

## **Large Scale Investments in Liberalised Gas Markets: The Case of UK<sup>1</sup>**

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This paper addresses two main questions:

1. Which investments are proceeding and planned in the UK gas market?
2. How are these able to proceed in a fully liberalised gas market given that a major issue for European markets is whether liberalization of gas markets adds to the risk of major investments and therefore the danger of failing to attract large scale long-term supplies.

### **Background: the UK gas market**

The UK has the largest gas production, the largest market and the only fully liquid open gas market in Europe. The Natural Gas Act in 1986 started liberalization in stages of the entire UK gas market. These reforms were highly successful, resulting in encouragement for producers to produce and sell gas as much gas as possible as fast as possible; the development of a spot gas market; in the creation of a huge market for gas in power generation while at the same time liberalizing the entire gas market down to the residential level. Over the past two decades, gas rose from 23% to 41% of UK energy demand (113 billion cubic meters –bcm- in 2002). It has been self-sufficient, and even a net exporter since 1997. However, by 2002, UK indigenous production had begun to decline and most projections -including those from the 2003 Energy White Paper- suggest that this decline would accelerate over the next 20 years, while gas consumption is envisaged to continue to increase.

### **Investments proceeding and planned in the UK gas market**

The UK appears to be facing a future of increasing import dependence. More than sufficient supply is available in a variety of countries to which access could be created in piped or liquefied form. The major concern for gas companies relate to the potential impact of energy liberalization on the development of very large-scale upstream projects.

The majority of short to medium term gas imports will come from the Netherlands and Norway. National Grid Transco (the TSO) has projected gas import requirements around 24 bcm for 2006/7, 55-80 bcm for 2010-11 and 75-100 bcm for 2012-12<sup>2</sup>. Many projects are under construction or planned to supply gas to the UK. The new gas imports projects are:

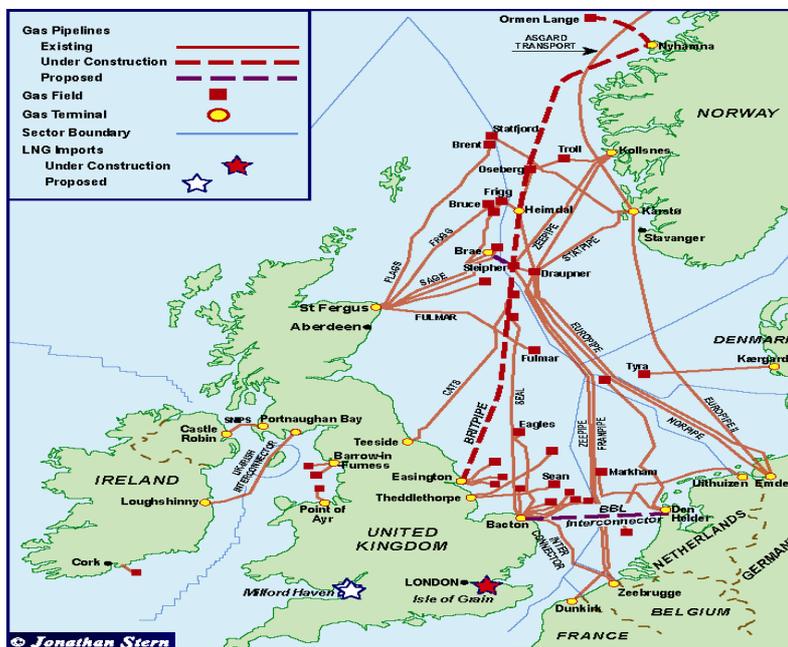
- Ormen-Lange pipeline from Norway (under construction)
- Interconnector (IUK) expansion (under construction)
- Bacton-Balgzand BBL (under construction)
- Isle of Grain Train 1 (under construction)
- Dragon LNG Milford Haven terminal (planned)

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<sup>1</sup> We use the term “UK” but most of this paper is about “Great Britain” – England, Scotland and Wales.

<sup>2</sup> National Grid Transco, *10 Year Statement*, December 2003.

- Qatargas LNG 2 Milford Haven terminal (planned)
- North European Pipeline – Russia (Baltic Sea) to Germany and UK (planned)



Estimated investment requirements for these projects range from \$250m to \$10bn in the case of the Ormen Lange field and pipeline from Norway. Total annual import capacity existing and under construction (not all of which has committed gas reserves) adds up to 70-80 *bcm* for 2006-07. This could increase to as much as 120-130 *bcm*/year if LNG plants are built and expanded. These figures are much larger than the projected demand for imports noted above. The question then is: how and why are these projects able to proceed in a fully liberalised gas market? We try to answer this question by looking at the most expensive project – the Ormen Lange field and pipeline project from Norway.

### The Ormen Lange Project

This is a very capital intensive project - \$8-10bn - which will deliver up to 24 Bcm of gas per year from the Ormen Lange field in Norway to the Easington terminal in Britain. The project has a construction time of 4 years (although the pipeline will be able to deliver gas within three years, the field will not be available for another year after that). The partners in the project are a group of large international energy companies: Norsk Hydro, Statoil, Shell, BP, Exxon and the Norwegian state company Petoro.

Many of these companies have said on many occasions that it would be impossible to invest in multi-billion dollar projects without long term contracts. And yet, it is striking that although the project is under construction, no long term contracts have been announced and Norsk Hydro has said that it does not intend to sign any such contracts for its share of the gas. The only company which could use an existing contract is Statoil which has a contract with Centrica for 5 Bcm/year

for 10 years at NBP prices for delivery at that location.<sup>3</sup> It appears that other sellers intend to develop a portfolio of long, medium and short term sales and possibly also arbitrage between UK and Continental European gas markets depending on price differentials.

Why were the Ormen Lange partners willing to take this kind of risk? The reasons why the companies and the financiers are relaxed about gas supply contracts is because (1) they will be selling their gas into the largest, liquid market in Europe; (2) the UK market is running short of gas and will need substantial new supplies, and (3) most equity holders have market operations in the UK and customers on the Continent which give them arbitrage possibilities and recognition that Ormen Lange will be among the lowest cost sources of gas in the UK. All Ormen Lange sellers will need long term transportation rights in Langepipe (Britpipe) and long term entry capacity to the UK network at Easington but the Norwegian offshore capacity regime and the British entry capacity auctions are well established.

### **Exemptions from third party access - Article 22 of the 2003 EU Gas Directive**

Because of the concern that market liberalization would undermine the ability and willingness of sellers and buyers to enter into long-term take-or-pay contracts to support new multi-billion dollar “green-field” infrastructure outside Europe, provision was made in Article 22 of the 2003 “Acceleration Directive” for major new gas infrastructures -interconnectors between Member States, LNG facilities, storage facilities- be exempted from the access requirements of the Directive under certain conditions (EU, 2003)<sup>4</sup>. Several national regulators -including Ofgem- have signaled that they will consider favorably applications for exemptions from LNG terminal developers and interconnector projects. These provisions will not be sufficient to ensure that very large greenfield investments proceed. But they may be necessary to the success of large supply projects. Virtually all new import project – Isle of Grain LNG, the 2 Milford Haven projects, and the BBL pipeline - have been granted exemption from TPA under Article 22. Ormen Lange, which would have had a much stronger case for an exemption than many of the smaller projects, did not seek any exemption and is proceeding without it.<sup>5</sup>

### **The North European Pipeline (NEP)**

A contrast to the Ormen Lange project is the North European Pipeline (NEGP) across the Baltic Sea. This would require an initial investment of around \$5-7bn (including the offshore line and some onshore connections to existing Russian pipelines). NEP has become a highly political project given its adoption by the EU-Russia Energy Partnership as a “project of European interest”. The cost of gas will be at least \$3/mmbtu delivered to Germany with a higher delivered price in the UK. Moreover, there is no well established regulatory regime for gas transmission in Russia and the NEP will most probably need to be legally unbundled. However, the major threat associated with this project in the UK (and potentially Continental European gas markets) is the risk of selling gas into a liberalised market which has a much higher cost of delivery than

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<sup>3</sup> Shell also has a smaller and more flexible contract with Centrica which could use Ormen Lange gas.

<sup>4</sup> *Article 22 of the 2003 Directive* which states that projects may receive time-limited exemptions from access conditions from EU and national energy and competition regulators if they 1. enhance competition and security, 2. would not go ahead without an exemption, 3. have ownership legally separate from the main system operator, 4. levy charges for the use of the infrastructure, 5. are not detrimental to EU or national competition or regulation.

<sup>5</sup> It is uncertain whether Ormen Lange would have qualified for an exemption because: Norway is not a full EU member and therefore the project is not an interconnector (although a case could have been made that it is) or an LNG project.

competing imports at a time when the market appears as if it will be oversupplied with gas. This is the main risk which NEP investors will need to consider before they decide to proceed.



## Conclusions

*So in conclusion let us try to answer the questions which we posed at the beginning of the paper:*

### *1. Which investments are proceeding and planned in the UK gas market?*

Many pipeline and LNG projects are under construction and planned to supply gas to the UK; probably far too many given likely demand.

### *2. How are these able to proceed in a fully liberalised gas market?*

Many projects have received exemptions from TPA under Article 22 of the 2003 EU Gas Directive but this will not protect them from potential losses in a liberalised market. Some of these projects will almost certainly not be profitable during a period of oversupply and low prices. The conclusions from this analysis seem to be that:

- cost will determine profitability
- producers have much gas to sell and no alternative markets (at least up to 2010)
- risks are acceptable given established rules of liberalised markets

So the main conclusion is that a fully liberalised UK market does not seem to deter very large investment projects, even when the profitability of some projects may be questionable given anticipated market conditions.

## References:

- EU, 2003, *Directive 2003/55/EC of the European Parliament and the Council Concerning Common Rules for the International Market in Natural Gas and Repealing, Directive 98/30/EC* International Energy Agency, 2003, *World Energy Investment Outlook*, Paris
- Stern J., 2004, *UK Gas Security: Time to Get Serious*, Energy Policy Review, n.32 pp 1967-1979