



# ***Gas—the bridge to the future***

**Linda Cook**

CEO, Shell Gas & Power

Middle East Petroleum and Gas Conference

Qatar, April 8, 2002



**Linda Cook** was appointed Chief Executive Officer for Shell Gas & Power in January 2000. Her previous experience has included the roles of Director Business Development and Director Business Services on the Shell E&P Global Executive Committee in Shell International Exploration and Production based in The Hague, Chairman of the Shell Deepwater Council, and General Manager New Business Development within Shell Oil Company based in Houston.

Linda joined Shell Oil Company in 1980, as a reservoir engineer, having graduated from the University of Kansas with a degree in Petroleum Engineering. Following a number of technical assignments, she held various supervisory and managerial positions in Houston and California.

Linda is married with three children.

**The Middle East is becoming more important in the global gas scene, though not yet in proportion to its massive reserves. A new age is now dawning in the Middle East, as it awakens to the opportunities offered by natural gas. Gas presents an important bridge: to a cleaner future for the world, and to an even greater role for the Middle East in meeting the world's energy needs.**

I am grateful for the opportunity to take part in this conference. From my point of view, as chief executive of Shell's global Gas & Power business, it is an exciting time in the Middle East.

My presentation this morning will complement those of my fellow panellists, as I will be focusing on natural gas rather than oil. Although the conference title draws our attention to "Middle East Oil Markets", I would like to emphasise that:

- the Middle East is becoming more important in the global gas scene, though not yet in proportion to its reserves;
- a new age is dawning now in the Middle East, as it awakens to the opportunities offered by natural gas;
- and that gas presents an important bridge – to a cleaner future for the world, and to an even greater role for the Middle East in meeting the world's energy needs.

Let's look at the Middle East's current position on the global gas stage.

Total gas consumption in the Middle East region grew to 190 bcm in 2000, realising an annual growth rate of almost 7% over the previous decade, largely driven by increasing use for power generation. (*Fig. 1: Middle East Gas Growth*)

In the same period we saw gas exports rise by a factor of seven, from 3 bcm in 1990 to 23 bcm in 2000.

LNG from here in Qatar has made a massive contribution, providing more than half of these exports from its world-class industrial complex in Ras Laffan.

Oman LNG, commissioned in 2000, is another example: a world

cost leader in the liquefied natural gas industry, and already a major contributor to Oman's economy.

And the pipeline project between Iran and Turkey has reached completion, with first gas delivered in December 2001.

Gas is now a considerable business in the Middle East, though still small relative to its potential.

We all know the oil picture.

Clearly, the Middle East is uniquely positioned with its share of global liquid petroleum reserves.

The gas picture is a bit less familiar. Fig. 2 shows the various gas regions of the world, re-sized geographically in proportion to their share of global gas reserves. It highlights the importance of the Middle East – which is on a par with Russia in this context.

Some regions are taking full advantage of their resources and gas market development, and producing and making use of their "full share". (*Fig. 3: Making the Most of Reserves*) Others, as you can see, have some way to go to develop their gas reserves.

The Middle East has some 35% of the world's reserves but in 2000 it had only 9% of the global gas production. But this can change.

An example of this sort of change is Nigeria, where gas developments have had a significant impact over the last two years.

The liquefied natural gas business in Nigeria – decades in the making – began delivering in 2000 with the start-up of the first two trains of the Nigeria LNG project.

The third train is under construction and due to start up within one year. And the shareholders just

***"The Middle East has some 35% of the world's reserves but in 2000 it had only 9% of the global gas production."***

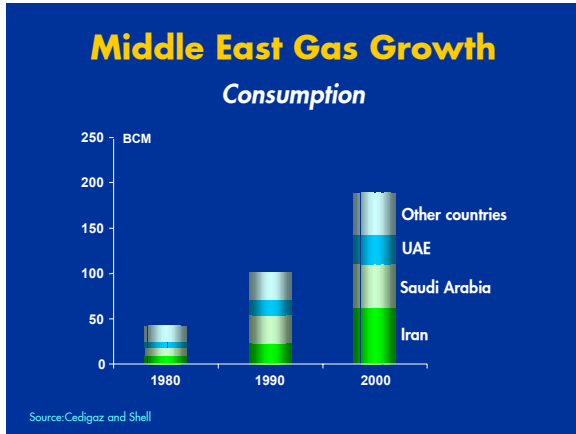


Fig. 1

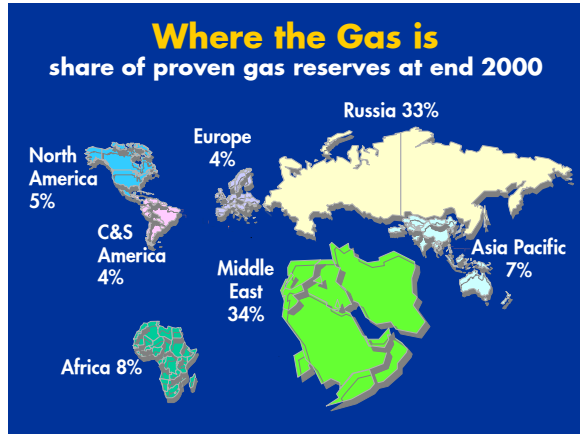


Fig. 2

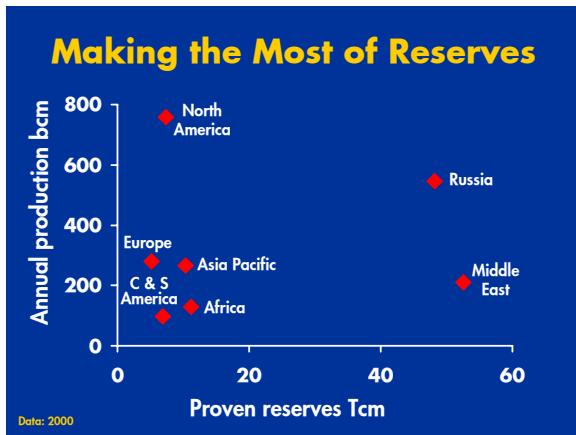


Fig. 3

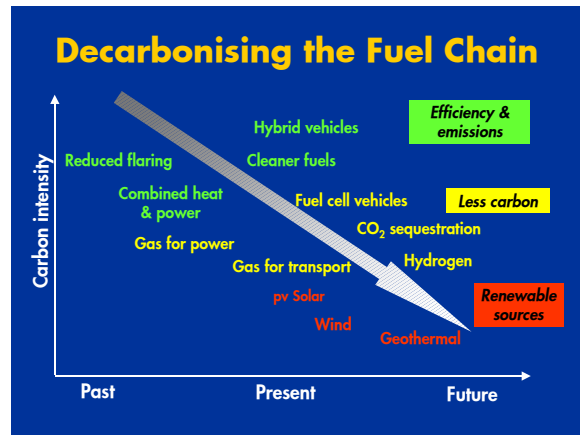


Fig. 4

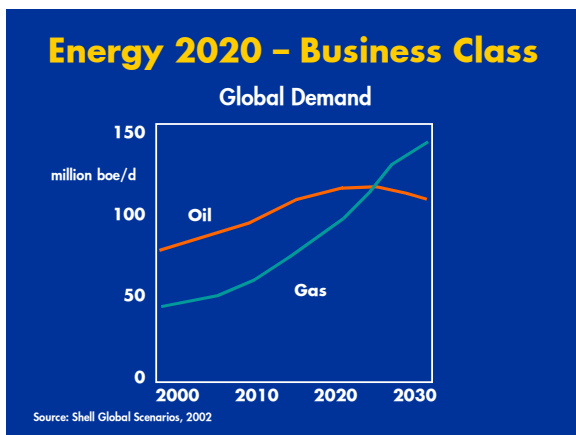


Fig. 5

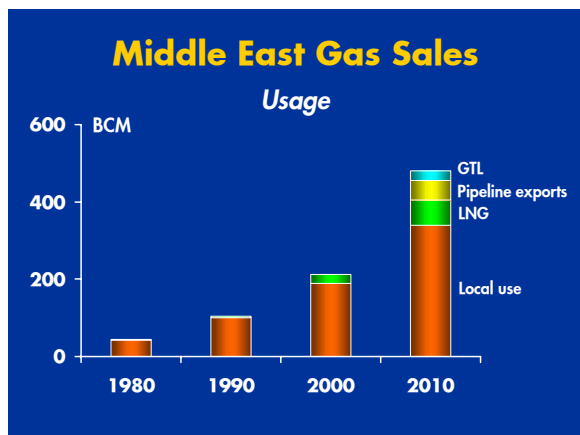


Fig. 6

approved the construction of Trains 4 and 5. Once they are completed at the end of 2005, the total LNG capacity will be 17 Mtpa.

With Train 6 on the drawing board, as well as other industry projects, Nigeria will be the world's third largest LNG producer by 2011. At that time, revenues from natural gas will be responsible for more than 25% of the country's hydrocarbon revenues.

The Middle East has an even bigger potential – which puts it firmly at the front of the global gas stage as we move into the future.

### **Paths to the future**

What does the future hold?

Over the long term, we expect to see ongoing decarbonisation of the fuel chain, facilitated by advances in technology, but driven by changes in social and personal priorities – a greater demand for clean energy in our world. (*Fig. 4: Decarbonising the Fuel Chain*)

It's also a realistic expectation that the rise in human-induced CO<sub>2</sub> emissions will be halted – without jeopardising our ability to respond to the needs of society and business.

Increasing the role of natural gas in the global energy portfolio can facilitate these outcomes. This process is described in two different long-term global scenarios developed by Shell. These are not “either or” views of the world, but they illustrate directions the world may take over the next 20 to 30 years.

The “Business Class” scenario describes a world that is run with the efficiency of a business, with an emphasis on freedom of individual choice. The global economy is shaped by an interconnected web of global elites.

This is a volatile world, but one where energy markets continue to open up and become more integrated and sophisticated.

The other scenario, what we call the “Prism world”, has different

priorities and agendas. People are still interested in economic wellbeing – but they place increased importance on their roots and their values. Diversity is prized over global homogenisation.

People in the Prism world are sceptical that markets and companies can adequately deliver energy security, a clean environment, and energy services to the poor.

So governments have a more significant role in this world. In different countries and regions, they find different ways of protecting the economic and social wellbeing of their citizens.

Whichever world we inhabit, the trends and views incorporated in the development of both scenarios show natural gas growing in importance. At the same time, forecasts show growth in oil production slowing down.

In fact, in about two decades, we can foresee global gas demand – for the first time – outstripping that of oil on a barrel equivalent basis. (*Fig. 5: Energy 2020 – Business Class*)

So the Middle East's huge gas reserves are extremely important, to the region and to the rest of the world.

They provide a bridge to the future development of the Middle East's role in energy – and a bridge to a cleaner future, with greater emphasis on sustainable development.

### **A new dawn of opportunities**

To fully realise the potential of these reserves, progress is required in four different dimensions. Let's look briefly at each of these.

First, further development of the infrastructure to meet local and regional demand is required.

We already see progress in this direction, with the projected pipeline from Qatar to Kuwait, and the Dolphin project from Qatar to the United Arab Emirates.

There's also the important Saudi Natural Gas Initiative with its aim to

***“The Middle East has an even bigger potential— which puts it firmly at the front of the global gas stage as we move into the future.”***

***“To fully realise the potential of these reserves, progress is required in four different dimensions.”***

***“The next technology currently poised to make a real difference is Gas to Liquids.”***

integrate upstream gas development with downstream petrochemicals, power generation and desalination.

Projects of these types boost investment in important local infrastructure – infrastructure that can often provide the foundation for additional industrial development.

The second dimension to realising the Middle East’s gas potential is concerned with regulatory frameworks.

If the region wishes to progress towards privatisation and encourage foreign direct investment, international energy companies need clear and stable rules on which they can base their investment and commercial decisions.

The third dimension is technology. LNG technology has already made its mark in the Middle East – and with more to come.

The next technology currently poised to make a real difference is Gas to Liquids – with projects under consideration in both Qatar and Iran.

By converting natural gas into ultraclean liquid products, GTL will have environmental as well as commercial benefits – and could produce thousands of tons of water per day, suitable for irrigation.

Finally, an expansion of the markets for Middle East gas reserves needs to be realised – both domestic and export.

Natural gas production within the Middle East for local and export markets is forecast to more than double over the decade.

I have already mentioned some projects that will be key to delivering this growth – in the Emirates and Saudi Arabia.

There are several other encouraging developments taking place.

In Egypt, for instance, we have the construction of domestic transport and distribution systems, Nat-Gas and Fayum Gas. These projects are helping to set the foundation for distribution and marketing to both businesses and consumers.

***“All of this will lead to stronger linkages: between the vast reserves in the Middle East and the markets they can serve.”***

Growing Middle East gas exports will call for expansion of existing LNG projects in Qatar and Oman – and the addition of new ones.

Feasibility studies are under way already for multiple projects in both Iran and Egypt. Longer term, major new pieces of pipeline infrastructure can be envisaged.

The LNG projects and pipelines will deliver natural gas to traditional markets in Europe and the Asia Pacific, and also the “gas markets of the future” in India and China.

So, where will all of this take us?

Although we cannot predict the future, there are clear signs that gas will become more important in the Middle East in the coming years.

One forecast shows gas sales in the Middle East growing to 480 bcm over this decade. (*Fig. 6: Middle East Gas Sales*) This is driven by increased local gas demand as well as exports – both of pipeline gas, LNG and GTL.

Gas revenues by 2010 could approach 10% of current oil revenues in the Middle East, contributing a substantial amount to local economic development, diversification and employment.

### ***Gas presents a bridge***

The global trend towards cleaner fuels and advances in technology will present the opportunity for the Middle East to realise its gas potential.

But with it will come new challenges – the challenge of local infrastructure development, attracting foreign investment, establishing regulatory frameworks, stimulating local demand and accessing new customers.

All of this will lead to stronger linkages: between the vast reserves in the Middle East and the markets they can serve – both local and global.

There are many ways to look at the future – but in all reasonable scenarios, natural gas presents a bridge: to a cleaner future, and to the future development of the Middle East’s role in energy.

**Recent speeches by Group Managing Directors and other senior executives**

**Remarks at the Launch of “People and Connections—Global Scenarios to 2020”**

Philip Watts

•

**Energy in the Global Economy: Gas—Futures and Challenges**

Linda Cook

•

**Evolving Sources or Revolutionary Technology—Exploring Alternative Energy Paths to 2050**

Ged Davis

•

**Serving Customers in Diverse Gas Markets**

Linda Cook

•

**OPEC and the Global Energy Balance—towards a Sustainable Energy Future**

Philip Watts

•

**Springboard for Progress—Building on the Energy Industry’s Record of Responsiveness**

Mark Moody-Stuart

•

**Principles in Practice**

Jeroen van der Veer

•

This publication is one of a range published by Group External Affairs, SI, Shell Centre, London SE1 7NA, England. For further copies, and for details of other titles available in English or as translations, please contact the External Affairs department of your local Shell company.

Alternatively, write to the above address or  
fax +44 (0)20 7934 5555 quoting department reference PXXC,  
or telephone +44 (0)20 7934 5638.

Information about the Royal Dutch/Shell Group of Companies, including downloadable versions of various publications, can be accessed at:

**[www.shell.com](http://www.shell.com)**

© Shell International Limited (SI), 2002. Permission should be sought from SI before any part of this publication is reproduced, stored in a retrieval system, or transmitted by any other means. Agreement will normally be given, provided that the source is acknowledged.

The companies in which Royal Dutch Petroleum Company and The “Shell” Transport and Trading Company, p.l.c., directly or indirectly own investments are separate and distinct entities. In this publication the expressions ‘Royal Dutch/Shell Group’ and ‘Group’ are used to refer to the companies of the Royal Dutch/Shell Group as a whole. The words ‘Shell’, ‘we’, ‘us’ and ‘our’ are used in some places to refer to the Group and in others to an individual Shell company or companies where no particular purpose is served by identifying the specific company or companies.