

Speech by Bob Dudley, BP Group Chief Executive, to Canada Europe Energy Summit, London, 19 November, 2013

Global Energy Security

Thank you very much Tony and High Commissioner Campbell, and a very good morning. It is good to see so many colleagues here from the industry and from Canada. I really appreciate this invitation.

You know why - because Canada is great place to do business. We have first-hand experience of that in BP over a long history that stretches back to 1926 and includes such heritage companies as Dome, Hudson's Bay Oil & Gas, Supertest, CANMAR and Amoco.

Canada has a unique position in the energy world, with its large reserves of conventional heavy oil, plus the potential of the Arctic and East Coast deepwater basins. The massive area known as the Western Canadian Sedimentary Basin covers half a million square miles and remains one of the world's largest oil and gas provinces.

Such a portfolio needs very careful development and that is precisely what we have seen. Canada has a stable political and financial environment which gives companies certainty to invest in a variety of projects across the country. This is combined with appropriate regulation to make sure resources are produced responsibly.

However, let me take a step or two back - as you've asked me to talk about the wider topic of global energy security.

I'll start with an overview of what we expect to see globally over the next couple of decades. Then I want to focus on Canada's contribution to the future of energy. And finally I'll tell you a little more about BP's own experience and our plans.

The global energy future

When you look at the current global trends in energy – and the likely future trends – as our economists do in BP, there are some very interesting facts that jump out at you.

The overall global demand for energy is expected to keep rising at about 1.6% a year – some 30% in total between now and 2030 – so no real surprise there, although it is a huge number.

And nearly all that demand – over 90% - is coming from the emerging economies of the non-OECD world. It is the equivalent of another US and Canada – and another China.

In fact, the biggest surprises have been on the supply side. Just a few years ago, the world was worrying about whether enough energy resources existed to meet demand. Everyone was talking about 'peak oil'. Since then, we have seen a phenomenal opening up of supply.

The North American shale revolution has been the big talking point. But Canadian heavy oil is another important and growing source of energy. Oil and gas are being found in deeper reservoirs offshore. The Arctic is starting to open up. There are vast

So it seems the peak oil theory has, well... peaked.

Gas is the fuel of choice for power when it is competitive with coal - as it has been in Canada and the US - and we expect its use to grow around 2% a year to 2030.

We don't expect oil demand to grow that quickly because it's primarily the fuel of choice for transport, and vehicles are set to become much more efficient over the next two decades. However, we still expect oil consumption to rise by around 0.8% a year up to 2030. And that translates into an additional 16 million barrels a day – roughly the current production of Russia and Saudi Arabia together.

The last few years have also been instructive as far as carbon emissions are concerned. We have seen emissions from power generation fall in places like North America when gas has become more plentiful and displaced coal.

In Europe, by contrast, despite an emissions trading system and multiple mandates, gas supply has been constrained, and coal displaced from the US has been used in places like Germany and the UK, with the result that emissions have risen in those countries.

Another big downward force on emissions has been energy efficiency – more fuel efficient cars, smarter buildings, advanced motors and so on.

Meanwhile, renewable sources, other than hydroelectricity, account for no more than 2% of global energy and we expect that to rise quickly, but to no more than 6% by 2030.

We should keep investing in renewables to make them more competitive but we should not rely on them to 'turn the dial' in the short or medium term.

I think the world is on a long wavelength transition to a low carbon economy but it will happen when market forces support it, and right now the best routes seem to be efficiency and gas for coal.

So what does this tell us about the idea of ‘global energy security’?
I think there are two pathways that lead to this goal.

One is energy security being achieved as individual countries increase their own domestic production and reduce dependence on imports. That is what is happening rapidly in the US and I believe we will see other countries following suit. There is a lot of shale gas and tight oil in Asia, Europe, South America and Africa. Countries such as India and China are doing more to find and produce their own reserves.

But global energy security also implies that the world as a whole will achieve energy security through the building of new supply chains. Those chains consist of both physical infrastructure – pipelines and ships – and of human relationships. And that’s happening too.

A few years ago there were big worries about US dependence on Middle Eastern oil – that’s been alleviated by shale production and improvements in the geo-political climate. There were also big worries about Europe’s dependence on Russian gas – but again the energy has continued to flow. Also there are new supplies now opening, such as the southern corridor which is due to bring natural gas from the Caspian to Southern Europe – that’s a project we are very much involved with in BP.

Canada and the energy future

So where does Canada fit into this energy future? Clearly the country's role is as one of the big producers.

From BP's Statistical Review of World Energy for last year, in 2012, Canada had the world's third largest oil reserves, behind Venezuela – also based on heavy oil – and Saudi Arabia.

In other words Canada had larger reserves than Iran, Iraq, Russia or the US.

Its 174 billion barrels of oil reserves are enough to meet all North American demand for 20 years at today's consumption rates.

Canada was the fifth largest *producer* of oil – after Saudi Arabia, Russia, the US and China.

If we look at the data on trade we see that Canada exported more oil to the US than the Middle East did – almost 40% more in fact.

So Canada is very much in the business of providing energy security to other countries by building and maintaining strong supply chains.

Canadian heavy oil in particular, is a major global energy resource and taking the long view, I think it is in the interest of its many potential customers for those supply chains to be established.

For example, in BP we are just completing a massive upgrade of our Whiting refinery in Indiana near Chicago, which has equipped it to process Canadian heavy, among other crudes. We also have a joint venture refinery with Husky Energy at Toledo in Ohio which can process Canadian heavy crude.

But the US isn't the only market and Canada has been looking to increase its oil exports outside of North America.

That has created quite a debate with regard to the EU's proposed Fuel Quality Directive which involves assigning different carbon profiles to different crudes, affecting their competitiveness as sources of supply for European refineries.

In BP we recognize that different crudes have different carbon profiles, from well to wheels. However the amount of debate over this shows that the methodology to measure it is not even close to being precise enough to monitor and verify the carbon profiles.

For example many crude oils will have a life-cycle carbon footprint that includes a substantial degree of flaring to remove co-produced gas.

At this stage BP, and I assure you, the wider EU industry believe that the most feasible approach at this stage is to take an average carbon value of the crude oils used each year by European refineries.

I am absolutely confident that over time, the logic of the market will prevail and we will see new infrastructure emerge to provide Canadian oil and gas with reliable routes to market.

Canada deserves such an outcome, not least because of its own responsible approach to environmental regulation.

I believe Canada's approach to regulation shows that the country is well aware of the environmental sensitivities of its energy resources. For example, the carbon levy in Alberta is something we support as a way of incentivizing companies to minimise emissions at the same time as funding research to reduce the environmental footprint even more.

I hope the world will come to a deeper understanding of how Canada is acting responsibly with regard to its distinctive energy landscape.

BP in Canada

We certainly have that understanding in BP and we want to play our part in Canada contributing to global energy security.

Let me briefly explain how we are going about that.

BP is active in three major plays in Canada, as I indicated: heavy oil, offshore basins in Nova Scotia, and the Arctic. Our integrated supply and trading business also spans the country and makes BP one of the top oil and natural gas marketers and traders in Canada.

Our lubricants business, Castrol, has been active in Canada for many years, serving the automotive and industrial sectors. This has included making tailored products for extreme temperature conditions and specialist applications such as snowmobiles.

BP's Canadian business is based in Calgary, in Alberta, with a workforce of more than 300 people.

And our investment in Canada is now running at \$1bn a year.

Heavy oil

In the area of heavy oil, we have working interests in three properties, Sunrise, Pike and Terre de Grace. The Sunrise property is furthest along for development and we anticipate first production next year, in 2014.

This is a good example of using new technology to develop a mature basin in new ways – in particular through the application of Steam Assisted Gravity Drainage or, SAGD. All three properties which BP has an interest in will be developed using SAGD.

SAGD is a relatively new extraction method. Only ten years has elapsed from its first use in Northern Alberta which brought about the increase in Canada's reserves by over 170 billion barrels in 2003. It is therefore very early in its life cycle and we are sure further advances will occur.

Indeed the heavy oil industry has a lot to explore in terms of technology. There are the seismic technologies used to understand reservoir behaviour. There are new departures in drilling. There are possibilities for enhanced oil recovery – or EOR, to increase yield by using solvents or additives.

This is why BP is a founding member - and an active member - of Canada's Oil Sands Innovation Alliance - or COSIA. That's an organization committed to improving environmental performance from technology in the development of heavy oil.

We've also taken another initiative by supporting a heavy oil laboratory here in the UK at the University of Surrey. It's called the BP Centre for Petroleum and Surface Chemistry and it's devoted to making heavy oil recovery more efficient. There are ten researchers at the centre and in a year they've already come up with 10 invention disclosures and patent applications. So we really hope to see some of those innovations actually getting used in Canada in the not too distant future.

Nova Scotia

Our deepwater business in Canada is younger than the heavy oil one. In fact it was just a year ago, in November 2012, that we were awarded 4 blocks to explore off the shore of Nova Scotia.

We've drawn up an exploration plan which has started with an Environmental Impact Assessment this year to ensure we don't have unacceptable impacts on wildlife or the environment. Then hopefully this will pave the way for the acquisition of 3D seismic data over all four blocks during the next two years.

We make our seismic soundings in such areas using something called WATS, or Wide Azimuth Towed Streamer. It involves ships that tow multiple sets of cables and take many readings from many angles. We then process that data using our supercomputing facilities. So that's what will be happening on Canada's East Coast next year, subject to the environmental assessment.

Arctic

Finally, BP is the largest licence holder in the Canadian Beaufort Sea with acreage that amounts to more than 10,000 square kilometres.

We have a joint venture with Imperial Oil and ExxonMobil for two of the exploration licenses.

Imperial is the operator of the JV and recently filed a project description proposing a potential timeline which would see a three well season begin in 2020 continuing through 2021 and 2022.

As this clearly says, the Arctic is a very long term play. There is so much to do by way of preparation and understanding before major developments can be contemplated.

In 2009 we actually did undertake the industry's highest latitude 3D seismic survey 180 kilometres off Canada's northern shore, along the edge of the ice cap. We used an ultra-modern vessel that could acquire data quickly. We also had on board local marine mammal observers who logged sightings of marine mammals and also alerted everyone if a whale was in the area so that operations could pause.

And there are many other things to consider. We have to demonstrate we have safety critical equipment. We have to show we can take all possible steps to prevent a spill but also to respond should one occur.

All these factors are being actively worked and BP is working with other companies in a range of Joint Industry Programmes, such as the Alaska Clean Seas and a pan-Arctic programme set up by the International Association of Oil and Gas Producers.

Last but not least, we need to have respect for the wishes of all stakeholders, including the inhabitants of the Arctic communities. People such as the native people of Northern Canada who want to see development if it can improve their lives and their children's opportunities but they also want preserve their cultural heritage.

Conclusion

So to conclude, we are investing a lot of capital and effort in Canada because it is a good environment for business and I believe we can help Canada fulfil its role in contributing to global energy security.

Please don't take my word for it. Latest figures from the Canadian Association of Oil Producers show that no less than 64 European Companies are now working as suppliers for Canadian oil sands companies alone. Most are currently Italian, German and British.

If one looks at the very long term, the world will need energy in all its forms and it will continue to need large volumes of oil and gas. It will make sense to continue to carefully develop heavy oil, Canadian deep water and eventually Arctic basins, and bring the energy to the markets of the world..

In my humble opinion, Canada is showing great wisdom in the way it approaches its unique energy resources, balancing support for investment with great care over the environment.

I recommend Canada as a great place to invest, and to visit, and I wish the country well in developing its trading links with Europe and around the world. Thank you.