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20th November 2009

Dear Ian

Gazprom Marketing & Trading Response to “Project Discovery – Energy Market Scenarios”

Gazprom Marketing and Trading Limited (“GM&T”) welcomes the opportunity to comment upon Ofgem’s Project Discovery Energy Market Scenarios document. Gazprom Marketing & Trading is the UK registered wholly-owned subsidiary of Gazprom Group (“Gazprom”), responsible for the optimisation of Gazprom’s energy commodity assets through GM&T’s marketing and trading network. GM&T manages a 10% stake in Interconnector UK Limited (“IUK”), and has capacity rights in IUK’s pipeline connecting Zeebrugge in Belgium and Bacton in the UK.

Gazprom and its subsidiary GM&T are committed to the successful functioning of the UK energy market. As well as being a significant wholesale gas market participant in the UK, GM&T supplies industrial and commercial customers via its Gazprom Marketing & Trading Retail (“GM&TR”) subsidiary in the UK. Gazprom is, and has been for 40 years, a major supplier of gas to Europe. Gazprom continues to invest significant sums of money to ensure long-term supplies of gas to the European market.

I would like to draw your attention to two factors which have a bearing on supplies of gas to the UK. The first is the efforts that Gazprom is undertaking in ensuring that Europe continues to receive the gas it needs, which in turn will aid the security of supply of the UK. The second is the potential impact of the misalignment of the gas quality specifications of the UK with the rest of Europe.

Ensuring supplies of gas to Europe.

Gazprom’s efforts to ensure future European supply rest on three pillars, namely investments in:

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- Gas production.
- New routes to market (pipelines and LNG).
- European gas storage.

The Project Discovery report highlighted the importance of Russian gas supplies to Europe, and the potential impact on the UK if there is disruption to those supplies. New gas production will help ensure that Europe has access to gas supplies as Europe's own indigenous production, including that of the UK, declines. Investment in new routes to market increases the diversity of supply routes into Europe; combined with investment in storage facilities, it increases Europe's resilience to any potential supply shocks. So long as the UK is able to access gas in continental European markets, this will also help the UK's security of supply. Below I describe what Gazprom is doing which addresses those issues.

Investment in gas production.

Today Russian gas accounts for 40% of import supplies to Europe, which equals 26% of total European consumption. Europe is Gazprom's most important market and has been historically over the last 40 years. This interdependence brings responsibilities for both sides. Gazprom is committed to stable gas supplies to Europe, and applies its best efforts to achieve that.

The energy partnership with Europe will become even more important in the future since Gazprom forecasts European gas demand to grow. Within the EU there is a significant increase in the shortfall between production and consumption anticipated between now and 2030. According to Eurogas estimates demand for gas in the EU will increase from 489 bcm today to 694 bcm by 2030. Also European production, including Norway, accounted for 59% of 2005 supplies to EU gas markets and is expected to drop to 33% by 2020 and to 25% by 2030. Gazprom believes it can help meet Europe's future supply needs for the following reasons.

First, Gazprom owns the world's richest natural gas reserves that, at the start of 2009, were estimated at 33.1 trillion cubic meters. The company's resource base is undergoing continuous development. Gazprom is successfully undertaking geological exploration – over the last four years, gas reserve additions through exploration have surpassed the volume of gas production. Furthermore, last year Gazprom obtained licenses for a number of strategically important fields in Russia with aggregate reserves averaging four trillion cubic meters. At the same time, work is successfully underway in obtaining new licenses for promising areas abroad. Gazprom believes that the company's efforts targeted at replenishing and expanding its resource base are a crucial aspect of the system Gazprom uses to provide energy security for all customers for decades to come.

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Second, Gazprom's most important contribution to enhancing security of gas supply is through its creation of new gas production regions in Russia.

Gazprom is a global leader in gas production, accounting for 17 percent of global gas production and is the largest gas exporter. Available production capacities enables Gazprom to extract up to 570-580 billion cubic meters of gas per annum, which gives the company the opportunity to flexibly respond to gas demand changes and reliably fulfill all gas supply contracts.

Among the new production regions are the Yamal Peninsula, Arctic shelf, Eastern Siberia and the Far East. In the Yamal Peninsula, Gazprom has begun developing the Bovanenkovskoye field, the biggest on the Peninsula in terms of gas reserves. Gazprom has also begun constructing the Bovanenkovo – Ukhta gas transmission system. Gas production from the field is projected at 115 billion cubic meters per annum, to be increased to 140 billion cubic meters in the long term. The first startup complexes to pre-develop the Bovanenkovo field, rated at least at 15 bcm of gas, as well as of the Bovanenkovo-Ukhta gas trunk line system, are due to be commissioned by the third quarter of 2011.

Another region of strategic interest for Gazprom is the Russian Arctic shelf. The region contains immense hydrocarbon resources, which should enable the company to establish a new oil and gas production province. The Shtokman field development will become Gazprom's pilot project on the Arctic shelf developed jointly with Norway's StatoilHydro and France's Total. The field's C1+C2 reserves account for 3.8 tcm of gas and circa 37 mt of gas condensate. The Shtokman development project envisages annually producing some 70 bcm of natural gas and 0.6 mt of gas condensate comparable to the annual gas output of Norway, one of the largest European gas suppliers. Phase one contemplates annual production of 23.7 bcm of natural gas with the startup of gas supply via the gas pipeline due in 2013, and liquefied natural gas supply in 2014.

Gazprom invests enough to fulfill its long-term obligations. For instance, Gazprom's investment program for this year is RUB 761.5 billion, which is approximately USD 25.5 billion. What is more, Gazprom has the necessary experience, technology, business partners, and risk management tools to successfully implement these projects on schedule. Those who have signed long-term contracts can be confident about the sufficiency of investments for securing deliveries in the next economic cycle.

Investment in new routes to market.

Gazprom is investing in new pipeline routes to market. In addition to enhancing the company's existing gas transmission system and developing its resource base and production capacities, Gazprom is working on creating new export corridors. Work is underway to implement two new gas transmission projects – Nord Stream and South Stream.

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The Nord Stream gas pipeline, with a full capacity of 55 billion cubic meters per annum, will run under the Baltic Sea and link Russia and Northern Europe's gas transmission networks. Construction is expected to start as early as April 2010 and the pipeline's first line is due to begin operation in 2011. The first stage of the project will have capacity of 27.5bcm per annum and the second with similar capacity will be put in to operation in 2012. Denmark, Sweden and Finland have all granted permits for the pipeline.

Together with its partners, Gazprom has all the necessary resources to complete South Stream by 2015 with full capacity of up to 63 billion cubic meters. The pipeline will not only help to meet the local gas demand of its host countries, but also enhance the overall reliability of gas supplies to Europe. Designed as a truly European project, all onshore parts of South Stream will be built and operated in co-operation with local energy companies, while the off-shore sector through the Black Sea will be managed by Gazprom and ENI. South Stream is primarily designed to meet demand of the South Eastern and Central European countries including Bulgaria, Hungary, Serbia, Greece, in addition to Italy and Austria. There are many possible routes under review for the two branches of South Stream's onshore section from Bulgaria - one, north-westwards and the other, south-westwards. The precise configuration of the project will be determined once the feasibility study has been completed – which is currently anticipated by the end of 2009.

As noted above Gazprom plans to invest in new LNG production as part of the Shtokman development. (Gazprom already exports LNG as part of the Sakhalin II project.) LNG has the advantage that it is flexible in how it can reach end user markets, so long as there are LNG receiving terminals in place to accept the LNG cargoes. LNG is therefore able to respond to changing market conditions in different countries.

Investment in European gas storage.

To guarantee the reliability and the continuity of Russian gas deliveries to Europe, Gazprom is also investing in underground gas storage facilities. Gazprom Export is currently working on six European storage projects, which are now at various stages of implementation. For example Gazprom has signed an agreement for the Bergermeer Gas Storage project in the Netherlands which will be Europe's largest gas storage facility, with a working gas capacity of 4.1 bcm. The project's Final Investment Decision was announced in October 2009.

The potential impact of gas quality.

Greater connection with continental European gas markets via pipelines such as the Bacton-Zeebrugge and Bacton-Balgzand interconnectors should enhance UK security of supply as UK indigenous production declines. However this

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assumption is predicated on gas being able to flow freely between markets. Although it has not been a problem to date, this is not necessarily the case in the future because of the UK's different gas specification requirements.

National Grid, the operator of the UK National Transmission System, is unable to accept gas that does not conform with the UK's Gas Safety (Management) Regulations ("GS(M)R") quality specifications. A principal component of these 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. If this were to happen at a time when the UK gas supply-demand was tight, for whatever reason, it could result in price spikes and / or interruptions in the UK market, even though there might be plentiful supply elsewhere in Europe.

To date, Fluxys, the Belgian network operator, has been able to ensure that UK specification gas has been able to reach the entry point for the Interconnector at Zeebrugge. However, following analysis conducted by Fluxys and Gas Transport Services, the Dutch network operator, this summer, it is clear that it will be increasingly difficult to guarantee the flow of UK compliant gas to the 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 supplies of Russian gas via Nord Stream may no longer be of the same specification as before. 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.

- **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 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.

GM&T, along with colleagues from IUK, Fluxys and GTS, brought these changes to Ofgem's attention during a number of meetings over the summer of 2009. GM&T welcomes Ofgem's decision to hold an industry workshop on the subject on 18th November 2009. However GM&T believes it is worth raising the topic in the context of Project Discovery as well.

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. GM&T is concerned that such an approach will not lead to the investment in gas quality treatment capacity that would be required to resolve the problem. There are a number of reasons why "the market" may not deliver a solution in a way which can ensure UK's security of supply:

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- **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 higher 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 time line 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 Wobbe Index 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 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.

For these reasons we believe Ofgem should give serious consideration to a regulated type approach, whereby investment in treatment capacity is included in a company's Regulated Asset Base, and any under recovery of revenues is recovered from end users. Such a cost recovery approach can be regarded as the insurance premium end users pay to protect them from the impacts of price spikes. By targeting costs specifically at end users (for example by adding the costs to exit charges) the approach ensures that those who benefit from such insurance pay for it, without penalizing those importing shippers who may have already invested in gas treatment capacity. (The latter would occur if the costs were added to entry charges). So long as the perceived value of the risk of price spikes exceeds the under-recovery costs applied to exit charges, end users should be happy with this approach. As the cost of any under recovery will be spread over all end users, the impact on individual bills should be minimal.

By removing the uncertainty of potential stranded costs, the regulated approach makes it easier to address the uncertainty of when investment needs to be made, and therefore it is more likely that investment will be made "on time" rather than "a little bit late". It also makes it easier to ensure that the treatment capacity will be sufficient to meet the overall market's needs rather than simply those of the shippers' who are prepared to invest at the time an investment decision is made. In doing so it removes the problem caused by commingled streams of gas, since shippers will pay for the capacity when they use it, irrespective of whether they believed capacity was needed at the time the decision to invest was taken.

I hope the above comments are useful. If you have any queries please do not hesitate to contact me on ++ 44 20 8614 3036 or at alex.barnes@gazprom-mt.com.

Yours sincerely,

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