



Energy Security

The Private Sector Perspective

Roxanne Decyk

Corporate Affairs and Sustainable Development Director
Royal Dutch Shell plc

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Roxanne Decyk is the Corporate Affairs and Sustainable Development Director for Royal Dutch Shell plc. In this capacity, she oversees regional business coordination, global government affairs, communications, sustainable development, security and HSE for the \$330 billion energy company. Effective October 1, 2007, Roxanne was appointed a member of the Executive Committee of Royal Dutch Shell plc. Prior to this position, she led strategy for Royal Dutch Shell plc and served as Senior Vice President for corporate affairs and human resources for Shell Oil Company. Earlier in her career she held senior positions in the oil and automotive industries and practiced law. Roxanne has served on corporate boards in the US and UK over the past 20 years and is active in international women’s organizations. She is a member of the Council on Foreign Relations, the International Oil and Gas Advisory Board to the UKTI and a trustee of the Shell Foundation.

In this speech, Roxanne Decyk discusses global energy security and explains how the economic recession has made it more difficult for the industry to keep up investments. This could lead to a severe supply crunch when the economy picks up and the long-term trend of growing energy demand resumes. She goes on to explain what the industry has to offer to help the world achieve global and sustainable energy security: making the most of oil and gas resources, reducing CO₂-intensity of fossil fuels, and helping society to broaden the energy mix. But industry cannot do this alone. We need positive government action in the following areas: access to resources, tax regimes, CO₂ policy frameworks, and more diverse and secure energy supply routes.

Introduction

I am honored to be here and to have an opportunity to offer a private sector perspective on the theme of global energy security.

My aim today is to discuss the challenges we face in the world of energy, and offer up possible elements for a coherent response, involving industry and government.

It's fitting that we meet in Istanbul.

For centuries, Turkey has been a bridge between continents and cultures.

Soon it will also become an important *energy* bridge connecting producer countries in the Caspian and the Middle East with consumer markets in Europe.

Shell's presence in Turkey dates back 85 years. And, today, Turkey is a key growth market for our Downstream business.

Energy security

Turning to energy security, for Shell that involves both *supply* security for *consumer* nations and *demand* security for *producer* nations, which they need to justify large *investments* in their energy sector.

Energy security also must be *sustainable*. *Future generations* should have as at least many energy options to choose from as *we* enjoy today.

The reality of energy security is that it will take all parties and many decades to achieve it.

Industry, government, non-governmental organizations and each one of us as consumers, we all have a part to play.

Before we focus on the role of companies and governments, let's review the context in which we operate.

Our long-term challenge remains unchanged: we need to produce more energy and emit less CO₂, a task made more challenging by the recession the world is in today.

3 Hard Truths

The long-term challenge can be described as a set of three hard truths.

The first hard truth is that, due to a growing world population and rising wealth levels in developing countries, the demand for energy will likely double during the first half of this century.

And so the second hard truth is that it will be very difficult to supply that extra energy, even if we produce energy from all possible sources.

The third hard truth is that, with energy-use going up, CO₂ emissions will also increase.

The economic recession temporarily masks the "hardness" of these hard truths by suppressing energy demand and moderating CO₂ emissions.

But they will return with a vengeance when the economy recovers and demand for energy picks up.

Economic recession impact

Against this backdrop, you would expect energy companies to be committed to investing in new projects so they can bring on line extra supplies when the economy recovers.

Future generations should have as at least many energy options to choose from as we enjoy today.

However, the impact of the recession makes that difficult.

Oil *demand* is 3% lower than last year.

The oil *price* has dropped to where it was in 2004, but *costs* are still double what they were then.

Profits are being squeezed. And some companies are making losses.

Due to the scarcity of credit, smaller and medium-sized players are strapped for cash.

Many planned investments have been postponed. You may have noticed that in the past one or two months, no major new investments have been announced.

According to a survey by Barclays' Capital of over 350 upstream companies, investments will *fall* by 12% in 2009.

And other industry observers are already suggesting that this estimate is too optimistic.

If investments were to fall dramatically, a new and severe supply crunch will be only a matter of time.

Industry contribution

So what should be our response?

For one thing, we need to work together. Neither industry nor government can solve these problems alone.

But if all of us bring our specific strengths to the table, we should be able to mobilize sufficient brainpower and capital to stay on course.

These are the contributions I think international oil companies can make:

- making the most of the world's hydrocarbon resources;
- reducing the CO₂ intensity of fossil fuels;
- and broadening the energy mix.

Hydrocarbon resources

Let's look at hydrocarbons first.

Our scenario work shows that oil and natural gas will continue to make up the lion's share of the world's energy mix for decades to come.

But we're all aware that hydrocarbons are finite, and that much of the low-hanging fruit has been harvested.

With long-term energy demand growing, and supplies of easy oil dwindling, our industry has a responsibility to unlock new, more difficult hydrocarbon resources and squeeze as many barrels as possible from ageing fields.

Shell and the industry have historically invested in technologies aimed at increasing production from conventional oil and gas fields. In the past few years, research and development budgets have increased substantially, and projects to efficiently and sustainably develop unconventional resources like oil shale, tight gas and oil sands are a priority.

Enhanced Oil Recovery (EOR)

When oil companies stop producing from a field, that doesn't mean the reservoir has been completely emptied. On average only about a third of the oil gets produced. The rest remains underground, because it's uneconomical or not technically feasible to extract it.

So finding profitable ways to squeeze more barrels out of ageing fields constitutes a real prize.

There are several techniques to enhance oil recovery: all aiming to make the oil less sticky, or viscous, and improve the flow of oil. We can heat with steam, or inject gases or chemicals.

A record-setting operation, using steam injection, is carried out at the Belridge complex in California by Aera Energy, a 52% Shell-owned company.

The oil there is very heavy and sticky, but Aera has managed to recover more than 80% of the oil in some fields, where we would otherwise have been lucky to recover 10%.

If we could increase what we expect to recover from reservoirs globally by just 1%, it would yield some 20-30 billion barrels of additional oil, as much as the USA's proven oil reserves.

Reducing CO₂ intensity of fossil fuels

A second area of contributions by our industry is reducing the CO₂-intensity of fossil fuels.

There are several ways to do this.

Our industry has a responsibility to unlock new, more difficult hydrocarbon resources and squeeze as many barrels as possible from ageing fields.

One is to increase energy efficiency in our own operations.

International Oil Companies don't just *produce* energy. We also *consume* energy, especially in our upstream operations, refineries and chemical plants.

So we are constantly eliminating inefficiencies and coming up with creative solutions.

For instance, Shell developed unmanned monotowers. These are small offshore platforms that are powered by wind and solar power, and need very little maintenance. This concept has made it economical to develop small gas fields in the North Sea.

CO2 Capture and Storage

Another way to make fossil fuels cleaner is to capture CO2 from power stations and large industrial installations, and store it underground in empty gas and oil fields or aquifers.

For the oil & gas industry, CCS is an opportunity. We've been injecting CO2 in oil fields for decades to boost production. So we think we have the knowledge and expertise to sequester CO2 safely and responsibly.

Shell is involved in a number of potential CCS projects in Canada, Europe and Australia. In Germany, we're taking part in CO2 SINK, a public-private research project that began injecting CO2 in a saline aquifer in June 2008.

In the transport sector, the challenge is to reduce the CO2-intensity of liquid fuels on a well-to-wheel basis.

We can do this through a combination of improved conventional fuels, sustainable biofuels, lighter-weight vehicles, more efficient engines, fuel-saving driving techniques, and, in the longer term, by applying CCS to liquid fuel production.

But CCS, as I will explain in a moment, will require significant government as well as industry commitment to make it viable.

Broadening the energy mix

The third area I want to discuss is what we can do to help broaden the energy mix.

If you look at the core competencies of International Oil Companies, then collectively we are good at: geology, drilling, gas handling, refining, chemistry, and distribution of transport fuels.

In other words, hydrocarbons are our core business.

Within that category, Shell is increasingly focusing on natural gas. We expect that, by 2012, around half of our production will be natural gas.

This is not merely a shift in our portfolio. Increasing both gas production and transportation, importantly by liquefying it and shipping the LNG to markets like China and India, as well as Europe, means that more clean-burning natural gas will be available to displace coal as the fuel for power plants.

A gas-fired power plant emits 40% less CO2 than a conventional coal-fired plant.

Most companies are also developing new areas of expertise. One company has expressed interest in diversifying into nuclear energy; another is a leader in geothermal power.

Shell has seriously studied wind, thin-film solar, hydrogen and biofuels.

Today, the largest of these activities is in wind and we have 550 MW of capacity. That puts us in the world's top-20 producers of wind power.

But to put that in perspective: 550 MW equals the power generated by a single coal-fired power station – and not even a very big one.

For the next few years, real growth in the Shell renewables portfolio will concentrate around biofuels. That's because they are a natural fit with our downstream capabilities in transport fuel.

We believe biofuels could grow from just 1% of the world's transport fuel mix today to between 7 and 10% during the next few decades.

And, provided they are sustainably sourced, biofuels can make a substantial contribution to reducing CO2 emissions from transport.

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Government contributions

So much for what business can do. Now what about government?

I see room for positive action by governments in the following areas:

- access to resources,
- fiscal stability,
- capital availability,
- CO2 policy frameworks,
- and energy supply routes.

Access to resources

Perhaps the most important area for government action is access to resources.

The evidence suggests that countries with open door policies benefit by attracting more foreign direct investment in their energy sectors. In practice this means that more exploration wells are drilled, that production grows faster, is maintained at higher levels, over a longer period of time, and that revenues from the energy sector are higher.

Fiscal stability

Three major factors affect the private sector's ability to invest in future energy production: high costs, the credit crunch and high tax levels. Of these, only taxes are controlled directly by governments.

Unfortunately, governments often suddenly increase taxes when oil prices are high and then keep them there when the oil price drops and the business environment deteriorates.

This kind of approach further reduces the already limited amount of money that's available for investment.

We'd much prefer tax structures that remain stable through the economic cycle.

Capital availability

But stable tax regimes, aren't enough in today's exceptional circumstances.

Many smaller and medium-sized companies are having trouble raising capital for new projects.

Governments and International Financial Institutions could help kick-start the very large projects that go beyond individual companies, such as trans-border pipelines.

And governments should urgently look at ways of stimulating lending for private companies to handle the rest.

CO₂ policy frameworks

Climate policy is another area where we need government action.

Action on climate change is necessary. But CO₂ pricing will add to the cost of investments in energy projects.

That makes early clarity on climate policy frameworks important. A well-designed and integrated global climate framework can enhance energy security by encouraging investment.

Shell favours cap-and-trade systems for setting the price of CO₂. We believe it offers distinct advantages over other measures being considered. It sets a certifiable environmental outcome – the cap. It also provides the commercial incentive for companies to look for the lowest-cost reduction measures.

These encourage an earlier and better-managed transition to a future energy portfolio by enabling liquid transport fuels and the vast invested infrastructure supporting them more time to adapt to future needs.

Finally we need governments to focus specifically on CCS, which can begin reducing emissions from power plants and CO₂ intensive manufacturing within the next decade. But this will happen only if governments enable the huge investment that will be required through robust carbon pricing, credit for CO₂ stored and appropriate regulatory frameworks.

Supply routes

A fourth area for government action concerns energy transit routes.

As energy markets globalise, we need as many pipelines and reliable sea routes to connect suppliers and customers.

If we look at Europe, beefing up security of supply requires shipping in more Liquefied Natural Gas, and piping more gas from the Caspian, the Middle East and North Africa.

A well-designed and integrated global climate framework can enhance energy security by encouraging investment.

This brings into focus Turkey's possible role as an important transit country. For the coming years, it would seem to me that it is important for Turkey and the European Union to coordinate their steps, not just with each other, but with countries like Kazakhstan, Turkmenistan, Azerbaijan and possibly Syria and Iraq while bearing in mind that the energy relationship with Russia is also mutually beneficial.

Security

A more intricate network of supply routes increases flexibility and stability in the system, but only if the free flow of energy can be guaranteed.

As the world's energy supply lines extend across longer distances, they unfortunately also become more vulnerable to sabotage and piracy.

The attack by the PKK on the Baku-Tbilisi-Ceyhan pipeline last year underlines the risks involved.

Piracy around the Horn of Africa is another obvious threat, as are attacks on offshore production and shipping in the Gulf of Guinea.

Effective management of these types of security risks requires cross-border cooperation.

This is where the industry looks to organisations like NATO and the European Union – and their evolving partnerships with countries like Russia, Ukraine, Kazakhstan, Turkmenistan and China.

We are grateful to NATO, the EU, China, Russia and other countries for their combined efforts to protect merchant ships in the Gulf of Aden.

Another encouraging sign is last year's endorsement by the United Nations General Assembly of Turkmenistan's International Energy Security proposal.

Recommendation

Global energy security is a long-term challenge that requires an integrated response, involving scientists, engineers, politicians, diplomats and the military, all working together.

The international oil and gas industry has more than a century of experience in delivering energy to customers worldwide.

We are committed to make our expertise available and to work with governments in developing effective and sustainable energy solutions.

So let me thank you for giving us a seat at the table today.

I hope we will continue this dialogue and collaboration between industry and government at both national and international levels.

Thank you.

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