The Future of Natural Gas Changes and Challenges Ahead

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As a managing director he is responsible for Finance; Human Resources; International Directorate; Legal; and Strategic Planning, Sustainable Development and External Affairs. He also has regional responsibilities for the United States, Canada, the Middle East, Russia and South Asia.

He joined the Group in 1971 and worked in manufacturing and marketing in the Netherlands, Curaçao and the United Kingdom. In 1984, he returned to Shell Nederland as manager of Corporate Planning, and then of Pernis Refinery. After an assignment in Shell International, looking after Africa and Canada, he became a managing director of Shell Nederland in 1992. Four years later he became president and chief executive of the Shell Chemical Company in the United States.

He is a non-executive director of Unilever, serving as a member of the Nomination and Remuneration Committees.

He was born in Utrecht in the Netherlands. He has two degrees – one in mechanical engineering from Delft University and another in economics from Rotterdam University. He is married and has three daughters.

Gas will play a key role in meeting our future energy needs and that role can be developed in a way that is complementary to oil, bringing advantages both to resource holders and energy consumers. There is clear potential for continued significant growth in gas demand and liquefied natural gas (LNG) is going to be one of the key drivers in meeting that demand. That growth in LNG, alongside the emergence of gas to liquids, will drive the development of a bigger, more dynamic and more complex gas market. There are clear challenges ahead in that market, not least in providing the new infrastructure and massive investment that will be necessary to deliver gas over ever longer distances. Meeting those challenges will require action from all those involved. However, the energy industry has a strong record of successfully overcoming these kinds of challenges and there is every reason to be confident that the potential of gas will be realised.

I am delighted to be here at this seminar which has compressed, into two days, all the most important topics in the energy world.

Now, of course, oil is the primary focus of OPEC members but I think the fact that this session on gas has been included in the programme underlines the growing recognition that gas will play a key role in meeting our future energy needs. Equally, it highlights that this role can be developed in a way that is complementary to oil, bringing advantages both to resource holders and energy consumers.

There are, however, as the title of my speech suggests, changes and challenges ahead in the gas market.

I want to cover three areas in my discussion of this topic.

The first is the potential for continued significant growth in gas demand.

The second is the challenge this presents in developing the new infrastructure and markets that will be necessary to meet this demand.

The final area I want to explore is some of the action that will be required from producers, consumers, and governments to meet those challenges.

Natural gas demand around the world has increased by 75 per cent over the past twenty years. We think that this is only the start, and that there is potential for that consumption to grow by up to 3 per cent a year over the next quarter of a century. That means demand volumes could double in twenty five years.

The main reason behind this increase is that gas is relatively clean, cheap - and easy to access once the infrastructure is in place.

Another key advantage of gas is its availability. There are significant gas reserves already available but also the potential for much more to be discovered as more exploration for gas is undertaken. In the last decade four times as many oil exploration wells have been drilled worldwide as gas wells. However, that is now changing, with an increasing recognition of the potential of gas developments, not least in OPEC member countries.

There are exciting developments in Qatar which is now one of the fastest growing gas producers in the world. Egypt has also seen rapid progress in the development of its gas industry. Equally, I am delighted that Shell is part of the consortium that is exploring for gas in South Rub Al-Khali in Saudi Arabia.

Venezuela too is another country that is ideally placed to enter the international gas market, supplying both pipelines and LNG. Shell has been working intensively with PdVSA over the past 18 months on an LNG project. We are eager to move this forward and see this project as the springboard for the development of Venezuela as a major new LNG supplier in the Atlantic Basin. We look forward to playing our part, in co-operation with other investors, to help the Venezuelan government meet its energy policy objectives.

And there are many other examples I could give of the work that is going on to develop gas resources around the world.

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There will be a growing market for these resources both for power generation and in the industrial and commercial sectors. That growth in demand can be seen in all the major markets of the world. In more traditional markets like the US and Western Europe, usage is increasing at the same time as indigenous supplies are nearing plateau. In the Asia Pacific region, demand from traditional gas consumers like Japan and Korea is being supplemented by newer markets in China and India where rapid economic growth and a desire to diversify energy supplies is driving increased energy demand.

The result of these increases is that more gas will be needed and that gas will be delivered over longer and longer distances - both from pipelines and as liquefied natural gas - LNG.

I want to spend a few minutes on the particular role of LNG because that is a key factor in the changing nature of the gas market. LNG has been a feature of the market for more than thirty years. However, it has become an increasingly attractive option as indigenous supplies have become constrained in key markets; as demand has increased in newer markets; and as costs have been driven down throughout the value chain in production, liquefaction and shipping.

In recent years the volume of LNG traded around the world has doubled. In the next ten years, we think that LNG demand could more than double again. And the key feature of this growing market is its growing diversity – both in terms of sources of supply and in the range of customers for that supply.

There are currently twelve countries exporting LNG, up from nine in 1997, and another seven planning to enter the market. And they are likely to find an increasing number of customers. There are currently fourteen countries importing LNG, with a further ten having stated interests in developing regasification facilities. That is going to drive the development of a bigger, more dynamic, more complex and more challenging market.

That brings me to my second theme - the challenges of operating in that market, including the particular challenge of delivering that gas over ever longer distances.

The first point to make is that meeting these challenges will require massive investment – up to $100 billion in the next decade. That investment will be needed throughout the value chain in the liquefaction plants, in the ships, and, the regasification terminals in the destination markets. In the newer markets such as China and India the challenge is even greater. Here gas markets are being developed from the very beginning meaning investment will be needed across the upstream, midstream and downstream infrastructure.

A further challenge both for producers and customers will be to respond flexibly to the market. While we do not believe that gas will become a traded commodity like oil, gas prices will become increasingly interconnected and the market will become a more global one.

At the same time, the new customers entering the market mean that market is going to be a more varied one. That will require a flexible response from suppliers and a recognition that the traditional contractual models are not necessarily always still the most appropriate. They will need to offer flexibility over timescales, over contracts and pricing mechanisms.

That means we are likely to see a range of different types of contractual arrangements. Long-term contracts are clearly going to continue to play a key part simply because of the long term and capital intensive nature of gas projects. But we will also begin to see more short and mid-term contracts alongside the development of a small spot market.

The winners in this market will be those producers who have the financial and project management strength to offer a variety of solutions that respond effectively to customer needs in a fast changing competitive environment.

Another key challenge for producers and resource holders is to ensure that they seize all the opportunities provided by gas.

In my comments so far, I have focused on the opportunities provided by LNG but gas resource holders have another option to monetise those resources.

Gas to liquids, or GTL, has the potential to open up an entirely new market for gas products.

The transport fuels produced in the GTL process offer significant

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environmental advantages. These are particularly attractive in urban areas where local air quality is a problem. And the GTL trials Shell has been conducting in a range of major cities around the world have confirmed that the fuel is practical, cost effective and delivers significant reductions in emissions.

Another key advantage of GTL is that the technology is tried and tested. Shell has been successfully operating its GTL plant in Malaysia for more than a decade. And we see the partnership we have in Qatar to build a commercial scale plant as representing a really exciting development of that technology. Work is proceeding very well on this world class project which will place Qatar at the leading edge of this new gas market.

Let me now move on to my final theme, the action we need to take to meet the challenges ahead and ensure that gas fulfils its potential. It is clear that all of us have a part to play – resource holders, producers, customers and governments.

Producer governments face the specific challenge of developing their energy resources in a way that benefits both current and future generations. And this means they have to manage a number of complex issues - economic, social and environmental.

Governments have a particular role in creating the clear and consistent commercial and regulatory frameworks that will give investors the assurance they need to provide the massive levels of investment to develop gas projects. In particular, these frameworks will need to provide for secure access to cost-effective gas supplies over the long-term.

Taking that long-term perspective and creating a climate where investor confidence is strong will help to ensure that maximum value is gained from a country's gas resources.

It will also encourage ongoing investment in expanding projects to meet growing demand. One example of this can be seen in Nigeria which has one of the world's most rapidly growing LNG industries.

It took many years to agree the basis of the original two train plant. However, in the six years since the plant began production it has increased its capacity threefold. Agreement has now been reached to develop a sixth train, underlining strong investor confidence in the project.

The Nigerian example also highlights the importance of strong partnerships. Delivering these large and complex projects effectively and safely requires a range of expertise, as well as political support. We can see clearly that the most successful projects around the world are those where governments, national companies and international businesses have worked closely together. Creating and maintaining those partnerships is a challenge but one which it is essential for us to meet.

And in all this we need to act to ensure that we meet the needs of customers. Those customers will be increasingly diverse and increasingly demanding but if we can meet their needs, whether in pipelines, LNG or GTL there are real opportunities for gas resource holders to add value.

What is clear is that there is a growing role for gas in a global market. There are real challenges ahead in meeting those demands. But the energy industry has a history of successfully meeting challenges, whether they are technical, economic or political.

I am therefore confident that we can meet the challenges ahead in expanding the gas market – and can all share in the benefits that will bring.

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