

INTRODUCTION

Good morning everyone, thank you for being here.

Houston was my home for seven years so it's always great to be back here.

I love this city – but I appreciate it's a tough time here right now, as it is in oil capitals around the world.

And after last month's terrible flooding, Houston must be feeling it more than most.

At BP we're having to make some very tough choices, letting many people go here in Houston. These are good people – very good people – people who have helped us through a really difficult period in our history.

But the environment we operate in has changed and it's changed quite dramatically for us all.

It's not the first time, we've been through this before. I'm sure many of us in this room have experienced oil price falls like this in our careers.

And then again, many people who are newer to the industry, have not.

In the past, we've adjusted. Reduced our costs. Tightened our belts. Some businesses didn't make it through, and some came back stronger.

But there is a question I hear being asked more and more this time around:

Is this particular price shock different to the others?

Is it lower for longer or lower for ever?

Let me be clear. At BP we don't think that it's lower for ever. The long term demand picture is strong – very strong.

But there are many moving parts – from climate change to the US shale revolution; from the real technological improvements being made in alternative sources of energy and storage, to the era of low interest rates and cheap access to debt.

How will all of this play out? Quite honestly, it's hard to tell.

But what I do know is there is one avenue that will be good for all seasons – be it a strong demand-led recovery or a more bearish outlook – and that is productivity.

Improving productivity is the best insurance we can have for whatever future you choose to believe in.

A NEW CHAPTER FOR OIL?

So what do we know about that future?

Well, we know one big thing for certain – global energy demand will continue to grow.

All the forecasts agree on that.

Our own forecast in BP says that world energy demand will most likely be about a third higher in 2035 than it is today.

That's like adding another US, EU and Japan combined.

So there's plenty of demand, and we expect more than half of it to still be met by oil and gas in 2035.

But as I said earlier – there are uncertainties. Let's look at three of them:

First is the pace at which global policy is moving on climate change.

I know this issue feels different in different places around the world. But a 195-nation agreement was reached in Paris last December. That feels like a watershed moment, and a welcome one because the world needs action on climate change.

It was a signal that there is a collective political will to move policies further and faster than before to a lower carbon future.

And not just political – we're seeing a groundswell in public and consumer opinion too.

Linked to that is a **second** significant factor, which is the increasing competitiveness of other sources of energy.

Hydrocarbons have been unchallenged on cost for a long time. But the competitiveness of alternatives is improving.

They may only represent a small part of the energy mix – but we cannot afford to ignore them.

At BP, we have a profitable wind business that now generates enough electricity to power all the homes in a city the size of Dallas.

The cost of onshore wind electricity has been cut in half since 2009.

Likewise, the cost of solar manufacturing has come down by three-quarters in a similar timeframe – and by 99% since 1976.

Battery costs are on the same downward trajectory.

The cost of lithium-ion batteries for electric vehicles is projected to fall 77% between 2010 and 2018.

Electric vehicles are scaling up quickly as they drive down costs. The Tesla Model 3 will go over 300 miles on a single charge and over 300,000 people put their money down for one in the first week after it launched earlier this year.

That brings me to the **third** – and I believe most important – factor, which is the competitiveness of oil and gas compared with other industries.

In most industries, such as manufacturing or aviation, costs come down with time.

If you look at the petrochemicals sector, for example, our manufacturing costs over time have declined consistently for feedstock chemicals like PTA. It's a downward curve – improving productivity year after year.

In oil and gas – specifically the upstream – costs tend to follow the oil price and in general have trended upwards over time.

We need to change this

And we already have an example of how to do that – here in the onshore in Texas and across the Lower 48.

The US Shale Revolution was kick-started by game-changing breakthroughs with technology. And it's a revolution that has been maintained through productivity.

The response of the onshore to lower prices has surprised everyone.

In just a few years our own BP Lower 48 business has seen a 60% reduction in the development cost of the wells we drill in the San Juan basin.

And if you look at sector production overall, since November 2014 the US onshore rig count has fallen from 1,865 to 420 – almost 80% – and yet production is pretty much the same as it was then.

The extraordinary progress made with shale and tight rock has more than doubled the amount of oil and gas we think is recoverable from known reservoirs.

This is continuous improvement in action.

We need to learn what we can from this phenomenon across the industry. We need to challenge what we're doing, and learn to adapt. We need to adopt a fundamentally different mind-set.

This combination of innovation and continuous improvement is the driving force for the future – it's how we will improve the productivity of our oil sector and put costs on a downward curve.

Those twin forces go hand in hand and I want to take a look at how they are already transforming what we do in terms of safety and productivity, as well as how we improve through more effective collaboration.

SAFETY

So as with everything we do, let's start with safety.

The tragedy in Norway on Friday where 13 people lost their lives in a helicopter incident reminds us of the perils of working in our industry. I've spoken with some of the companies involved and our thoughts and prayers are with their families and colleagues.

At BP, we learned critical lessons from the Deepwater Horizon accident, and ever since then we've been working hard to become an even safer company.

We systematically worked through every recommendation that came out of our investigation.

We have enhanced our safety procedures and changed the way the business was set up to manage risk.

We have brought in improved training, and reinforced a culture of personal responsibility for everyone in the company, from the oil platform to the boardroom.

Alongside this relentless focus on continuous improvement we've invested in advanced technology – from satellites to inspection crawlers – all of which are enabling greater information and oversight of risks in every corner of the business.

And these technologies include ways of managing many of the risks without having to stop work and shut down a plant – which has real advantages for productivity.

We're proud of the results so far – since 2010 we've seen a 73% drop in our total number of Tier 1 process safety events – that's the measure for the most serious leaks and spills.

But of course there's still more to do. You can never be satisfied with where you are right now.

In effect, you can always do better.

And we are no exception.

PRODUCTIVITY

While we will never compromise on safety – we have also been asking ourselves how we can do things better in our operations – challenging ourselves at every step.

That's an approach many manufacturing industries have been using successfully over the years in terms of their productivity.

There's a reason we still talk about Henry Ford a hundred years on from the Model T.

He worked to perfect the moving assembly line – meaning they could eventually build cars in 90 minutes instead of 12 hours.

And here's one I bet the guys down the road at NASA have been thinking about...

The Indian space agency is challenging orthodoxy in the same way. They've taken apart the process of rocket science.

And it enabled them to send a rocket to Mars for less than it cost Ridley Scott to make a blockbuster movie about sending a rocket to Mars.

Add up every small gain you make and it contributes towards a big gain overall.

Like every other company in the industry, we've started by looking at how we can simplify our operations.

It's about looking at every detail from our staff/contractor ratios, to reorganising storage, to minimising fuel consumption by our supply boats.

So far we're on course for savings of \$7 billion a year by 2017 compared to 2014.

And then there is the step-change that will come as we fully harness the potential of digital and big data.

When people talk about the disruptive power of digital, they usually have industries like the media in mind.

But I think digital and big data has the potential to be even more transformational for our industry – and I'm pleased to say we're making a start.

In the Gulf of Mexico we'll be trialling an exciting new technology later this year called Plant Operations Advisor.

It's a tool we're developing in collaboration with GE and acts like an early warning system, helping our engineers detect and deal with operating anomalies before they can turn into problems.

It does that by bringing huge volumes of real-time data together and applying predictive analytics to it.

In Azerbaijan, we've invested in digital technology which allows us to process and analyse the several terabytes of sand management data we receive a day in real time.

This enormous amount of data used to take – literally – weeks to bring to shore on hard drives, load up and analyse.

Now we're doing it in seconds, freeing up our technical staff to be able to use their time more efficiently, to make decisions using the latest data and to implement planned activity.

And it's not just about technologies in the test phase.

Well Advisor is our remote digital monitoring system which monitors BOPs, casing running, and other equipment and activities using real time data.

It has been used in more than 600 successful runs of well casing to date, saving us over \$200 million of capital expenditure in reduced non-productive time.

We need to get behind this type of innovation – because other sectors are not waiting for us to catch up

COLLABORATION

And that leads me to one final area where innovation and continuous improvement can leverage really substantial gains in safety and productivity: collaboration

It's about being open to new ideas and suggestions from our partners.

Here in the Gulf of Mexico we have been collaborating with our suppliers on costs and it has allowed us to rethink our Mad Dog Phase 2 project.

This was a \$20 billion project and we've brought it down to under \$10 billion with the expected returns improved despite a lower oil price.

And there's real value to be had if we are open to learning from and with other companies and other sectors.

In 2015 we saw the potential in training rig teams together ahead of drilling in the field.

So we gathered BP employees and contractors from our Egypt region to train in one of the most advanced drilling simulators in the world – Maersk's immersive state of the art drilling simulation facilities.

This partnership has already delivered real benefits in terms of safety and capability. It has helped our rig teams in Egypt safely complete six of the best-ever wells in the Nile Delta Basin.

A real testament to the power of collaboration.

CONCLUSION

Let me finish with a personal observation.

Outside of this industry – on the TV or in conversations – you hear people questioning the future of oil and gas.

I'm sure you've heard it too.

The real story of oil and gas doesn't seem to get the same air time – and it's a very different story.

The world needs this industry. That's the real story.

Half the world's population still live in poverty. These people deserve the same opportunities we take for granted.

And oil and gas have a big part to play in helping to change their lives.

Here's something that doesn't get mentioned all that often.

If you look at "450 scenario" for limiting temperature rise to two degrees, oil and gas would still make up 45% of the energy mix in 2040.

Gas in particular, as the cleanest and fastest growing fossil fuel, has a hugely important role.

But we can't afford to be complacent and slip back into old habits.

We can't ignore the real changes that are happening in the world. Competition is increasing. Consumer and public sentiment is shifting.

Waiting for the oil price to rise again is not sufficient – nor is short term cost cutting.

We need to be able to compete, on a global scale, with other energy and transport sectors.

It will require innovation and continuous improvement – getting a little better in everything we do, every single day.

Most importantly, we have to hold onto this even when the oil price recovers – that will be the real test.

If we do that then I strongly believe in a long, and successful future for the industry – an industry I am exceptionally proud to be a part of.

That includes a big future here in the Gulf of Mexico – one of the world's great oil basins.

And a big future for Houston – one of the world's great oil towns.

Ladies and Gentlemen, thank you for your time and for listening

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