The Energy Company of the Future

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Woodrow Wilson Center
8 October 2009

Peter Voser was born on August 29, 1958. A Swiss national, he was appointed Chief Executive Officer of Royal Dutch Shell with effect from July 2009.

Prior to his appointment as CEO, he was Chief Financial Officer since October 2004 and up to July 2005 was Chief Financial Officer of the Royal Dutch/Shell Group of Companies. In 2002 he joined the Asea Brown Boveri (ABB) Group of Companies, based in Switzerland as Chief Financial Officer and Member of the ABB Group Executive Committee.

He first joined Shell in 1982 and held a variety of finance and business roles in Switzerland, the UK, Argentina and Chile, including Chief Financial Officer of Oil Products. He was a member of the Supervisory Board of Aegon N.V. from 2004 until April, 2006. He is a member of the Supervisory Board of UBS AG and a member of the Swiss Federal Auditor Oversight Authority.

Amid concerns over energy scarcity and climate change, the wants, needs and aspirations of energy customers are changing. Shell's response to this challenge is multi-faceted. We develop scenarios and share them with the outside world. We invest more in new energy projects than any other private company and spend more on Research & Development than any of our competitors. We develop new businesses, including in renewable energy. We help motorists to save fuel. And we are increasing our production of natural gas, the cleanest-burning fossil fuel. The most successful energy companies of the future will be those that stay ahead of the rising aspirations of energy customers, through innovation and by pushing the limits of what is possible. The race for better energy is on and Shell aims to be an industry leader.

Intro

Woodrow Wilson once said: "One cool judgment is worth a thousand hasty councils. The thing is to supply light and not heat."

I share his preference for cool judgment, especially at a time of big changes in the energy industry.

But if President Wilson and I had been around at the same time, I would have pointed out that heat is one of energy's great gifts.

The ability to control fire gave prehistoric human groups protection against cold and darkness. It enhanced group life, communication and solidarity, allowed them to cook food, and made hunting and agriculture easier.[1]

Today, more than ever, energy is the lifeblood of human civilisation.

Without energy, there would be no heating, light, air-conditioning or washing machines, no tumble dryers or dishwashers, no clean drinking water or sewage systems, no planes or cars, no internet, computers, television or mobile phones, no plastics, and certainly no modern healthcare system.

So if we think the price of energy is too high, would we want to try the cost of having no energy?

Harvesting energy and bringing it to end-users probably entails the largest, most complex and costly logistical effort on Earth. If the human race was an ant colony, the energy industry would be its workers.

For instance, in 2008 Shell staff and contractors in our downstream business alone drove nearly a billion miles (1.6 billion kilometres), which is more than 100 times around the globe every day, to bring energy to our customers.

The International Energy Agency has warned that the world needs to invest around 26 trillion dollars in energy supplies up to 2030. On IMF calculations, that's more than 30 times the amount which governments globally have used so far to save banks and revive their economies.[2]

So perhaps it's time we all start appreciating the true value of energy, and the value of saving energy.

Energy companies like Shell sit at the nexus of one the world's most difficult and exciting challenges: building a new energy system – capable of meeting the energy needs of future generations at much reduced environmental cost.

At Shell, that responsibility is a source of inspiration for our people. And we work hard to make it a source of trust for our customers.

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[1] See: Johan Goudsblom, Fire and Civilisation, Penguin Books, 1994

[2] Amount used by end of July 2009 = $778 billion world-wide. Much of this money is likely to be recouped when the economy recovers. Source: IMF, The State of Public Finances: A Cross-Country Fiscal Monitor, July 30, 2009, p. 29, Appendix Table 4.

It's time to examine what energy companies might be doing in the future, and how they will do it, in two steps:

- First, let's look at long-term trends in the global energy system.
- Second, if we zoom in on energy customers, how are their demands changing, what can we say about their future aspirations, and how might energy companies respond?

Trends and Changes

Peter Drucker once said: "The best way to predict the future is to create it."

True, the most successful companies will be those that embrace new ways of thinking, take risks and anticipate evolving customer wants before others do.

Some of you may think: "If that's true, oil and gas companies should switch to renewable energy immediately – since that is where future growth will be."

I don't quite see it that way. Renewable energy – while important and necessary - is not the silver bullet that's going to solve all our problems, at least not for a long time yet.

Historically, it has taken at least 25 years for any new energy type to conquer 1% of the global market. That's been true for liquefied natural gas in the past. Biofuels are reaching that mark about now. Wind could do so sometime in the next decade, 25 years after the first big wind farms were built here in the United States and in Denmark.

Many of the raw materials on which the growth of renewable energy depends come with supply constraints and environmental challenges.

For instance, the lithium that's used in batteries in electric vehicles can currently only be produced easily in a very few places on Earth – often through the use of toxic chemicals. If we were to make a big shift to electric vehicles, the capacity for mining lithium – responsibly and sustainably - would also have to expand.

The wind industry needs neodymium for magnets in turbines. Neodymium is a rare earth metal. While abundant in the Earth's crust, bigger concentrations are rare and difficult to produce in environmentally friendly ways. Rare earth metal mines in the USA were closed in the past for environmental and economic reasons. Today, more than 90% of the world's neodymium comes from China, which recently indicated it might tighten export controls.

This underscores the importance of making responsible use of *all* of the Earth's precious natural resources.

It also serves as a reminder that countries are well-advised to spread their energy risks by increasing the diversity of their energy supplies.

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Shell's response

Complex challenges rarely have simple solutions. Shell's response has been multi-faceted. We develop scenarios and share them with the outside world. We invest more in new energy projects than any other private company. We spend more on Research & Development than any of our competitors. We develop new businesses, including in renewable energy.

That said, we cannot innovate in all directions. We have to focus on our own skills and capabilities. We are not a government. We are a business.

The key is to be in the right segment of the right market at the right time.

Are we? Well, judge for yourself: The global energy market is growing.

Within that market, oil and gas are both indispensable and our core business. And within that segment, Shell is increasingly focusing on natural gas, the cleanest-burning fossil fuel. By 2012, natural gas will likely make up around half of our production.

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This is not merely a shift in our portfolio. Increasing natural gas production - and transportation by liquefying it and shipping the LNG to global markets - means that more natural gas will be available to displace coal as the fuel for power plants.

A natural gas-fired power plant emits on average half the CO_2 of a coal-burning plant to

produce the same amount of electricity. It also generates significantly less local pollution.

In fact, coal-fired electricity is responsible for the fastest growth in greenhouse gas emissions worldwide, so it's urgent that we address that. Supplying more natural gas is one way of doing that.

In the United States, new technology has opened up abundant gas resources contained in dense rock formations, increasing supplies dramatically.

So you can see why I'm sometimes tempted to say: nothing beats natural gas.

When you're in the right place today, there's still the question: Will you be there tomorrow?

This is the trillion-dollar question confronting all oil and gas companies.

Fortunately, taking the long-term view is very much part of Shell's DNA.

For example, early last century, Shell planners foresaw that aviation would become a normal way of transport. Shell supplied fuel for the first non-stop transatlantic flight in 1919 by British aviators Alcock and Brown, and for most pioneering flights in the ten years that followed.

Today, Shell refuels a plane every 12 seconds.

Similarly, we foresaw in the 1960s that there would be a demand for Liquefied Natural Gas, and we are now a global leader in that market.

An early differentiated transport fuel – Shell Racing Spirit – dates back to the 1920s. Today, Shell is the world's most popular brand for transport fuel. In the United States alone, there are over 14,000 Shell-branded retail stations – that's more than double the number of Taco Bell restaurants.

Changing customers needs

Looking out to the coming decades, energy demand in the developing world will continue to grow. And it will be difficult to supply these growing energy needs, even if we produce energy from all of the world's known sources.

There is plenty of energy around today as a result of the recession, but the drop in investment makes a future supply crunch a plausible scenario.

To make matters more complex, climate pressures are increasing.

These trends have also begun to affect the wants, needs and future aspirations of our customers.

Customers include the millions of people and companies who buy our products each day, the local communities and governments who host our operations and projects, the research institutes with whom we work together to develop new technologies, and the NGOs who want to help improve our environmental and social performance.

Let's take a closer look at three of these groups: motorists, producer nations, and consumer nations.

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Motorists

Car drivers want easy access to affordable transport fuel that takes them a long distance. That's nothing new.

What has changed is the growing desire for driving that is fun, useful and environmentally acceptable.

This trend of cleaner driving is likely to continue, including in the United States – with fuel efficiency standards getting ever tighter.

The desire for cleaner transport plays to Shell's strengths as the world's largest distributor of transport fuels.

Our new role goes beyond serving our customers efficiently. We'll have to build and cater for a growing community of energy customers who want to feel good about the energy they use.

We can offer them fuel-saving transport fuels and lubricants, blend in sustainable biofuels, capture CO_2 at the point of production and store it underground – as we plan to do at Canada's oil sands.

We also help our customers to reduce their fuel consumption. For instance, in a programme called FuelSave, we have trained more than 130,000 car drivers in different countries to cut their fuel consumption, by 10-20%, just by driving differently.

Our philosophy is that customers who save fuel spend less money. And happy customers tend to be loyal customers.

I can almost hear the question: What about electric mobility?

Let me be clear: we don't oppose electric mobility. Why would we? Our future customers will decide which type of fuel they want to buy. And we'll embrace that and work hard to help them realise their aspirations.

Over a billion new vehicles are expected to come on to the world's roads between now and 2050 – more than doubling today's total.

So there will be room and need for many different fuel types, including conventional fuels, biofuels and electricity.

And as I said earlier, Shell supplies natural gas for electricity. We also offer gasification technology that would enable a cleaner use of coal and more effective application of CO_2 capture technology; and we produce wind power.

All of which is necessary to make electric mobility possible in the first place.

So I challenge anyone to paint a plausible mobility future without a role for Shell.

Consumer nations

From individual consumers, it's a small step to consumer nations, the countries that import more energy than they produce. When it comes to oil, the United States is one of them.

Consumer nations want energy supplies that are sustainable and secure.

In response, energy companies will have to produce more energy, deploy more low-carbon technologies, and help build a more diverse energy mix.

Let me deal with the latter point – energy diversity – straight away. At various stages in its history, Shell has invested in other segments of the energy market than most of you would associate us with. For instance, in the past, we've had serious involvement in solar, forestry, nuclear power and coal mining. We sold these interests because we found that others were better at it than we were.

That doesn't mean we have given up on trying new things. For instance, we're a technology leader in the biofuels space; we distribute more biofuels than any other company, and we work very hard to build sustainable supply chains.

It's also not the first time the industry has had to respond to concerns over supply security. In the aftermath of the oil crises of the 1970s, for instance, the industry gained greater access to the Gulf of Mexico, which today makes a vital contribution to America's supply security.

We would like to bring more oil to the US market from the cold waters of Alaska, the most promising hydrocarbons basin in the US, but we're facing legal opposition there.

Shell has been a responsible operator in Alaska since the 1950s, on land and at sea. We're confident that developing more of Alaska's resources would be a win-win-win situation for the state and local governments, the local communities and the companies involved.

In a different part of the world, we're currently pioneering the development of Floating LNG technology. This would allow us to produce and liquefy natural gas on floating installations at full sea off the coast of Australia, reducing the environmental impact on land and sparing us the cost of piping the natural gas to land over a long distance.

Global supply security depends not only on opening up new geographic and technology frontiers, but also on recovering more from existing fields.

Right now, on average, oil and gas companies produce 35% of the original oil in reservoirs. The rest stays in the ground because it's uneconomical to produce.

If we could increase this by just 1% worldwide, it could yield some 20-30 billion barrels of additional oil, as much as the proven oil reserves of the USA.

A positive example is Belridge, California, where it's proved possible in some fields to produce more than 80% of the oil in place. Without enhanced oil recovery technology, we

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would have been lucky to recover 10%, given that this oil is very heavy.

Getting more oil out of the ground is an area of common ground between those who want to produce and sell oil, and those who want to buy and consume it.

Producer nations

Which brings us to our third group of customers: the countries that export oil and natural gas.

For international oil companies, the days of easy access to easy oil are gone.

Governments of countries with abundant resources want their societies to benefit – and they want more involvement by their National Oil Companies.

International companies have to address these development aspirations.

The entry ticket will be technology that makes a difference.

We have other important things to offer too, such as a global reach, and a huge community of end-consumers.

We also invest in local talent.

Take Qatar, where we are investing billions of dollars in an LNG plant and the Pearl GTL plant, which will turn natural gas into liquid transportation fuel and other products. We will operate and maintain a fleet of 25 of the world's largest LNG tankers, while developing capabilities within Qatar's own shipping company Nakilat. The aim is to phase out our own role and hand over the management of the fleet to Nakilat.

Building bridges

In the long run, the distinction between producer nations and consumer nations will lose some of its relevance.

For one thing, energy demand is surging everywhere, including in regions we think of as oil exporters. Some exporting countries have already become, or will soon become, net importers – think of Egypt, Indonesia and Mexico.

In addition, environmental awareness is growing, not only in North America or Europe, but in China, Latin America and the Middle East as well.

The United Nations Climate Change Conference in Copenhagen in December offers a good opportunity to build bridges between consumer and producer nations, and between the developed and developing world.

Shell's preferred outcome for Copenhagen would be tangible progress in developing a global carbon market as a way of putting a price on emitting greenhouse gases.

We need such a market as the most effective way of promoting low carbon technologies, in particular carbon capture and storage.

A lot – not everything – will depend on how far the United States is prepared to push the agenda forward.

There is the perception that the oil and gas industry is 100% opposed to Congressional efforts to enact climate legislation.

While other companies can address their own positions, this is not the position of Shell. As a member of United States Climate Action Partnership, we are actively involved in helping Congress enact a fair and effective cap and trade program. We recognise the value of such action in spurring investment and positioning the United States as a leader in the coming international climate negotiations.

Legislation that passed the House earlier this year is a step toward achieving this. We will continue our efforts to improve this legislation as it moves to the Senate.

What does it take for companies?

Our customers – be they motorists or governments – all want at least some control over the fire, and it's our task as an energy company to make that possible.

So what will it take on our end to be a successful global energy company in the 21st century?

At a time of transformation, it's more important than ever that our people think in an integrated way, identifying where in the energy system we can add most value for our customers – and capture most value for our shareholders.

"Future customers will base their choices on more accurate information, which they will obtain more quickly, from around the world."

That's easier said than done. Shell's activities range from producing energy deep below the frozen waters off the coast of Siberia to refuelling millions of cars each day.

Shell produces oil, sure. But you have to ask yourself what oil is for. That's when you see that we're offering people the possibility to travel.

And our natural gas heats and cools homes, helps people to cook their food, and light their nights.

By thinking about our activities in an integrated way, it will also be easier to innovate in the right direction.

Innovation still is a key differentiator, perhaps even more so than in the past.

Future customers will base their choices on more accurate information, which they will obtain more quickly, from around the world.

Winning companies will be the ones that stay ahead of the rising aspirations of energy customers, through innovation, pushing the limits of what is possible.

The key innovation challenge is to produce more energy at reduced environmental cost as the only way to keep all of our customers satisfied.

Winning companies also will be successful at recruiting diverse people with diverse talents.

In those areas where Shell is in direct contact with our customers, we need savvy people who reflect the diversity of all the world's cultures.

Where we explore the oceans for oil and gas, and design and develop big projects, the must-have is deep technical expertise.

Conclusion

One of Shell's most demanding customers, President Obama, recently had this to say: "We know that if we put the right rules and incentives in place, we will unleash the creative power of our best scientists, engineers, and entrepreneurs to build a better world."

I'd like to reassure President Obama that the challenge of building a better world already sparks our excitement and motivation.

Our favourite pastime is pioneering game-changing energy technologies.

We are also realists. We've learned from experience – sometimes the hard way – that it takes time to develop and build a market for new types of energy.

That's why a more efficient use of energy is crucial. Governments, companies and all of us as consumers will have to show leadership in that regard.

I'd like us to build a community of responsible energy consumers together, keen to pass on to future generations as many energy options as we enjoy today.

Together, we choose the best path to a new energy future.

Thank you.

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