

## Gas – Fuel for the future

Remarks by Senior Vice President Hege Marie Norheim

IGU side event, COP 16, Cancun 2010

The energy challenge at hand is fundamentally about changing the energy system that is the basis for our modern civilisation – that will not be done over night. No single energy source can provide the solution – rather, the answer will come from a combination of existing sources and new technologies. In my remarks today, the focus will be on gas, which we in Statoil believe will play an increasingly important part of the energy mix, for at least three reasons:

### **An abundant resource**

First, natural gas resources are plentiful. Over the last decade, global proven gas reserves have increased by 70% and the reserve life for gas is now over 200 years, which is comparable to coal. This makes gas much more than a bridge to a low carbon society. It should – in our opinion – be a large and natural part of the world energy mix for the long term.

The recent development of so-called “unconventional” gas resources represents a radical transformation in the global security of supply picture and has made resources much more evenly distributed between continents. Between 2000 and 2009, production of gas from shale deposits in the US grew from almost zero to 10% of total US gas supplies – as a result, the US gas market is now close to self-sufficiency. The development of shale gas in the US has also indirectly improved supply security in Europe and Asia, through the redirection of LNG cargoes to these markets

Turning to Europe, it is time to dispel the myth of excessive import dependency for gas. Europe actually enjoys a diversified supply situation. Norway is an important and reliable supplier of natural gas – production of gas from the EU and Norway covers more than half of the continent's consumption. Gas is also sourced from Russia and North Africa, and increasingly from LNG sources all over the world. As a matter of fact, the EU is as dependent on imports of hard coal from third party countries as it is for natural gas. In addition to a high number of supply sources, Europe has at no point in history had access to a more interconnected and resilient natural gas infrastructure, and better functioning markets.

Also, there are still large volumes of conventional gas to be brought to the European market, and Statoil is part of these efforts. In the Caspian region, progress has been made regarding the future development of Shah Deniz II in Azerbaijan. Large resources are to be unlocked in the Arctic, such as the Shtokman field where Statoil is a partner. And there is still a large remaining exploration potential, as for example in the newly delimited area between Norway and Russia in the Barents Sea.

### **A cost efficient energy source**

But gas is not only a plentiful energy source – it is also a cost-competitive one. There is considerable room for gas prices to settle at levels that are both acceptable to producers and competitive with alternative sources of supply.

Looking at the full-cycle costs of building, operating and fuelling power plants, gas is competitive with coal at prices up to \$10/mmBtu – this is to be compared with today's gas price of \$7/mmBtu in Europe and less than \$4/mmBtu in US. The competitiveness of gas against coal is even higher if the cost of emitting CO<sub>2</sub> is included, and the indifference cost to nuclear, CCS-coal & renewables allows for even higher gas prices.

Nuclear energy is currently being championed by some as the most effective alternative to provide base-load power. But a reality check is needed. When plans for new European nuclear plants were established a few years ago, state-of-the art gas-fuelled power was already comparing favourably, both on cost and construction time. Since then, the estimated cost of building these nuclear plants has increased to the level of around five times the cost of gas-fuelled power, and it is now estimated that these plants will take twice as much time to build as a gas plant of equivalent capacity. Gas-fired power plants on the other hand benefit from a well-known and immediately available technology.

### **The cleanest fossil fuel**

Finally, gas is the cleanest fossil fuel. CO<sub>2</sub> emissions of new gas power plants are up to 70% lower than in existing coal plants, and 50% lower than in state-of-the-art coal plants. Let me illustrate the potential of gas as a climate-mitigation technology by an example – maybe not an entirely realistic one, but a powerful example nevertheless. The EU has set itself an ambitious emission reduction target for 2020. This target would actually be achieved by using a cost-effective and immediately-available measure: switching all coal-fired power generation to gas. And the target would be reached without the need for any subsidies.

So where do renewables fit in this picture? There is no doubt in my mind that renewables will have an important role to play in the future energy mix. But I can see two major challenges.

Firstly, the scale of the global energy industry means that the time needed for any energy source to materially increase its share in the energy mix is measured in decades rather than years. Most renewables are still in the early stages of technology development, and it will take time to bring down their cost. We are part of such efforts in Statoil through our offshore wind projects – Sheringham Shoal, Hywind and Dogger Bank.

Secondly, renewable sources such as wind and solar provide intermittent energy supply. Power systems that are increasingly dependent on such intermittent supply need to be balanced by the installation of flexible base-load power. This is essential in order to ensure stable electricity prices: more robustness in the energy system means less frequent and less severe price shocks when the wind is not blowing, or the sun is not shining. Gas is the most optimal fuel to accompany the growth of renewables and provide this base-load power because it benefits, as I have just explained, from plentiful resources, low costs, low CO<sub>2</sub> emissions, and a well-known and readily-available technology.

### **Political will is needed to achieve the full potential of gas**

However, for gas to fully play its role in the energy mix, political will is needed – both in consuming and producing countries.

For producer countries, it is important to ensure access to gas resources when increased demand materialises. In Norway for example, access to new exploration areas is essential to maintain and even grow our position as a reliable supplier of low carbon energy.

Also, while gas resources are abundant, a large number of projects will need to be developed to bring these resources to the market, and some are more challenging and costly than others. Globally, the equivalent of twice the current Russian gas production will need to be replaced in the next 10 years, simply due to the decline of existing fields around the world. The price of gas should reflect the cost level of developing all such projects.

But prices are not formed in a vacuum; they are particularly sensitive to policy signals and consumer countries have a large responsibility in this area.

In Europe, there is in our opinion a window to act now. A large share of the European coal-fuelled power capacity will need to be replaced in the next few years, as almost a third of the

installed capacity is over 30 years old. Gas-fuelled power is the most cost-efficient and readily available way to replace this capacity and reduce emissions at the same time. This would trigger a powerful signal that would encourage the development of additional gas resources. And it would largely contribute to achieving Europe's emission targets, without any subsidies, and with no strain to currently distressed government budgets.

To be able to obtain substantial CO<sub>2</sub> emission reductions, world leaders need to apply a more realistic approach. Indeed, different emission reducing measures have different effects both in time and scale. Over-ambitious targets that only can be met by the development of new technology might distract attention from the measures that are available today and can provide cheap and substantial emission reductions. Gas, as I have argued today, is one of these measures – and it is available now. It is up to us industry leaders to step-up our efforts to promote the benefits of natural gas. But eventually it is for the leaders of the world to decide if they want to fully explore this opportunity.

Thank you for your attention.