 4 key areas (definition of the service, registration mechanisms, charging arrangements, and liabilities arrangements).

3 Update on Licence Development Process - Ofgem

RB gave the first half of a presentation recapping and updating on the progress made in respect of the licence amendments, together with a timeline. Ofgem presented its role as overlaying that of the DTI and the HSE. Progress so far was described and RB commented that the alignment to Europe also needed to be considered.

The extent of the issue was outlined in terms of the parameters set and 4 main scenarios, culminating in Ofgem's Gas Quality Scenario Development Workstream's conclusions that the gas quality of future supplies was highly uncertain. The Economic Regulation Workstream had considered 3 broad approaches and favoured the User Commitment Model approach.

BP continued with the second half of the presentation, summarising the proposed regulatory approach through a process flowchart, and describing the Licence amendments timeframe, and advised that the next consultation document, in respect of the licence changes, would be issued at the end of May. Responses would be sought by early July and the final proposals would be issued by October. It was the intention that the Modification Proposal would be developed in parallel with this timeframe. There was no disagreement from the meeting in respect of the timeframe.

AK questioned if the generic approach was to be applied to any entry point, and BP confirmed this. AK pointed out that, in its conclusions report, Ofgem had given the impression that the issue of gas quality did not impact on LNG facilities/terminals, hence his question. RB stated that no exclusion had been intended. MW stated that it should be applicable to all entry points.

Action GQ001: Ofgem to ensure that all previous responses are made available on its website.

4 Bacton Blending Control Feasibility Study – National Grid NTS

NB (National Grid NTS) presented the background and findings of the feasibility study commissioned in Autumn 2006, which had looked at the technical feasibility of operating blending at the Bacton facility, given that there was sufficient compliant gas to blend with imports. The assumptions included the requirement that any gas leaving the site must be GS(M)R compliant. He explained that Bacton is a complex site with little room for more equipment, and would only be capable of accommodating minor modifications.

The ABB findings concluded it was difficult but feasible to offer a service, as Bacton had not been purpose built to blend and the current configuration of pipework was not an ideal arrangement with its multi inputs and outputs. To accept a 'no limit' arrangement; it would have to be constrained for flow and quantity and the control system would depend on a feed-forward control, which was feasible but more complex. However, to offer blending and ensure compliance would need a safety margin built into the model, and this safety margin could make it uneconomic.

The study had noted that transient changes in gas quality could be an issue. Variable inputs could affect this significantly, eg Wobbe increases and/or decreases. These changes could be unpredictable and short term, and therefore difficult to measure and control.

In conclusion, NB stated that this was a limited study, and would require further work to demonstrate that it could be done safely. It was hard to envisage how this could be offered as a Firm service, and any site constraints were likely to have a 'knock on' effect to other parties using the site. There would be similar issues at other sites, but different arrangements would need other studies.

PT asked whether the use of mixing vessels had been considered, if the existing manifolds could not provide the degree of blending required. He also asked for clarification on the statement that blending "could introduce constraints with the remainder of the Bacton site. NB responded that some of the gas could not be blended without major changes in pipework layout. Any blending solution would therefore incorporate separate treatment of blended gas and the remaining unblended gas.

SG questioned the likelihood and quantity of interruption. NB stated that historic flow and quality information had been used to establish this. If the site was to lose a supply on which the blending was dependent gas safety would be compromised unless flow from all inputs to the blending part of the site were be curtailed whilst the component flows recovered. NB was unable to quantify the likelihood of this curtailment occurring.

SG went on to ask about what assumptions had been made with regard to parameters and proportions. NB stated that the study had focussed on Wobbe, specifically high Wobbe, and the potential of variance within this band. In the worst case, the Interconnector would be at maximum flow and at the higher EASEE-gas Wobbe limit. National Grid had discussed any possibility of short-term relaxations of the GS(M)R upper Wobbe limit with the HSE but its reaction was that no non-compliant gas should enter the system, with no leeway for error. Non-compliant gas must be kept separate and off the network.

RS asked what 'minor changes' were and whether land was available at Bacton to accommodate an expansion/building of this facility. NB responded that a full blending service would mean a rebuilding of Bacton or a new facility built next to it to ensure all compliance issues were met. There was land at Bacton but the study did not address this; there could be planning and construction constraints that precluded or delayed this. JB commented that some blending took place in a facility across the road from Bacton and that producers could offer this service to Shippers.

DC asked for clarification of the scope for blending BBL gas with others. NB commented that current pipeline configuration would not allow BBL to effectively blend with all the other supplies at Bacton and currently an economic case could not be made for changing the configuration.

NH asked if the study had been made available. He was informed that it was a National Grid document but that MW would consider making a version available to view on a website.

Action GQ002: MW to consider making a version of the ABB study available to view on a website.

5 Process to deliver Commercial Framework – National Grid NTS

MW gave a presentation on the commercial framework that might be established, requiring changes to be made to the UNC, and outlined 4 areas for consideration within the Modification Proposal: definition of the service, registration mechanisms, charging arrangements, and liabilities arrangements. It was proposed to hold a series of workshops on these areas and a timeline was put forward that covered the workshop schedule and the proposed Modification Proposal schedule. A discussion followed on the necessity of proceeding with work on this topic of Gas Quality. SG was concerned that the process for change was being driven by NG's ability or inability to provide the promulgated service and that a 'white elephant' may be created - a service that no one would in effect be using. It needed to be viewed as part of a bigger picture, and the meeting was cognisant that the British gas industry was only one piece of the

jigsaw. MW was aware of this and in favour of developing a mechanism fit for purpose, while at the same time continually reassessing with European initiatives. Although well attended, it was commented that these workshops may benefit from the presence of representatives from other sections of the industry and it was thought that Ofgem could encourage this.

MW outlined the assumptions made as a starting point (slide 4). At the end of each workshop the aim was to agree a set of valid assumptions, and decide what should go into the licence, the UNC or an Ancillary Agreement. Some items/parameters might be better served at a generic level whereas others might be more site specific.

A number of attendees emphasised the linkage between the feasibility study, which would be funded by one party, and the open season for bids in which other parties might participate. Any solution should ensure that the party funding the study should not be disadvantaged. MW recognised that this was a key point.

In response to AK's question on the service provision, MW saw no reason why it should not be done on an unregulated basis by others. AK observed that if the service were built on the NTS then it would have to be provided by National Grid NTS. MW conceded that it would be difficult to develop an unregulated approach but commented that it was not intended to exclude other parties from offering services.

MW then put forward some indicative figures (slide 5) on likely costs associated with building a nitrogen ballasting plant at Bacton: capital costs around £200 million, operational costs around £20 million per annum. A feasibility study to allow NGG to hold an open season represented 3% of the capital cost (circa £6 million). The study would have to be very detailed, including the land, planning, and environmental issues, storage issues, volume of flow to be treated and whether full or part, and any preferred solution to dealing with high Wobbe, etc. MW explained that if an open season was required, this level of detailed study was necessary to gain the surety of service provision.

RS commented that not many single companies would contemplate spending £6 million on a feasibility study just in case they may want to use the facility; there was no commercial benefit. PT suggested that some Shippers might want to band together and share the cost and risk. SG commented that ultimately he was really only interested in what it would cost him as a Shipper, and that perhaps what was needed was to separate out what National Grid NTS wanted and how much it would cost Shippers to get to that point. MW observed a significant amount of work was needed to get to a reasonable point where National Grid NTS would be comfortable enough to offer terms to Shippers. If an open season was run to commit to capacity/commodity charges, more comfort was needed.

NH wondered whether any market research/testing had been done to establish whether any Shippers were prepared to pay at a particular price level before any more work was generated. MW reiterated that National Grid NTS' current position was a consequence of the output of Ofgem's two workstreams. NH questioned what the demand was likely to be. PT observed that things would need to happen in parallel to establish this. Ofgem responded that the current position resulted from the outcome of the workstreams and the issues that have been around for some time. It was driven by the industry and what it wanted within a framework. There was a negotiation process for establishing what goes into a feasibility study.

CS questioned whether a Shipper could request this service now. MW responded that if a Shipper were to make a request today NG would look at doing it and make a response.

RS questioned who would own the intellectual property rights. MW noted this point.

The focus then moved onto the Key Issues, which MW explained represented NG's internal thinking and were put forward for discussion:

- **Gas Quality Service**

CS pointed out that, for Norwegian gas, ICF is an issue and not just Wobbe, and perhaps this should be considered within discussions on parameters.

PT observed that blending could be carried out at locations other than terminals. NB said that the consequent sterilisation of pipes between the blending point and the entry point would need to be considered

EP's view was that, if cheaper alternatives were available and /or feasible, these should also be considered - consumers only required the correct specification of gas at the point of use.

JB commented that if there was no Supply Point between two points or the only Supply Point was a power station then there was not seen to be a problem.

PT questioned the purchase of the service. It would be more difficult with differing Shipper requests rather than with a common set of requirements.

PT also commented that blending could solve problems other than those associated with Wobbe.

There was a short discussion on sulphur. DH stated that the EASEE-gas specification for sulphur was lower and should not therefore be a problem. The main difference between the GS(M)R and EASEE-gas specifications was Wobbe. The amount of change required to the Wobbe, the amount of conversion capacity, and of nitrogen blending, should be considered.

The concept of a single or multiple products would be revisited, including Firm, Interruptible or a combination of the two.

RS wondered whether there would be the option to flex or would it be constrained. MW stated that National Grid NTS was seeking to understand the industry's requirements/demands, eg 365 days, 24/7, all or 50 days of the year, etc, and could then look at providing what appeared to be required. It could be blending plus a nitrogen ballasting plant to provide a Firm service. It was difficult to see how a Firm blending service, in isolation, could be provided.

PT thought that there might be a seasonal factor to be considered.

JB commented that a two-prong approach was evolving – blending and/or processing. Should the UNC recognise these two types of service or would a generic structure provide for either or both?

MW responded that there might be a generic service, which would not exclude blending with some ballasting if there were a Firm requirement. National Grid NTS would have to look at what using different types of equipment could deliver for a User, its capabilities and differences in response times, etc.

There was a short discussion on rates of return and risk. MW stated that if National Grid NTS were to expect a Standard rate of return then it would expect a standard risk. If a higher risk applied then National Grid NTS would seek a higher rate of return. NG acknowledged the licence requirement and would be offering a standard service for a standard rate of return.

If plant were built at Bacton, Fluxsys would need to be confident of being permitted to change their specification. The equipment would become extremely critical in terms of security of supply and to the point of supply, as the whole Belgian system would then be compliant with Britain through the dedicated pipeline. Was there an implication with IUK and impacts on nomination regimes?

RS queried the build lead-time. MW responded that 'a ball park figure' was 5 years from feasibility study to plant operation. If the sole requirement was for a Bacton blending control system it would be 1 – 2 years. The minimum lifespan was likely to be 8 years.

It was questioned whether UIOLI principles/elements would be incorporated. BP believed that this would be covered in the Ofgem consultation document. MW observed that consideration should be given to the whole picture so that parties did not feel excluded.

- **Access Mechanism**

The preservation of commercial confidentiality was discussed. RS thought that intellectual property rights would be an issue. EP stated that he would expect exclusive rights to a solely

funded study; MW thought that certain aspects of this would severely challenge the ability to run an open season, and that consideration may need to be given to different options.

Consideration may also need to given to whether a small volume of gas is of significant materiality to affect/effect a change of the Fluxsys specification. The issues arising from this may become more complex as upstream parties were affected by decisions, and different routes of gas on the continent may challenge the initial assumptions.

PT was of the opinion that a feasibility study should look at the maximum IUK flow at the limit of the EASEE-gas Wobbe specification. The complexity associated with studying a multitude of options would then disappear.

There was a short discussion on overrun charges and how they might be applied if either the flow or the gas quality exceeded the service parameters. In a comingled stream, such as an interconnector flow it can be difficult to decide which of the parties delivering through the stream should be subject to an overrun charge.

NH commented that the specification of the gas quality was very much dependent on where Shippers source gas from. PT commented that there were 5 different types of gas with their associated Wobbe limits. These were not linked to the EASEE-gas specification.

- **Charging Arrangements**

SG questioned what regime was being considered – the standard NG model of regulated asset base, price controls etc? Or a model with shareholder capacity owners? If it was to be underwritten by a Shipper or Shippers, should they only pay an operating fee to National Grid NTS?

EP commented that National Grid NTS has the ability to blend whereas others did not. RS commented that NG would gain in many ways from the experience of running a blending plant. However MW responded that NG did not view this primarily as a business opportunity. The meeting expressed the view that discussions on service access and charging would be assisted by a better understanding of the nitrogen plant which National Grid NTS stated would cost around £200m. This would include information on plant capacity and how this related to gas flows of high Wobbe gas. For example, was it designed to accommodate design flows of IUK gas at the limit of the EASEE gas upper Wobbe specification.

Action GQ003: MW to provide details of Nitrogen Ballasting Plant capacity and how this relates to assumed flows and qualities of high Wobbe gas.

- **Liability Arrangements**

There were no comments in respect of MW's explanation of this issue.

- **General Discussion**

EP asked how much non-compliant gas was being excluded from the market. If the quantity was small was any action really necessary? FL and RS questioned why the workshops should take place at this time if it takes 5 years to build the plant, and thought that perhaps these should only take place if a User came forward to initiate it. MW believed that a User would want to understand what the regulatory framework would look like before it launched such an action.

A further issue might be to understand what would be the impact for Britain in not being able to access the European trading points if gas quality continued as a stumbling block.

CS thought that developing governance rules to feed into Ofgem's consultation was to be preferred rather the other way around. Licence amendments may end up differently.

DC observed that individual companies did not have a particular incentive to be active in resolving these issues, and a service-led approach was not apparent here. An alternative might be to change all gas appliances across the country, but he thought that would be more

expensive. In his view the group was too diffuse to solve this problem at this point in time, and there appeared to be no collective understanding that anything actually needed to be done.

JB referred to the study carried out for the DTI, Ofgem and the HSE in November 2003 by Ilex Energy Consulting (now Poyry) and whether this had led DC to conclude that there was a clear economic benefit in providing for non-compliant gas to enter the UK. DC responded that there might be a benefit for gas prices – maybe by 0.5p per therm. EP responded that this order of benefit would be of interest to his members and would therefore support further development through the workshops as suggested by National Grid Gas.

The meeting was then asked for its agreement to proceed to three further workshops on the lines suggested by National Grid Gas. The meeting gave this agreement with the proviso that development of the service definition and registration mechanism might proceed better in parallel as the meeting had established some key linkages between the two.

6 Next Steps/Diary Planning

The following dates were agreed for the workshops:

Monday 21 May 2007 - Gas Quality Workshop 2

Monday 18 June 2007 - Gas Quality Workshop 3

Friday 27 July 2007 - Gas Quality Workshop 4 (provisional)

All these to take place at 10.00am at Elexon, 350 Euston Road, London NW1 3AW.

Action Log: UNC Transmission Gas Quality Workshop 1 (23 April 2007)

Action Ref	Meeting Date(s)	Minute Ref	Action	Owner	Status Update
GQ 001	23/04/07	3	Ofgem to ensure that all previous responses were made available on its website.	Ofgem (RB)	21 May 2007
GQ 002	23/04/07	4	MW to consider making a version of the ABB study available to view on a website.	NG NTS (MW)	21 May 2007
GQ 003	23/04/07	5	MW to provide details of Nitrogen Ballasting Plant capacity and how this relates to assumed flows and qualities of high Wobbe gas.	NG NTS (MW)	21 May 2007