



Confronting the new energy reality for gas

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Thank you and good morning everyone.

It's a pleasure to join the Caribbean's premier conference and a real honour to speak to you all today.

My name is Fawaz Bitar, but my friends call me Fuzzy.

I head up BP's global operations organization for our Upstream business.

My job is to look after the safe, reliable and efficient running of our oil and gas production facilities around the world.

Today we operate 48 major facilities globally and around 11,000km of pipeline.

These facilities range from LNG plants in Indonesia to giant floating platforms off the Angolan coast.

You'll also find us at work in the deep waters of the Gulf of Mexico and in the permafrost of northern Alaska.

And of course, we are here in Trinidad & Tobago – a country with a long history in oil and gas – and where BP has played a significant role over the past 50 years.

We're still busy here today. Of BP's seven new major projects brought on stream in 2017, two were here in Trinidad & Tobago.

They have helped this country's gas production rise to its highest level for two years.

The future looks bright as well.

We made two new gas discoveries here in 2017 – Savannah and Macadamia.

But what gives me the greatest confidence about the future is the people here on the ground that I've met over the last week who make all this happen.

And I know some of our young graduates are here in the audience today – Jonathan, Tsahai, Sanjeev and Vamana – can you please stand-up so we can recognize you?

Great to see you here.....!

So there is much to be optimistic about.



Today's conference theme also looks to the future, exploring how we can maximise value through collaboration.

I would like to talk briefly about four things:

- The new energy reality that our industry faces
- How this is driving a need for greater collaboration
- How we are maximising value through digital technology
- And finally, I'd like to share some thoughts on what that means for the people who work in oil and gas.

Let's start with our new energy reality...

The ability to adapt has become increasingly important in this changing global energy landscape.

The industry has embarked on a transition which will see the energy mix change over the next few decades.

The world requires more energy as the global population and economy grows.

And the challenge of climate change demands lower carbon fuels to provide that energy.

Solving this challenge is our 'dual mission'.

Part of that mission is to champion the use of renewable energy.

Yet we are not blind to the fact that over the next few decades at least, renewables alone are not the single answer to consumers thirst for energy.

Our BP Energy Outlook anticipates that oil and gas will still provide around 50% of the world's energy in 2035.

So, this isn't about a race to renewables alone; it's about a race to lower greenhouse gas emissions.

It's an important distinction, and why BP believes both gas and renewables are so important in advancing the energy transition.

Gas is accessible, abundant and produces only half the emissions of coal when burned for power.



We have been growing our gas production more than any other major oil and gas company.

45% of our upstream production is currently natural gas – and we expect to grow that share to more than 50% by the end of the decade.

We're doing this by adding eight further gas projects by 2020, including Angelin here in Trinidad & Tobago, on top of the six gas projects we brought online around the world last year.

So the long-term picture for gas is highly positive.

But there is a second new reality that our industry is grappling with right now.

The market for gas is much more globally connected through LNG and greater access to liberalised markets.

And North American shale supplies are transforming the global gas market – the world is awash with gas, with around 13,000 trillion cubic feet of gas resource discovered, which on its own is more than double the total demand anticipated to 2050.

Therefore, I believe only the most competitive producers will survive.

But there is an over-riding priority – one that comes ahead of everything else – which is safety.

Against this backdrop of lower prices, the international body for oil and gas – IOGP – has reported that for the first time in recent history, our industry's fatal accident rate has increased for two successive years in 2015 and 2016.

It's a shock to hear this. And, it's beholden on all of us in the industry to do something about it. It is about our people's lives.

And of course, safety is good business. It underpins everything else that we do.

We can reverse this trend, we've shown that in previous years.

My own view is that through greater collaboration, we can significantly improve both safety and efficiency.

This now brings me to the second theme I wanted to talk about – greater collaboration...



Some industries, such as aviation, have a head start on us – with decades of collaboration between regulators and industry stakeholders.

Their partnership has transformed aviation safety and operational performance.

2017 was the safest year on record for commercial passenger air travel¹.

And yet, the cost of travel continues to go down.

I believe that this in part is due to collaboration and the rapid and transparent sharing of safety insights and lessons in aviation.

In Trinidad, how much safety collaboration does the Energy Chamber facilitate?

IOGP now issues industry-wide safety alerts based on information provided by member companies sharing details of incidents that have led to fatalities.

We have good reason to value this collaboration.

For example, IOGP members, are almost four times less likely to be involved in a fatal helicopter accident than non-members.

Following a tragic death in another operator's plant, IOGP notified members of a design fault in a gas analyser. This allowed us and others to take rapid remedial action to remove the hazard.

We must continue to bring down barriers so that collaboration on safety is unhindered. There is no room for competition on safety.

Across the sector, we are also working collaboratively to drive efficiency.

Norman Christie gave some great examples of what is happening in terms of collaboration here in Trinidad & Tobago.

And across BP's operations, we are already in action.

In Angola, for example, we are sharing marine crew changes with another operator – ENI.

This collaboration meant increased utilisation of vessels and reduced the cost of crew changes for both Operators, saving millions of dollars every year.

Once again, we can learn from aviation in this area.



Companies are emerging in air transport employing a business model that is not that different to Uber.

It brings the prospect of optimising the demand and supply of air transport capacity for an entire region of oil and gas operators – not just the facilities of a single operator – as we have now.

This all begs the question – have we really begun to push the boundaries on what is achievable? The global scale of opportunity is immense if we are willing to think differently to the past.

This neatly brings me to my third point on how we are maximising value through digital technology...

Technology is transforming the world in which we live and work. And those who don't embrace it, will be left behind.

The speed of change is breath-taking: 90% of all the data in the world was created in just the past two years.

Stunning advances in analytics using algorithms and artificial intelligence have already begun to transform the way we work.

This is allowing us to capture a wealth of data, and translate that into insights that help us to reduce risk and improve performance.

Here in Trinidad, we are using drones for inspections at four of our offshore platforms.

This removes the need for people to erect scaffolding and work at heights, so it's safer.

Completion times are typically four times faster, making it more efficient.

It means there is no need to shut down production when inspections take place.

And the information we are getting is of higher quality.

In the North Sea, we are inspecting pipelines via lasers and cameras mounted on a fast-autonomous submarine, rather than traditional visual identification.

We inspected around 500km of pipeline in November, and the programme was completed in four days –six times faster than previous methods.

And, we saved around \$4 million in the process.



In Angola, we have replaced divers with robots to undertake the cleaning and inspection of a hull on a production vessel with the use of a magnetic crawler.

It's safer, efficient, and we estimate will provide annual savings of around \$15 million.

This is delivering significant value, and it's all available right now. Our ongoing competitiveness depends on us using this technology to its full potential today.

Now, does anybody remember the Tom Cruise film, Minority Report?

Anyway – the big idea of the movie was that the technology could predict crimes so Tom Cruise could act to stop them happening.

Imagine that? Well, we don't have to imagine it anymore in our business...

Much of the technology needed to realize the vision of the future shown in this film is available now. For example, augmented reality is being used in our Lower 48 operations in the US to improve maintenance efficiency.

Here in BP we have been developing Plant Operations Advisor in collaboration with Baker Hughes GE.

Like in the film, it aims to predict and prevent problems in our oil and gas operations and is already running on our Atlantis Field in the Gulf of Mexico.

It means reduced downtime, with problems fixed before they result in a shutdown.

This enhanced reliability means greater productivity.

Most importantly, it means greater safety.

That is why we are planning to deploy the technology across our facilities globally over the next two years.

Technology leads to greater productivity, and it's true that typically when people talk automation and digitisation, the conversation of job reductions comes up.

This is an issue facing society and it will be no different in the oil and gas industry.

This brings me to my final point... people

People will always be needed. What will be different is the types of jobs and skills required.



We must adapt and equip our people for the future so our industry survives and thrives.

It's a remarkable fact that engineers can spend up to a third of their time trawling through streams of data.

With the use of algorithms to help make sense of big data, our engineers can now focus on higher value tasks.

I don't know about you, but I'm not a natural with big data. The good news is you don't have to be. It's something you can learn and in BP we're running boot camps on data science so it becomes part of our people's capability.

I know that the University of the West Indies is a high-calibre institution. How is it preparing students for the digital revolution?

We need to value and leverage these skills to solve our biggest problems if we are to remain competitive.

Our aim is to provide the front line with new tools that make their jobs safer, more fulfilling and which enable them to deliver better quality solutions that maximise value for the business.

My time is almost up – so perhaps I might just finish on a personal note.

I know from experience when you adapt in the face of challenges then amazing things can happen.

As John Lennon once sang, "Life is what happens to you when you're busy making other plans".

Seven years ago – just when I thought my career and family life were going along nicely – I had a freak accident while on holiday. One minute I was swimming in the ocean. The next I'm lying on the beach half drowned and paralysed from the neck down.

I spent a long time in hospital and had to re-learn all the basic things we take for granted like sitting up and walking. I had to adapt to the change that life had thrust upon me.

What I learnt, is you can adapt in a crisis. But it's much better to adapt by choice than have circumstances forced upon you. We need to get ahead of the game.

I have adapted and I get a kick out of so much in life, like walking around our operations here this week –meeting our onshore and offshore teams.

You can't fail to be impressed by the spirit and professionalism of the people here – they are working together to secure a bright future for Trinidad and Tobago.



And I am excited by the people we see coming through our graduate programme.

It was US president Franklin D Roosevelt who said: “We cannot always build the future for our young people, but we can build our young people for the future.

It is this new generation that is most adaptable in the face of great change.

We look to them to inspire the sharing of ideas, minds and deeds.

Thank you for listening.

1 <https://www.reuters.com/article/us-aviation-safety/2017-safest-year-on-record-for-commercial-passenger-air-travel-groups-idUSKBN1EQ17L>