

1st December 2009

Kersti Berge, Head of GB Markets, and
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Sent electronically: project.discovery@ofgem.gov.uk

Dear Kersti and Ian,

Project Discovery – Energy Market Scenarios

Oil & Gas UK is the trade association which represents the offshore oil and gas exploration and production industry in this country. We have some 90+ members from the largest, well known oil and gas “majors”, through a wide range of large, medium and small independent production and exploration companies, to a variety of supply chain businesses covering all aspects of the industry.

We thank you for the opportunity to contribute to this review. Rather than answer your specific questions in detail, for most of which there are others much better able to do so than we are, we would like to concentrate on a few broader matters relating to Ofgem’s analysis. However understandable, much of the public debate about future energy systems and supplies has tended to focus on a 20 to 40 year view of the way ahead, but there are some major obstacles to be overcome in the next 10 to 15 years, where time is short in energy industry terms. It is good, therefore, to see that Ofgem has concentrated on this timeframe.

Power Generation

We begin with a quick review of the government’s proposals regarding renewable energy and, in particular, electricity generation from renewable sources.

1. We are concerned about the effects on the energy industries as a whole of the government’s targets, by EU agreement, to have 15% of the nation’s energy supplies coming from renewable sources. However well intended it is – and this is not in doubt – the scale of the ambition is, in our firm belief, beyond reach and poses significant risks for all energy related activities.
2. Even if the licensing and planning procedures can be accommodated, the financing secured and grid connections made (and we suggest that these are very large “ifs”), the number of wind turbines required is so large (e.g. 5,000 units of 5MW each, in Round 3 offshore, to be installed in the seven years,

2014-2020, a rate of more than 700 per year) that the resources simply do not exist to achieve this building programme.

3. The costs are already very large – another clear indicator of disproportionate consumption of resources – and the pressures in the supply chain that this will induce will drive costs even higher. This inflation of costs will spill over into the whole of the energy and process industry sectors (power, oil, gas, chemicals, water and so on), upsetting the economics of their operations and investment programmes. Ultimately, it will push the price of energy ever higher for all consumers, industrial, commercial, public and domestic.
4. In the years 2006-7-8, a period of strong investment, the oil and gas industry experienced exactly this effect, with a shortage of resources (capital equipment and human) restraining activity and inflating costs worldwide. Only in the current economic down-turn is it proving possible to bring costs under control again.
5. It is clear that new nuclear and “clean” coal (i.e. with CCS) generation, in any significant quantity, is some 10-20 years away.
6. On a 10, or perhaps 15, year view, only one source of electrical power can deliver the government’s triple objectives of security of supply, reducing emissions and affordability, alongside a steadier programme for renewable energy, and it is gas. The technology is proven with high operating availability, its capital cost is the lowest, it has short construction time and can be built at the large scale necessary to replace existing coal, oil and nuclear power stations which are to be retired in the next ten years (ref. Fig. 3.9 on page 40); gas also has the lowest carbon content of any fossil fuel and the highest generating efficiency, thereby reducing emissions per unit of electricity produced by 50% compared with current coal fired power plants.
7. In any event, with significant volumes of intermittent, renewable power in future years, flexible back-up generation will be required and this is likely to be mainly gas fired, but this raises the questions of who will build such plant for back-up use only and how it will be funded.

It is this reality with power generation which needs to be acknowledged before all else. We believe that it is likely to lead to higher demand for gas than is represented in Ofgem’s two green scenarios, although maybe not as high as in the other two. This is so important to the overall outcome that we propose that independent analysis should be undertaken by established consultants in this field, through DECC and Ofgem under their joint work producing the Energy Markets Outlook. This will help resolve some of the uncertainty about gas demand to which Ofgem rightly points in paragraph 1.17 of “key messages” on page 5 of its document.

Gas Supplies

Much has been written about gas supplies in recent years, sometimes in unduly pessimistic terms because, Oil & Gas UK believes, of misunderstandings about market dynamics and likely new developments. Proven reserves of gas amount to more than 60 years of current consumption and some 70% of these reserves are within economic transport distance of the EU. Furthermore, it is estimated that there are another 100 years of the current consumption of gas available around the

world waiting for technology to unlock them and turn them into proven reserves. Notably, this has already begun in the United States of America with shale gas.

We highlight below some of the salient factors which are changing gas supplies and markets worldwide to the benefit of British consumers.

1. The availability of gas has improved recently in two major ways: i) the rapid expansion of the production of shale gas in the USA and ii) completion of several previously delayed, new gas liquefaction plants in the Middle and Far East, with further capacity coming on-stream in the next few years. LNG is now being traded more like oil and cargoes are increasingly moving in line with pricing signals, rather than being constrained by long term contracts, which will benefit GB over other less open markets. Nonetheless, around the world, LNG is still mainly supplied under long term contracts.
2. As far as Russian gas supplies are concerned, at the moment we currently have no dependency of them, although other western European countries clearly do. However, the development by Gazprom and its EU partners of the twin Nord Stream pipelines along the Baltic Sea to Germany and potential development of South Stream across the Black Sea into the south-eastern EU should ensure the free flow of Russian supplies in future years.
3. In addition, the proposed new Nabucco pipeline from the Caspian region into central Europe moves ever forward.
4. It should not be forgotten that, as much as buyers in the EU (and elsewhere) need the gas, sellers need the revenue. More than 50% of Gazprom's income comes from sales of gas to EU countries and it is paid in hard currency.
5. Within the EU, it will be important to ensure that the recently agreed "third package" of liberalising measures is fully implemented. Current signs in Germany, the most important gas market in continental Europe on account of both size and geography, are encouraging (the UK is the EU's largest market, followed by Germany and Italy). Open energy markets form a fundamental part of ensuring security of supply.
6. Encouraging the development of indigenous supplies of gas (and oil) is policy here in the UK and has become so more recently within the EU as a whole. Under the IEA's Reference Scenario, the EEA (i.e. including Norway) could still be producing nearly 50% of EU gas requirements in 2020 and 45% in 2025.
7. The one area requiring improvement on a five to ten year view, here in the UK, is gas storage. Various projects have been badly delayed in planning and subsequently, in some cases, by a lack of finance. The new planning regime should improve matters, but this needs to be kept under close review to ensure delivery, as intended. It is entirely plausible to consider that some of the difficulties experienced in recent years would have been ameliorated if more storage projects had been able to move forward in line with their developers' original plans.

LNG and Gas Storage

We are not convinced that Ofgem has understood how the LNG market will behave, bearing in mind our comments above about long term contracts. Liquefaction plants are the most expensive parts of an LNG supply chain, followed by LNG ships, with reception and re-gasification terminals third by a substantial margin. Therefore, it is normal to operate the

first two at typically 90% of their nominal capacity over time (allowing for inspection and maintenance), whereas terminals typically only operate at about 50% of capacity, because they provide the essential flexibility for matching demand with supply. In other words and looking world-wide, there should always be excess capacity in terminals; if there is not, the whole LNG supply chain will cease to function properly.

This leads to the significance of gas storage. Demand for gas is obviously higher in (northern hemisphere) winter than summer, but LNG tends to be produced at constant rates. It is, therefore, necessary to be able to store gas, whether supplied as LNG or by pipeline, during times of relative plenty – in summer – in order to use it in times relative scarcity – in winter. Only storage can do this in sufficient quantities. Indeed, before the recent upturn in US production, this was how the market there balanced its needs during winter, by importing large volumes of LNG during the summer and putting the gas into store. Therefore, LNG should not be considered as the “swing” source of supply for the European market, as Ofgem contends, and GB’s need for more gas storage in future is not in doubt.

Ofgem’s statement in paragraph 1.17 of “key messages” on page 5 of the consultation document, “The greatest risk to security of supply appears to be maintaining gas supplies through a severe winter”, also points directly towards this need for more storage. Furthermore, the current surplus of gas in world markets should not be allowed to disguise or distort these basic facts regarding LNG supplies and the compatibility of LNG with storage.

Gas Quality

The subject of gas quality has been debated at length in recent years, given the different specifications that exist in various EU countries; the range specified under GS(M)R 1996 in this country is narrower than in almost all other EU countries. We attended Ofgem’s recent workshop on this, the outcome of which was rather disappointing given the information revealed by Fluxys about continental supplies through the Inter-Connector and future prospects once Nord Stream becomes fully operational in 2012.

Ofgem took the line it has always done, namely that the market will rectify that which is not working once a need has been properly established. However, we believe this is a mistaken viewpoint, because the problem is not a “market failure” as it is described, but an incompatibility in regulatory regimes between one EU member and another. There is a lack of interoperability which cannot be pinned on any one, or even several, market participants and, given the multiplicity of potential supplies of gas feeding the Inter-Connector in Belgium, this creates very substantial uncertainties for the market.

Ofgem also cites the position at LNG terminals, but as we wrote in 2007 during the previous review of gas quality “LNG terminals face few such uncertainties. Almost every source of LNG has a Wobbe index above the specification allowed under GS(M)R. A terminal’s capacity is fixed, so the investment decision is straight forward and, in an overall LNG scheme, a nitrogen ballasting plant at a reception terminal is a modest part of the total investment” (ref our letters to Ofgem of 26th February and 22nd August 2007). The position at Bacton (or Zeebrugge) is, quite simply, not analogous to an LNG terminal. If there is to be a fully functioning market across the EU, or even in substantial parts of it (e.g. in N.W. Europe), gas quality constitutes a significant barrier to trade which, assuming no change of specification under GS(M)R, we believe is going to have to be resolved via the regulatory regime governing the TSO(s). Otherwise, GB’s security of supply will be compromised.

We trust that these comments are helpful. Please do not hesitate to contact us, should you require any further information. We would be pleased to help. Given the implications for security of supply, we are copying this to DECC.

Yours sincerely,

A handwritten signature in black ink that reads "David." with a horizontal line underneath.

David Odling,
Energy Policy Manager.

Copy: Simon Toole)
Neil Feinson) - DECC
John Havard)
Peter Kershaw)