

Background

In order to ensure the safety of consumers all gas networks set out the specifications for the gas quality that the networks are able to accept. In the UK these specifications are set out in legislation via the Gas Safety (Management) Regulations 1996 ("GS(M)R"). National Grid, the operator of the National Transmission Network is unable to accept gas that is outside of these specifications. The UK Government has indicated that the GS(M)R specifications will not change in the foreseeable future². Gas interconnectors, such as Interconnector UK Limited (IUK) or BBL Company B.V have entered into contractual relationships that ensure that the gas they receive, at Zeebrugge or Balgzand, is compliant with GS(M)R specifications. These contractual relationships have an impact on the markets in neighbouring upstream countries, limiting flexibility and potentially increasing the cost to non-GB consumers.

One of the key components of gas specifications is the Wobbe Index ("WI"). The UK gas specification is narrower than that which is acceptable in continental European countries i.e. gas that can enter the German, French or Belgian systems, for example, cannot enter the UK. The UK is able to accept gas with a maximum WI value of 51.41 MJ/m³. However in Belgium the maximum WI value is 53.91 MJ/m³, whilst the maximum WI value for France is 53.5 MJ/m³, and for Germany the figure is 53.63 MJ/m³. In the Netherlands the current maximum is 51.24 MJ/m³ but is likely to increase in the very near future to 52.85 MJ/m³. Therefore gas which is able to flow freely between markets in continental Europe, is unable to enter the UK. To date Fluxys, the Belgian system operator, has been able to ensure that UK specification gas is delivered to the entry point of IUK at Zeebrugge by utilising flexibility within its grid.

However this has knock on effects on Fluxys' ability to accept gas flows into its system, which means that in effect the GS(M)R specifications represent a potential impediment not only to the import of gas into the UK, but also to cross border gas flows in the wider North West European market. Effectively the UK has "exported" its gas quality specifications into other European networks because of the impact it has on the various TSOs' management of gas flows within their systems, and the inter-operability of the different networks. This potentially reduces the interconnectivity of European markets and therefore can adversely impact the functioning of the European internal gas market. In this context we note regulatory authorities' duties under the Third Gas Directive to "take all reasonable measures . . . (in) eliminating restrictions on trade in natural gas between Member States, . . . and enhancing the integration of national markets which may facilitate natural gas flow across the Community."³

¹ Project Discovery: Energy Market Scenarios Page 5.

² Department for Business Enterprise & Regulatory Reform. "Future Arrangements for Great Britain's Gas Quality Specifications. Government Response to consultation on future arrangements for Great Britain's gas quality specifications." November 2007

³ Directive 2009/73/EC concerning common rules for the internal market in natural gas. Article 40 paragraph c.

This problem is now more pressing for reasons explained below. In order to be able to accept higher WI gas, the UK would need to invest in gas blending or nitrogen ballasting facilities to lower the WI of gas landed at Bacton via the interconnectors to within GS(M)R specifications. The key question is how to ensure that the regulatory framework is conducive to such investment.

The problem

Because of the differences between the UK gas specifications and those in continental Europe, it has long been recognised that there could be a potential problem for the GB market attracting sufficient UK specification gas to transport to the UK via interconnectors. However a number of factors made this problem appear less urgent when it was last examined by Ofgem and the industry a few years ago. Firstly, although gas import dependency was increasing, it was at a lower level than that envisaged in some Project Discovery scenarios. Secondly it appeared that there were sufficient supplies available to Fluxys at Eynatten on the Belgian / German border to ensure UK specification gas could reach the Interconnector at Zeebrugge. This gas was essentially Russian gas in origin which had transited Germany⁴. Uncertainty over likely import flows into the UK, and the source of such imports (e.g. pipeline or LNG) meant that it was not clear when the problem would become pressing.

However, following analysis conducted by Fluxys and Gas Transport Services this summer, it is clear that it will be increasingly difficult to guarantee the flow of UK compliant gas to the IUK Interconnector in the future. This is due to the following:

- **Changes in gas flows entering the Belgian system at Eynatten.** The immediate change is that flow patterns at Eynatten have altered over the last couple of years. They are now more erratic, and less seasonal, which means that Fluxys is less able to rely on flows of UK compliant gas via the VTN/RTR pipeline from Eynatten to Zeebrugge to input into the Interconnector when the UK is importing gas. It is possible that the changes to flow patterns are an inevitable consequence of liberalisation of gas markets. As European gas markets continue to liberalise, more flows will be driven by price differentials between markets. The ability to trade at hubs means that suppliers will also increasingly source gas at hubs to supply their customers. Consequently it will become much harder to predict not only the flows of gas, but which shipper is supplying gas of a certain quality as streams are commingled.

A longer term risk is that future specification of Russian gas via North Steam is likely to change compared to existing supplies. Initial information shows the new sources of gas to have a higher WI (above the GS(M)R limit), as new fields replace current Russian production.⁵

- **Changes in the quality of Norwegian gas entering the Belgian system at Zeebrugge.** Gas from Norway reaches Zeebrugge via the Zeepipe and lands at the ZPT gas terminal. If this gas is within UK specifications, Fluxys can use such gas to

⁴ ILEX Energy Consulting. "Importing gas into the UK – Gas quality issues." November 2003. Paragraph 8.14

input into the Interconnector. However Fluxys cannot take the risk of attempting to input non UK compliant gas into the Interconnector as this would breach contractual limits and risk shutting in the Interconnector. Therefore Fluxys has to take a cautious approach depending on the various flows in the pipelines leading to Zeebrugge. Over the past two years there has been an increase in the WI value of Norwegian gas arriving at Zeebrugge, as a result of production from new fields, making it more difficult for Fluxys to ensure UK compliant gas is available at the Interconnector inlet. It is important to note that the Norwegian gas delivered is within Belgian specifications and the Norwegian shippers are acting fully within their contractual rights. It is only the differential between UK and continental European specifications that creates a problem for the UK.

- **Increased LNG imports.** It is not possible in principle for LNG which is landed at Zeebrugge to flow directly into the Interconnector, as the WI of LNG exceeds GS(M)R specifications. To enable nominations from the LNG terminal to the Interconnector to be honoured, Fluxys mainly relies on swaps with other sources of gas e.g. Norwegian if it is within UK specifications. In addition future flows of LNG into the Netherlands from the Rotterdam terminal will exacerbate the problem because of the impact this will have on the quality of gas flowing into Belgium from the Netherlands.

As a result of these developments Fluxys is now at the limit of its ability to ensure that GS(M)R specification gas is able to enter the Interconnector at Zeebrugge. It is only a matter of time before the UK will be unable to import pipeline gas from continental Europe because of different gas specifications.

Impact on the UK gas market

The problem with gas quality issues is that they may occur at any time. As noted above flows are becoming less seasonal in nature, so it is quite possible that the UK could face an import shortfall at a time of seemingly plentiful supply. The likely consequence would be an increase in UK NBP prices relative to European hub prices. However the quality constraint would mean that gas flows via interconnectors could not respond to the higher prices. The scale of the impact on UK gas prices would depend on the ability of other sources of gas (e.g. storage, LNG) to respond, but it is entirely likely that the UK could suffer price spikes of the size seen in the past, with consequent costs for UK consumers.

Suitability of current market arrangements

In the past Ofgem appears to have preferred to take the approach that “the market” should be left to solve this impending problem. This was the status after Ofgem led industry discussions a couple of years ago. However at that time there were market participants who were concerned that such an approach would not lead to the investment in gas quality treatment capacity that would be required to resolve the problem. To date the market has not delivered a solution. Given the long lead times, contractual and regulatory complexities, it seems unlikely the current approach will lead to timely investment. There are a number of

⁵ It was this possible departure from the assumptions of the ILEX report that led to Gazprom Export and Gazprom Marketing & Trading working with the other members of the group to assess the potential impact, and to highlight the problems to Ofgem.

reasons why “the market” may not deliver a solution in a way which is compatible with ensuring UK security of supply:

- **Shippers will only invest when they will be assured that they will be able to recover the cost of any investment.** In practice this means they will need to be certain that the price they receive for gas in the UK is greater than the price they could receive for gas in Europe plus the cost of any treatment capacity. Once this differential is large enough and sustained enough, shippers will, *ceteris paribus*, invest. However different shippers will have different views on the variables and the timing, which may make it difficult to agree the timing and scale of any project. In the meantime, given the right combination of circumstances, the UK could suffer price spikes if the Interconnector is shut in.
- **It is difficult to attribute the costs of non UK specification gas to individual shippers** due to commingled streams within continental European pipeline networks. The ability to source gas at hubs means that shippers do not know the source of their gas; all they know is that it is within the specification of the hub at which they buy it. However, as already noted, European hubs allow higher W1 value gas than the UK. From another point of view an Interconnector shipper who has a supply contract delivering UK specification gas into Belgium may understandably object to be required to pay for gas treatment capacity services provided by the IUK since he is not the cause of the problem. This further complicates the process for obtaining agreement between importing shippers for investment in gas treatment capacity.
- **Market participants may have a different risk profile from those of UK consumers.** For example for shippers the risk of stranded assets (i.e. investment in treatment capacity which is not used) may outweigh the risk of price spikes in the UK. By contrast UK consumers may take a different view. However, if a market approach is used, it will be the shippers' view which will prevail, since there is no clear mechanism for consumers to invest directly.
- **There needs to be clarity concerning the regulatory framework.** Shippers who invest in or book gas treatment capacity will need to know the terms on which they can use that capacity, and whether it will be subject to any regulatory requirements (for example “Use it or Lose it” requirements). This is particularly important if shippers are investing on a commercial (as opposed to a regulated) basis with no guarantees that they will be able to recover their investment. It is also possible that the most cost effective solution could involve investment in treatment or blending capacity in more than one regulatory jurisdiction, even though the aim of the investment is to solve the UK's gas quality problems. If there are cross border investments, this will require the cooperation of the relevant regulatory authorities.

The above points illustrate the potential for market failure leading to the UK not having sufficient treatment capacity available in a timely manner. Ofgem needs to weigh up the costs of establishing a regulatory framework which guarantees a level of capacity in a

timescale compatible with UK consumers' risk appetite versus the risks that the market will not deliver on time.

Ultimately it is UK consumers who will gain most benefit from investment in gas quality treatment capacity because of its beneficial effects on the UK's security of supply. A regulated approach, whereby the investors are assured a return on investment with any under-recovery of costs targeted on consumers is more likely to lead to timely investment. Targeting costs on consumers will also minimise any distortions to the market. The cost to individual consumers of any under recovery will be minimal and can be regarded as an insurance premium against the risk of price spikes, the cost of which consumers will in any case have to bear in the absence of any investment.

We hope you find these comments useful. The group would be happy to discuss these issues with you further.

Yours sincerely,



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On behalf of

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