

The Global Oil and Gas Challenge
Speaker: Lord Browne
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Your Majesty, Your Royal Highness, Ladies and Gentlemen.

It is a privilege and a great honour to be able to take part in this event.

We have a great business in Norway, and as well as the operations there we have an excellent partnership with Statoil, with whom we work in the Caspian Sea and Africa.

The UK and Norway have a long history of cooperation in energy, and in the science and technology which has underpinned the development of the North Sea.

It is just 40 years since the first fields in the North Sea were discovered, and the history of the province over those four decades is illustrative of the history of the industry as a whole.

Back in the 1960s, people were very sceptical of the chances of developing those first fields, and even more sceptical of anyone being able to do so commercially.

Then through the 1970s and 80s, people regularly predicted the end of the province as a significant producer.

I remember when I became the manager of the Forties field twenty-five years ago, the accepted wisdom was that the field would plateau in production and be decommissioned by the mid 90s, having produced perhaps 45 per cent of the oil in place.

The recovery rate from Forties has now reached well over 60 per cent and the field is still producing.

The story of the North Sea matches that of the industry worldwide.

In 1972 the Club of Rome announced, in full seriousness, that oil would run out in 1990. I'd just joined the industry and people asked me anxiously if I hadn't made a mistake in doing so.

At the end of 1972, world reserves of oil were around 670 thousand million barrels and reserves of gas were 1,900 tcf.

At the end of 2004, world reserves of oil were almost 1,200 thousand million barrels and reserves of gas were over 6,000 tcf.

And that increase came about despite the significant production in the intervening 32 years.

That continued success in the North Sea and internationally is due to technology – the application of constantly advancing science.

In the use of IT to enable techniques such as visualisation, in the management of pipeline and processing technology. Individually and collectively those advances have made possible developments which were previously impossible, and have progressively reduced costs in an industry where costs are always a challenge.

They have extended the life of the North Sea beyond anything even the more optimistic of us expected in the 1960s and 70s, and they have helped to diversify and sustain the industry across the world.

But despite all that success there is still a strong strain of doubt and pessimism about the industry's future.

Some people think the industry has entered its final days.

If you go into the bookshop around the corner from here you can find a dozen books, all predicting the end of the oil era.

“Hubbert's Peak – the impending world oil shortage”. “Twilight in the Desert” “Converging Catastrophes of the

21st century”.

What that sort of analysis ignores is one fundamental characteristic, not just of this industry, but of human life generally which is the capacity to adapt - especially in the face of risk and danger.

I think it was Adam Smith who first noted that adaptability as a feature of human behaviour, and therefore as a fundamental element of economic activity. In our industry, adaptation comes through the application of science and technology.

To be optimistic now is not to deny the scale of the challenges the industry faces. There are at least four major challenges.

Firstly, demand is rising.

The world's population is growing, and more and more people have the prosperity to be able to afford energy for heat, light and mobility.

On a worldwide basis there are probably an additional 200 million new customers for commercial energy every year. Chinese demand grew by 2.3 million barrels per day between the end of 1999 and the beginning of this year.

And although alternative energy sources are being developed, the timescale involved in making those sources commercial at scale means that, for the foreseeable future, energy demand will still be focused on hydrocarbons led by oil and gas.

On the figures produced by the International Energy Agency, demand for oil by 2015 will be between 15 and 20 per cent higher than it is today – over 90 million barrels a day. On the same estimates, the demand for gas could be more than 40 per cent higher than it is now.

Secondly, the requirement for trade is growing. Supply and demand are not co-located. World trade in oil has grown by 18 per cent in just the last five years alone.

Trade accounts for well over half the oil used everyday. By 2015 that could increase to two thirds. That means more than 65 million barrels a day.

At the same time it is becoming obvious that the available resources are concentrated in a limited number of places – in Africa, in the Middle East, and in Russia. Some of those places remain, for the moment, beyond the reach of international investment.

Then, thirdly there is the need for investment to ensure that the resources which are available are developed and brought to market in good time to meet rising demand. Investment in developing new fields and in establishing new infrastructure – such as pipelines and LNG terminals.

The scale of the necessary investment is rising. According to the International Energy Agency the annual requirement for investment in all forms of energy is now around \$560 bn a year. Of that, more than a third is in oil-field development and the infrastructure necessary to bring it to market. Perhaps \$200 bn a year.

That represents a 20 per cent increase over the level of investment which was being made through the 1990s.

And last, but not least, there is the longer term challenge of the environment. I think the period when people could live in the hope that issues such as climate change would be disproved and go away has passed.

If you read the statement published before the July summit by the scientific academies of all G8 countries you will find a cool and rational assessment of the evidence by some of the most authoritative scientists in the world.

The science is unfinished of course. There are things we don't know – there always will be.

But the academicians come to the unanimous conclusion that precautionary action is necessary.

The emissions of carbon into the atmosphere are now probably 16 per cent higher than they were in 1997 when the Kyoto protocol was signed. And they are set to be 33 per cent higher by 2010.

Climate change is a long term issue, of course, but year by year the point at which we could face harsh choices is coming nearer.

So growing demand, growing trade, a requirement for increased investment and the need to handle the long term environmental challenge of climate change and global warming.

Those are the reasons why people feel insecure about energy, and why once again it has become fashionable to talk about production peaking, about prices rising and rising, and about an energy shortage.

Those are serious challenges, but to say that the world and this industry in particular can't adapt is to deny the evidence of history.

And I believe there is already evidence that the adaptation is taking place.

Let me quote just two examples.

I mentioned the need for investment. The industry is already responding to that need.

The 1990s were a period of relatively low investment – for the simple reason that prices were low and cash flow was limited.

But that began to change with the turn of the century.

The underpinning of prices from 2000 onwards has increased the funds available, and the industry has responded by increasing investment.

Over the last five years annual upstream investment by the 5 largest companies in the industry has risen by over 50 per cent and is now running at around \$50 bn a year.

And that investment is effective because we're learning how to spread knowledge and share information. That is increasing the efficiency of every dollar spent.

The most significant organisational change in the industry in the last decade has been the development of the so-called "supermajors". I think that is the wrong word. BP is a large company but it is still only 10th largest in the industry behind not just Exxon, but also Gazprom, Saudi Aramco, Pemex and several others.

The benefit of the organisational changes which have been made in the private side of the industry is that global companies can take knowledge and apply it across the world very quickly.

Two years ago we invested in Russia, creating a new company called TNK-BP. In just two years that company has been able to increase production by 35 per cent, and to increase reserves year by year.

We've been able to apply technology developed in the North Sea and the US and to increase recovery rates, to improve the management of reservoirs, and to identify whole new structures – some of them previously completely unknown.

Some of this is due to breakthroughs in technology – but most is simply down to the application of knowledge on an international scale.

We believe we're just at the beginning of the process and that there's enormous potential still to be realised.

My second example is about the environment.

I don't believe we can ignore the evidence presented by the academicians which I mentioned earlier. Nor can we wait for some global political agreement – we could be waiting for ever.

We have to act now.

What can business do?

I'll talk about BP, but I think the approach we're taking is replicable in many other businesses, large and small.

We started by reducing the emissions from our own operations.

We set a target – of reducing emissions by 10 per cent below the 1990 base-line.

We established an internal trading system, so that we could apply resources in the most effective way – rather than just asking every business unit to achieve the same percentage reduction.

We met the target – ahead of schedule – and we found that rather than costing us money, the process added value – over \$600 million of value – because most of the reductions were achieved by improving efficiency, changing business practices, and eliminating routine flaring.

Now we feel it is time to take another step.

Our actions are built on the presumption that the day will come when carbon is priced. The pricing may not be universal, but I believe it will be quite widespread across the world within the next decade.

The European emissions trading system is an excellent initial step. So too are the initiatives being taken by different states in the USA.

As carbon is priced, we believe there will be a market for technologies which reduce emissions, and which displace energy production which would otherwise generate emissions.

We've announced one project which I believe has huge and very exciting international potential.

The process of carbon capture and sequestration allows us to separate out carbon from the other elements in different forms of hydrocarbon; to capture and store that carbon and to use the hydrogen which remains to produce carbon-free electricity.

We are now in the process of developing our first project – using gas from the North Sea, and sending the hydrogen to the on-shore power station at Peterhead.

That project is at an early stage and will need an appropriate regulatory and fiscal framework.

But we are very optimistic about the technology, and as we learn from the North Sea project, we hope to develop a series of others – in Europe, in the US, in India and in China.

I understand that initiatives in this area are also being taken in Norway and we would be delighted to be involved in that.

Sequestration and the production of decarbonised fuels will help to change the fuel mix in the sector which is responsible for a greater proportion of emissions than any other – that is the power sector. It is one example of practical action which the industry can take to meet the challenge of climate change and to avoid that challenge becoming a crisis.

Ladies and Gentlemen, I've quoted those examples deliberately because they are illustrations of how progress made in the North Sea can be taken and applied on a much wider basis.

Lord Broers in his Reith lectures earlier this year argued that science and technology in many different fields are crucial to the future of human life. He also made clear that science and technology are international – knowledge doesn't recognise international frontiers.

That is certainly true in the case of energy.

Over the last forty years technology has transformed the potential of the North Sea and the whole industry worldwide beyond anything we believed possible.

Now there are new and serious challenges.

But if we can continue to develop science and technology, and simultaneously the mechanisms to apply that knowledge on a global basis, I'm convinced we can meet those challenges, and prove that those who are writing off this industry have once again got their timing wrong.

Thank you very much.