



New challenges, new priorities, new choices

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Introduction

Your Excellency, Louise, Raphael.

Good morning and thank you for the invitation to speak at the start of this great event. I've been asked to speak for 15 minutes. Is that a long time or a short time? I guess it depends on the speech and possibly on the speaker. But I'll try to make it a quick 15 minutes.

I mention time because it is relative. And in our industry, we work to multiple timescales. One moment you are signing a contract that runs to 2050. The next you are looking at a technology that could turn your world upside down in a month. And let's not even start on how fast oil prices can move – or stock prices for that matter.

We are in a phase of rapid change – like the automobile industry after the Model T or computing after Windows. And at times like this, when we are all racing around, trying to keep up with the competition, it is more important than ever to make time to pause and think through what the future may hold.

That's what we're doing later today with the launch of our BP Energy Outlook, looking at trends out to 2040. Our Chief Economist, Spencer Dale, will be here at 8am tomorrow to discuss the projections. That's early – but I promise it will be well worth it!

I'm not going to reveal Spencer's conclusions ... or maybe just a few. One thing I will say is that this year's Outlook examines no fewer than six different future scenarios.

Why is that? It's because we need to plan for many possible futures. In our world, the only certainty is uncertainty. And that means our business plans need to be good for all seasons.

So how do we go about developing such plans? Well, first I think it is important to deeply understand the new challenges we face. And second, we need the right strategic priorities to respond to them. That then helps us make well-informed choices on investments.

Let me explain what I mean by those challenges, priorities and choices. And finally, in line with the theme of IP Week, I'll ask what all of this means for new business operating models.

New challenges

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So let's start with the new challenges. How many here started in the industry before the year 2000?

How about before 1990?

What about before 1980?

Feels like a long time ago.

Back then, our main concern was scarcity. Would there be another oil crisis? Would the world run out of oil?

How things have changed.

Now, after the shale revolution, we have moved from scarcity to abundance. We now estimate that resources recoverable today could meet the world's demand to 2050 – at least twice over.

It's not that there's more oil and gas – we're just getting better at producing it. We actually increased production from our existing base operations in BP last year – up by 0.6%. That's remarkable in an industry that assumes the base declines.

As we know so well, abundance has an impact on the oil price which in turn has an impact on capital and operational spend. And those dynamics are here to stay. They have created a new era of hyper-competitiveness. And that's the first challenge I would point to today.

In the Upstream, the winners are those who can produce their reserves most competitively. And in the Downstream, the winners are those who can manufacture and market their products most competitively.

Meanwhile, we face another very different challenge in the shape of the transition to a low-carbon economy.

We've known about it for years, but things are now at a pivot point. Costs of renewable energy are plummeting. Consumer demand is rising. And governments are taking action. Carbon pricing now covers 40 countries and one-eighth of global carbon emissions.

This heightened commitment to a lower-carbon economy and a competitive market is challenging for us, and will give us opportunities. It's very good news for the world at

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large. It means more affordable energy for billions of people and a more sustainable planet.

And as daunting as this may seem for our industry, you can summarise it in six words: more energy, lower costs, fewer emissions.

New priorities, new choices

So, given these challenges, what are the new priorities for our industry? I think they match up fairly simply.

Providing more energy means growing our production. Achieving lower costs means maintaining capital discipline and maximising operational efficiency. And generating fewer emissions means operating and investing in ways that support the transition to a lower carbon economy.

Let me now look at how those priorities show up in the choices we make, right down the supply chain, from the production contract through to the customer product.

Growing production starts with choosing where to invest. We want to work with governments who are eager to build a competitive industry. One example in our portfolio is in Egypt, where we just started up the Atoll project seven months ahead of plan and only 33 months after discovery. That is part of a ramp-up of production in Egypt and part of a global programme to add 900,000 barrels of production by 2021.

Once the agreements have been signed, the focus is on capital discipline and I believe the key here is to work collaboratively with suppliers and contractors.

I think we are finally saying goodbye to the old world where suppliers inflated costs in good times and operators squeezed them in bad. If we work together, we'll break that cycle of boom and bust.

For instance, in Trinidad and Tobago, instead of buying a turbine, as we always have, we are using one on a 'power-by-the-hour' basis and the supplier – Baker Hughes GE in this case – services the kit. That keeps us both focused on performance.

Then once the project is built, the spotlight moves to operational efficiency. This is where digital technology has come of age at just the right time. Digital sensors to monitor; digital tools to control; digital simulations to optimise; and digital databases to organise.

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Our data-lake now receives a billion new records each day. That's around twice the traffic on Twitter – and much more interesting in my view. Recently we applied a mathematical model developed with a Californian start-up to optimise production at 180 onshore wells in the US. It led to a 75% cut in venting emissions, a 20% increase in production and a 20% fall in costs. Silicon Valley meets shale.

It's also about efficiency. We have developed technology using acoustic sensing which has helped us detect sand in our wells. When the tool was tested, the amount of sand entering the well dropped by 90% and we added around 2,500 barrels of production per day from one well.

I didn't expect that kind of thing when I joined this industry in 1979. And neither did I then grasp what the transition to a lower-carbon world would mean. Today, we need to reflect this transition by moving to a lower-carbon mix ourselves. And remember it is a transition, not an overnight switchover.

Looking at the BP Energy Outlook, it shows that we are on a broad course for the most diversified fuel mix ever. If current trends continue, by 2040 we estimate that non-fossil fuels are projected to grow to provide around one quarter of the world's energy, with the other three quarters supplied respectively by oil, gas, coal. And in a faster transition, consistent with the Paris Agreement, oil and gas still provide around 40% of the world's energy in 2040.

Oil will be used with increasing efficiency, and gas has a bright future. In fact, we think gas could grow three times as fast as oil, as it is used in heating, as fuel for ships and trucks, and in the power sector as the perfect partner for wind and solar power.

So this is not simply a race to renewables. It is a race to lower emissions. And for that we need to be focused on the ends - and agnostic about the very many means or fuels we will need.

It's great to see renewables grow so fast. But it is also great when gas replaces coal in power and halves the emissions. Or when a smart, high-performance hybrid car replaces a less efficient vehicle.

This is why I am encouraged to see the industry making a diverse range of low-carbon investments. It prepares us for a diverse future. That said, one common theme is natural gas: because gas clearly has a big role in the transition and can be produced with great efficiency. That is why six of our seven big start-ups last year were in gas. It's why half

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of this year's will be. And it is why other businesses also have major gas investments – Shell, ADNOC, Total, Statoil, ENI, to name a few here today.

Of course, we all recognise the importance of limiting methane emissions and are committed to monitoring for leaks and eliminating them.

In the other low-carbon technologies, we are all developing our own specialisms. In BP, we manufactured solar panels for many years, but we have now decided to focus on contributing our reach and project experience to a partnership with Lightsource. They are a UK-based business with expertise in very large-scale solar developments. The partnership has two gigawatts of capacity today and aims to triple that with projects in Europe, India, the Middle East and US.

We have another 2-gigawatt business supplying wind power from farms across the United States. Other companies have explored different routes. For example, I know that Total operates right through the solar value chain and that Statoil specialises in offshore wind.

Carbon capture, use and storage is another important technology with a range of pilot projects underway, including one we support through the Oil and Gas Climate Initiative – which is a useful forum to share our diverse experiences.

Governments are also acting in different ways to encourage the transition. Having heard from His Excellency Suhail Mohamed Faraj Al Mazrouei, this morning, let us recognise the very distinctive role that the UAE are playing, for example with the unique Masdar sustainable city initiative and the target for 30% of energy to be low-carbon by 2030.

Conclusion

So times have changed. It is a very different industry to the one many of us joined. But it is an industry that adapts. And if you asked me to say where the new business models are, I'd say they are in three places:

First, they are in working in new ways with old partners – forming closer, longer-term relationships.

Second, they are in working with new partners – such as innovative start-ups.

But third, and perhaps most important, they are in our heads. It's not so much about this or that structure. It's about recognising that our world has changed and so must we. Once we do that, a million new models can evolve.

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The Irish playwright George Bernard Shaw said: “Those who cannot change their minds cannot change anything.”

I think that’s true but let me turn it into a positive: Those who can change their minds can change everything.

If we accept change and welcome new opportunities, new technologies and new people, then I am sure this industry can change the world – and for good.

Thank you.