



The Oil Company **of the Future**

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As global demand for energy continues to grow, oil companies are going to need to develop more and bigger projects. These projects are also increasingly going to present significant technical, social and environmental challenges and the oil company of the future will need to be able to execute several of these projects at once. International Oil Companies have some advantages in this respect with a good track record; the resources to invest in new technology; and a focus on delivering

good returns to shareholders. Within the overall context of rising energy demand, it is clear that fossil fuels will remain a growth industry. There are significant oil and gas resources still available but what we need to do now is focus on ways of reducing their impact and reach for the prize of clean, green fossil fuels.

Today, I'd like to look forward – to take a look at what the oil company of the future is going to look like. Then I will explore the challenges and opportunities that our business will encounter in the years ahead.

To meet that increasing demand we'll need more and bigger projects. And, those bigger projects are going to require funding on a massive scale.

I'd like to focus on three particular points. First: the successful oil companies of the future will have to be able to manage bigger, more difficult and more expensive projects. And they'll have to manage several of them at once – often in remote locations.

My second point is that resource holder governments are going to need International Oil Companies just as much as we need them.

My final point is: that fossil fuels are a growth industry, especially if we can find solutions for CO₂.

Bigger Projects

Size and scale have always been key characteristics of our industry. But, as we respond to huge increases in demand for energy, size and scale are going to be even more of a feature in the future.

The world's population is growing and people are getting richer. That means they will use more energy. The IEA forecasts that energy demand will increase by almost 60 percent by 2030. And, by 2050, global energy demand could have doubled.

We've already seen the impact of unprecedented demand growth last year. In 2004, China alone saw an increase in oil demand of more than 900,000 barrels a day. While that phenomenal growth in demand is likely to moderate this year, the outlook is for continued significant increases in demand from China and other emerging economies over the longer term.

To meet that increasing demand we'll need more and bigger projects. And, those bigger projects are going to require funding on a massive scale. The IEA estimates that the oil


sector alone will require an investment between now and 2030 of \$3 trillion.

And we are already seeing some of these huge projects being developed. From the Kashagan field in Kazakhstan, to the Athabasca oil sands or to the Sakhalin LNG project, we are in an age where the multi-billion dollar project is becoming commonplace. The oil company of the future won't just need to be able to manage one of those projects at any one time but will have to be able to execute several of them simultaneously.

That will not be easy. As I'll outline later I'm convinced that there is still plenty of oil and gas available to be found and produced. But that oil and gas will be found in more and more hostile environments that present significant technical challenges. But our industry has a good record of meeting these kinds of challenges. We only have to look back thirty years ago to when the conditions in the North Sea were seen by many as too hostile for successful development. And yet the North Sea has proved to be one of the world's most successful oil and gas provinces.

I'd like to give you a couple of examples of Shell's projects where we are tackling some of today's major challenges in developing future energy resources.

The Sakhalin II development of the far east of Russia is one of the most demanding ever undertaken. Its scale is enormous: the biggest single-phase project Shell has ever developed. And, it's one of the biggest energy projects in the world. But Sakhalin II is also being developed in waters that are frozen for six months of the year. This presents formidable technical challenges.



And those technical challenges are overlaid by commercial and political challenges. That's because Sakhalin II is one of the first projects to involve international companies in the development of Russia's energy resources. All of which means everybody involved has to be absolutely committed to pushing back the frontiers of what is possible.

The exploration of the South Rub Al Khali in the Kingdom of Saudi Arabia represents a very different but equally challenging environment. It's one of the most remote areas in the world. Temperatures are regularly above 50 degrees and the sand dunes are often 200 metres high, making the surveying and data collection work exceptionally demanding. And then there are major logistical challenges in supplying the 500-strong team and making sure the equipment is kept working in those harsh conditions.

I don't think the wider world even begins to realise or appreciate how regularly the energy industry successfully meets these enormous challenges. The cost of the Sakhalin project is of a similar order to the development costs of the Airbus super plane, the A-380; or the cost of building the Channel Tunnel. And even though Sakhalin presents just as much of an engineering challenge, it will receive much less attention and much less appreciation of the achievement involved.

With more and more energy projects being developed in these types of remote and hostile environments we can be sure that these challenges are only going to increase. However, the difficulties will not just be technical. More and more, oil and gas resources are also being produced in areas that present environmental and social challenges. That means the oil company of the future will have to develop and extend its skills so that it can manage community and environmental matters, alongside the technical

challenges.

We've made a lot of progress in improving our approach and awareness of these questions in recent years. But there is still much more to be done. And, right at the heart of the issue is the question of how an energy company makes itself credible to the wider community. How do you gain the trust of those who live and work close to your operations? How do you make sure that your presence will be a force for good in that community? And how do you instill confidence that you will address the dilemmas of operating in environmentally sensitive areas, taking the appropriate action to mitigate any impact you may have on that environment? And I recognize people may well be skeptical about how we apply concepts of sustainability to our operations.

Answering those questions will require a willingness to establish a genuine dialogue. We have to be transparent about what we do. We have to involve external groups in the debate and to be open and honest if things go wrong. None of this is easy. But, if we are successfully deliver these multi-billion dollar projects, then gaining that credibility will be vital.

All this means that the oil company of the future will need to be able to draw on significant financial resources; to be at the vanguard of technical development; and have the people with the skills and expertise to engage with the wider community – and gain and retain their credibility. And that oil company will need to be able to do this in multiple locations around the world simultaneously.

Advantages IOCS can offer

Let me turn now to my second point – that governments will need us as much as we need them. That may seem a rather unfashionable view in the current climate where we are seeing significant activity by national oil companies.



Virtually every week we see NOCs doing deals to acquire and develop upstream assets, not least from China and India. And there seems to be a trend in some countries towards greater state control of energy assets.

This is not unusual when oil prices are high. However, I don't think it is likely to be a long-term trend because when governments look at the fundamentals, they are likely to see that partnerships with IOCs offer significant advantages, which will help them maximize the revenues from their resources.

We do have the primary advantage of a good track record. IOCs have more projects and a history of projects with strong returns. And that looks set to continue. A recent Goldman Sachs survey of the hundred most important upstream projects under development showed IOCs having the major interests in almost all these projects.

Among the other advantages IOCs can offer is access to new technology. We make significant investment in research and technology and, as I mentioned earlier, the nature of future projects means this technological

expertise is going to be increasingly important. And that is going to be true in virtually every type of project whether it is in deepwater; or maximizing the resources from mature areas; or in developing new LNG facilities.

That leading edge technology does mean

IOCs are better placed to develop projects faster and to minimize the costs. I am not, of course, saying that we are immune from cost or schedule overruns, but the overall track record is a good one. And that makes us an attractive partner for governments who, understandably, wish to realise the benefits of their resources as quickly as possible.

Working with IOCs also has the advantage for resource holders that they are not setting up a situation where they are dependent on other governments. Inevitably, a NOC will be driven by the interests of their government and that can make relationships with other governments more complicated.

In contrast, our agenda is simply to deliver. And we will only deliver if we run our business efficiently and keep costs under control. If you get those fundamentals right you can make a profit and have greater resilience when commodity prices are low. In other words – good shareholder returns mean good government returns.

Perhaps I could just make a point here about

the role of governments in energy supply. Governments are increasingly concerned about security of supply and about high prices. But I have to point out that the solution is partly in their hands – governments should create conditions that maximize supply.

A consistent tax policy helps. The challenges I have just outlined make it more important than ever that there is a consistent and predictable tax framework – without it investors will not put their money into the more challenging projects. The equation is clear: high tax means less investment, that means less supply, and that means higher prices. Governments who want secure supplies should bear that calculation in mind.

Fossil Fuels as a growth industry

Let me turn now to my third point – that far from being an industry in decline, the fossil fuel industry is a growth industry. We currently use 200 million barrels of oil equivalent a day to meet the world's energy needs and of these 80 percent are hydrocarbons. By 2050 we

are likely to use 400 million barrels of oil equivalent a day of which 60 percent will be hydrocarbons – that means we are going to see a very substantial increase in the use of oil and gas over the next half century. And contrary to what some commentators say, there is plenty of oil and gas left. It might not be in traditional locations, it might take unconventional forms, and it might be mined rather than drilled, but there is plenty left. The costs of recovering these fuels has more than halved in the last decade and in an era of high prices they are now looking even more economic.

The IEA predict unconventional resources such as oil sands and oil shale could make up 8 percent of global oil supply by 2030 at 10.1 million barrels a day. And there is a similar scope to develop unconventional gas reserves such as coal bed methane.

But even if there is no shortage of these fuels, the argument is then made that we cannot use them because of the environmental consequences. Energy companies could, of course, say: “so what?” They could argue that

as long as there is demand for oil and gas our only responsibility is to supply that oil and gas. That is not Shell's position. We believe that we have a duty to do what we can to provide energy in an environmentally responsible way.

So while carbon-emitting fuels will continue to power the planet, we will work with industry, governments and research institutions to reach for the prize of clean fossil fuels.



We are not there yet, it is only a possibility, but the idea is not entirely fanciful. We already use CO₂ in enhanced oil recovery and the techniques of geological sequestration are already well known and proven. Research to date has shown that CO₂ can be stored securely for thousands of years and that there is widespread large geological storage capacity available. If we can solve the CO₂ emission problem, we can, in fact, produce green fossil fuels.

However, there is clearly more work to be done to ensure that we understand any potential risks. And my company is working with national geological services, research institutions and other energy companies to assess the long-term environmental performance of geological sequestration. We are also urging governments to look at ways of encouraging sequestration through its inclusion in trading schemes and in developing a supportive regulatory and legal framework.

This work is worth undertaking because the prize is a very valuable one. Clean, or green, fossil fuels could ensure we continue to gain the benefits of convenient, safe energy, which is so essential to economic growth, and yet do so in a way that does not damage the environment.

I'd like to conclude by returning to the three points I made at the beginning of my comments.

The size and scale of the challenge of meeting the world's future energy demand means that projects will become bigger and more demanding. The oil company of the future will need the ability to handle a number of these multi-billion dollar projects at once. And that is one of the reasons why IOCs will be attractive partners for governments because we can help them develop these projects in a way that maximizes the value from their energy resources. And the final point, and perhaps

most important point for all of us, is that the demand for those energy resources, for fossil fuels, will continue to grow.

The stakes are high, the challenges are great – but I am confident that the oil companies of the future will show the ingenuity, dynamism and skill to meet those challenges and to supply the sufficient secure and clean energy the world needs for its future prosperity.

Jeroen van der Veer is Chief Executive Royal Dutch/Shell Group of Companies and President Royal Dutch Petroleum Company.

Born October 27, 1947, Jeroen van der Veer is a Dutch national. He has been Chairman of the Committee of Managing Directors since March 2004. He was appointed President of Royal Dutch in 2000, having been a Managing Director since 1997. van der Veer joined the Group in 1971 in refinery process design and held a number of senior management positions around the world. He is also a member of the Supervisory Board of De Nederlandsche Bank and a non-executive Director of Unilever.

The opportunity for overseas experience was a major factor in Jeroen van der Veer's decision to join Shell after military service. His first degree was in mechanical engineering. Later he studied economics.

His first Shell appointment was in process design, followed by a period on the "shop floor" in maintenance at Pernis. His career has also included manufacturing operations in Curaçao and Pernis in the Netherlands.

Jeroen is married to Mariette, and has three daughters. His interest in human development is reflected in a love for visiting museums on his travels. He keeps fit with golf playing with a 14 handicap. He has skated two of the Netherlands' "eleven-cities" tours, in 1986 and 1997.