



# Setting the energy scene

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**Jeroen van der Veer** is Chief Executive of Royal Dutch Shell plc. He was a Managing Director of Royal Dutch Petroleum from 1997 until the unification under Royal Dutch Shell in July 2005.

He joined Shell 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 and is married with three daughters. He has two degrees – one in mechanical engineering from Delft University and another in economics from Rotterdam University. In 2005 he was awarded an honorary doctorate from the University of Port Harcourt in Nigeria.

**The energy scene is a fascinating one, featuring great challenges but also the ingenuity and innovation to overcome those challenges. Meeting the world's growing demand for energy will require investment in infrastructure and continued technological development to gain access to new resources. We will also see bigger and more demanding projects and we need to ensure we have the skilled professionals in place to manage those projects. A further element in the energy challenge ahead will be to tackle the carbon dioxide problem and Shell is supporting a range of work to develop greener fossil fuels. International oil companies and their access to technology will play a key part in meeting future energy challenges but they will also be seizing opportunities to work in partnership with national oil companies who are seeking to develop and grow their own businesses.**

My title is setting the world energy scene and, I know I am biased, but I think that scene is a fascinating one. It has all the elements of a good drama. It is a fast moving and constantly changing picture. It features all the great topics of our time – politics, money, the very future of our planet. And, at its heart, are great challenges but also a cast of characters with the ingenuity, innovation and sheer determination to overcome those challenges.

I will focus my comments today on three key features of that picture.

The first is the energy challenge: finding the resources, providing investment in infrastructure, and securing the technical skills we need to supply growing demand.

The second feature is carbon – the problem and the opportunity.

And finally, I want to look at the growing role of national oil companies in the energy scene.

### **Challenges of meeting growing demand**

Securing new energy resources has always required a spirit of adventure and willingness to take on the impossible - whether it was the pioneers of Royal Dutch and Shell Transport exploring in the jungles of Sumatra at the end of the nineteenth century; or the first developers of the North Sea thirty years ago; or the \$20 billion we are investing in the Sakhalin

project to unlock four billion barrels of oil and gas resources.

That spirit will be needed more than ever if we are to meet the challenges ahead of growing demand. The International Energy Agency estimates that about half of the undiscovered conventional oil resources outside the Middle East are to be found in deep water or in the Arctic region. Those figures underline the fact that meeting future energy demand means we will need to explore in more remote regions; develop in ever deeper water; and overcome more difficult geology.

Meeting those challenges will require the industry to continue to push technological advances to the limit. But if we can get the technology right then we will gain access to very significant additional resources, in the case of deep water the IEA suggest up to 200 billion barrels. And when you consider that, over the past ten years, the industry has extended its ability to operate in deep water from about 1000 metres to more than 2300 metres with the Na Kika field – there is every reason to believe we can rise to that challenge.

The record of our industry in the past thirty years or so has been of technological breakthroughs making new energy projects a reality and allowing us to push back the frontiers time and again. And our future energy will depend

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on maintaining and extending that record.

In Shell, I have made a very clear commitment to support technology and innovation and by saying that there will be no cap on research spending. If there are good ideas then we will fund them because we know those ideas will be essential to securing the future of our business, and to securing the world's future energy supply.

However, overcoming the technical challenges is only one aspect of the increasing demands that are being made of the energy industry. There are also environmental challenges, both in the broad sense of the need to find ways of producing and using energy in ways that do not damage the environment, but also in dealing with the particular requirements of developing energy projects in environmentally sensitive areas.

We have seen those very clearly with our own project in Sakhalin where we have taken a range of action to address concerns about the possible impact of the project on the western grey whale population. And it is clear that the energy company of the future will need to have the skills, resources and commitment to manage these demands.

Future energy projects are also more likely to be in areas of political uncertainty. The International Energy Agency suggest that oil production from OECD countries will decline from around 25 per cent of the global total to about 10 per cent in 2030. Clearly there are particular challenges in developing projects in countries where political and legal frameworks are at an early stage of development. Again oil and gas companies will need to ensure they have the ability to manage that uncertainty and the risks which may accompany it.

All this means that energy projects are going to be bigger and more expensive. We will see more of what I call 'elephant' projects. By 2015, I expect that Shell will have ten of these underway, up from three today.

We should not underestimate the demands these massive projects will make on resources, people and finances – demands that are multiplied because

energy companies will need to manage several of these projects simultaneously. That will play to the strengths of the international oil companies who have long experience of big projects and are more likely to have access to resources on the scale that will be needed.

However, in many cases these projects will require extensive partnership working – that will mean partnerships with other energy companies, both national and international – it will mean partnerships with those with specialist technical or local knowledge - and it will mean partnerships with others outside the energy sector such as independent experts on environmental matters.

The other lesson is that as these projects become higher risk then fiscal stability becomes ever more important. If governments want additional resources to be produced in order to meet demand and keep downward pressure on prices then some of the answer lies in their own hands by ensuring that their tax regimes do not provide any disincentives to investment. Windfall taxes are particularly unhelpful in this respect, especially in an industry characterised by volatile prices.

And this has become a particularly important issue here in the UK where there have been three tax changes in three years. I do hope the Chancellor will look for ways to mitigate the effect of these tax changes on future investment in the North Sea, especially when oil or gas prices go down. And a powerful step to encourage that investment would be a commitment to reverse the tax increase if the oil price falls.

The scale of the investment required to meet global energy demand is immense – the IEA estimate means we will need to double the level of investment per year (in real terms). That means governments all over the world will need to play their part in providing a supportive and stable fiscal and regulatory climate.

I believe that the industry is responding well to the investment challenge and there is a great deal of

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activity underway. However, shortages of capacity – whether that is contractors or equipment or material are driving up costs dramatically. For example, some rig rates in the North Sea have more than tripled in the past year and we are seeing similar pressures throughout the value chain.

That is another factor that means that energy projects are getting more expensive. Shell recently announced an increase in our capital investment to \$19 billion for this year, reflecting both the short term increases in costs I have outlined and the reality that securing future resources is going to be more expensive. That is a very significant commitment and I think we are unique in that we are investing about as much as our profits. But we know this is essential if we are to secure the long-term future of our business and be well placed to meet the demands of global energy growth.

Clearly, here in the UK, the challenge is to provide the infrastructure investment to meet future needs as domestic gas supplies decline. I know there is concern in some quarters about the scale and pace of this investment but I don't think Shell could ramp up its investment any faster.

Let me just mention three developments in which Shell is involved. These will bring gas to the UK from the Ormen Lange and Statfjord fields in Norway and gas from the Netherlands to Shell's terminal in Norfolk through the BBL pipeline. These projects alone could meet more than a third of UK gas demand. And that's in addition to the new fields, such as Goldeneye, that continue to be developed in the North Sea.

I have talked about the importance of finding new oil and gas resources, of technology, and of investment in infrastructure. But another absolutely essential element in our ability to deliver future energy projects will be the availability of skilled and experienced people.

The task of ensuring that we have sufficient skilled professionals in place

needs to be one of the energy industry's highest priorities. And again, the scale of the task is enormous. The expansion of our Athabasca oil sand project alone will require an additional 10,000 skilled technicians. Some commentators predict the LNG industry will need more than 250 new ships in the next decade and they will all need skilled crews. And that's in addition to the engineers needed to develop those frontier upstream projects I have already mentioned.

The task is made all the more urgent as our industry has an ageing workforce. Here in the UK a third of the offshore workforce is over fifty years old and we can see a similar age profile in most energy sectors across the world.

I know this is a very important issue for the Energy Institute and its training programmes and the recognition it gives to energy industry professionals is very important in helping to attract and retain skilled professionals in the UK industry.

It is vital that we all work together, whichever part of the sector we work in, to spread the message about how exciting, how interesting and how important the energy industry is. So, if I were young again, this would be the industry I'd go for.

Then we need to ensure that our recruits feel valued, have the opportunity to develop their skills and apply their expertise to the leading projects of the future.

At Shell, we have appointed eight chief scientists to represent each of our key technical disciplines. They will provide role models for the rest of the business as well being seen as leaders in their fields by the outside world and underlines the value we place on those who work in technical disciplines.

### **Tackling the Carbon Dioxide Problem**

Technology and technologists will be just as important in my second theme – carbon dioxide. No discussion of future energy can take place without a focus on the effect of future energy use on the environment. It is an issue of concern to all to energy producers, to energy consumers and to governments.

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However, the reality is that fossil fuels are likely to remain a central part of the energy mix for many decades ahead. And, while I believe they can meet our growing energy needs, we will increasingly need to access heavier oil, oil sands and oil shale, all of which produce more carbon dioxide than conventional oil.

That makes carbon dioxide emissions a growing problem but a problem that we may be able to solve - and a problem which we have real business incentives to solve.

Carbon dioxide abatement technologies, carbon sequestration and the development of alternative cleaner fuels are all ways in which we can begin to reduce or manage carbon emissions. And, if we can develop ways of using fossil fuels so that the majority of the carbon dioxide produced is sequestered then we could secure a cheaper, more convenient and flexible source of fuel than many alternative energies.

That is why Shell is supporting research into a range of carbon dioxide management options which may allow us to reach that goal of green or greener fossil fuels. Clearly carbon sequestration is an area which the industry knows a great deal about having used geological sequestration techniques for many years for enhanced oil recovery. And this technology has clear potential to be applied more generally to carbon sequestration to reduce emissions.

Then there is a great deal of work going on to develop cleaner power generation. One area in which Shell has an interest is integrated coal gasification combined cycle power plants – IGCC. These plants produce about 10 to 15 per cent lower carbon dioxide emissions than the best conventional coal generation plants. But just as significant is the fact that technique means the carbon dioxide is produced as a high pressure concentrated stream and so has the potential to be captured much more economically and then sequestered underground. Shell is working with the Queensland government in Australia on the feasibility of building an IGCC

power plant – with the carbon dioxide sequestered in this way.

Here in the UK, we are part of the joint venture that is working on the Miller decarbonised fuels project that will capture the carbon dioxide from a power plant and use it for enhanced oil recovery in the Miller field in the North Sea.

And it is vitally important that we get some momentum behind this work, get the demonstration projects in place which will allow us to develop the technology and make greener fossil fuels a reality.

The focus on carbon dioxide management, of course, needs to be carried out alongside work on alternative energies. We've recently made announcements on some of our plans for biofuels. It's not very well known but Shell is already the largest marketer of biofuels in the world.

And we continue to support wind, hydrogen and advanced solar projects. There are a number of promising options but making predictions or trying to pick the final winners is foolish at this stage. The important point is to ensure that the industry invests in a whole range of possibilities and, over time, we will see which prove to be the most effective.

### ***The role of National oil companies***

Let me turn now to the third feature of the energy scene, the role of national oil companies. National oil companies have always been a part of the energy scene and produce about 70 per cent of the world's oil and gas. What is changing is that a number of national oil companies are growing and developing their experience and skills and seeking to play a greater role outside their own countries.

As I mentioned earlier, I think this challenging environment does play to the strengths of International Oil Companies. While investment in research and development is growing amongst some national oil companies the overwhelming majority of this investment in the industry is undertaken by the international companies.

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That access to technology is a key advantage international companies can bring, especially when added to our ability to integrate our capabilities across the value chain and the breadth of our experience. And this will be increasingly important as resource holders need both to maximise recovery from mature fields and to develop more technically demanding fields.

And where we work together with national companies I think we can complement each other's strengths. For example, Shell is working with the Libyan national oil company to explore in the Sirte basin and to redevelop its liquefied natural gas industry and the value we add is through our detailed experience in LNG and knowledge of the market. Last month we reached agreement with the Oil and Natural Gas Corporation in India under which we

will look for opportunities to co-operate across the full range of activities both upstream and downstream.

Again, we believe the breadth of our experience and technological capabilities will add real value to the partnership.

So let me conclude by reinforcing the point I made at the beginning of my speech – that the energy story is an exciting story. The stage we are playing on is one that is set for growth and change. We will see new projects, new players both suppliers and customers and the dynamics between them will change.

There are great challenges ahead. But alongside the challenges are exciting opportunities for a company like Shell to develop our business and play our part in fuelling the world and its future economic growth.

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