



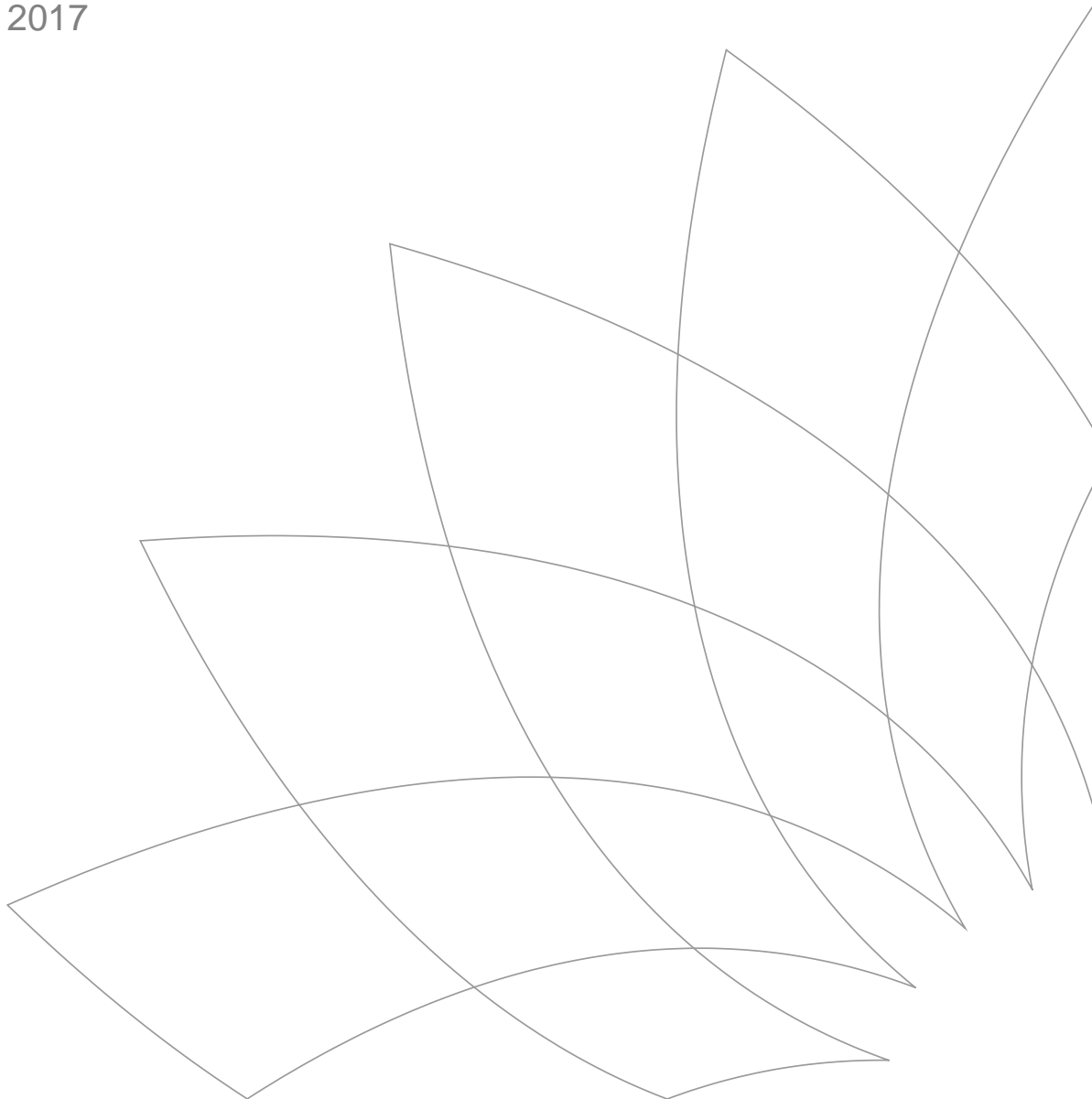
The industry's response to the Paris Declaration

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1. Introduction

Good morning everyone. Thank you for joining us today.

With 6,000 delegates from 70 different countries – including 500 CEOs and 50 ministers – we are privileged to be part of an occasion of global significance.

And it is an honour to chair this session.

The World Petroleum Congress has great quantity in numbers, but more importantly, it offers the opportunity for great quality in debate.

After Moscow in 2014, our global industry is coming together in another of the world's greatest cities.

As it has been said: "If one had but a single glance to give the world, one should gaze on Istanbul."

Today the eyes of the industry will indeed be on Istanbul as we debate this critical topic.

And it is a debate that benefits from some longer-term perspective.

I am reminded that the late Steve Jobs said that "You can't connect the dots looking forward; you can only connect them looking backwards."

And looking backwards, we can understand what has led to today's discussion.

In the last half-century, the global population has more than doubled.

Life expectancy has risen from 50 to 70.

GDP is more than 30 times what it was.

And extreme poverty has been halved.

It is an extraordinary transformation. And it is one in which energy has been vital, more than trebling in consumption since the 1960s.

So as our agenda indicates, the task before us is to mitigate the impact of climate change while preserving the benefits of energy in supporting economic development.

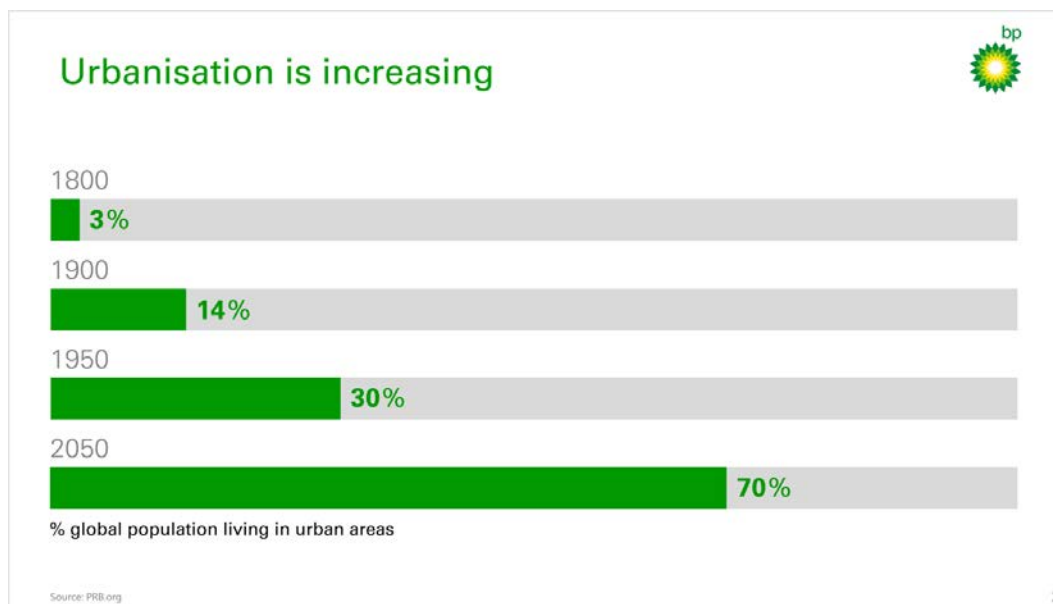
The Paris Agreement was a landmark in this regard.

The task now is to follow words with action – not least in our industry. We are all aware of that and we have plans in place, from energy efficiency to investment in low-carbon solutions.

So, let me provide a frame for our conversation by looking at the contemporary context and identifying four forces for change and four enablers of progress that can help to support the vision set out in Paris.

2. Forces for change

The first force for change is very apparent here in Istanbul - and it is the dramatic increase in urbanisation.



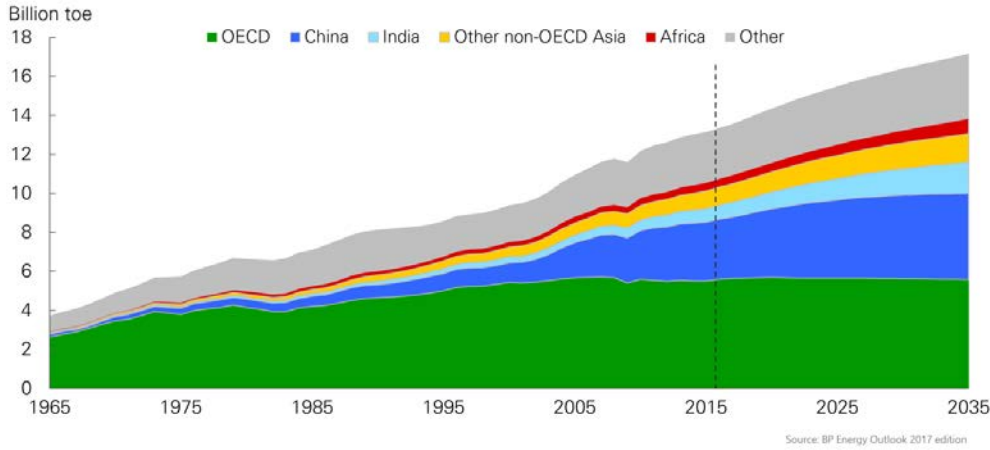
Today more than half the global population live in urban areas – compared to 30% in 1950 - and this is set to rise to 70% by 2050.

This trend has been positive for employment and living standards, while putting pressure on resources and air quality – to which I'll return.

Urbanisation is one of the major drivers of the second force for change – the continuing rise in demand for energy.

BP's Energy Outlook, and other forecasts, show that energy demand is likely to grow nearly a third by 2035.

Global energy demand is growing



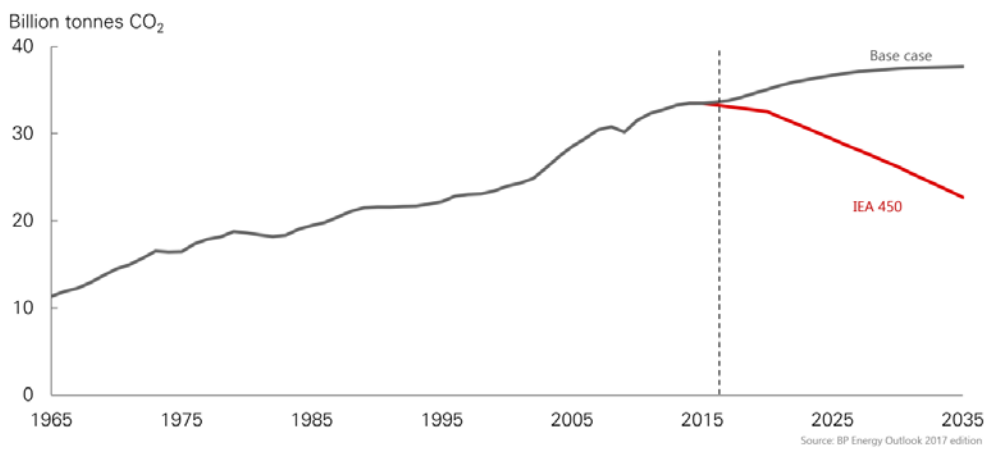
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However, as this chart shows, all but a fraction of the growth comes from non-OECD countries, most notably China and India.

The good news is that we are using energy more efficiently while we expect the world economy will double in the next 20 years, we expect energy consumption to grow by just 30%. This compares to growth of 50% in the last 20 years.

The third force for change is the continuing challenge of carbon emissions.

The carbon emissions challenge



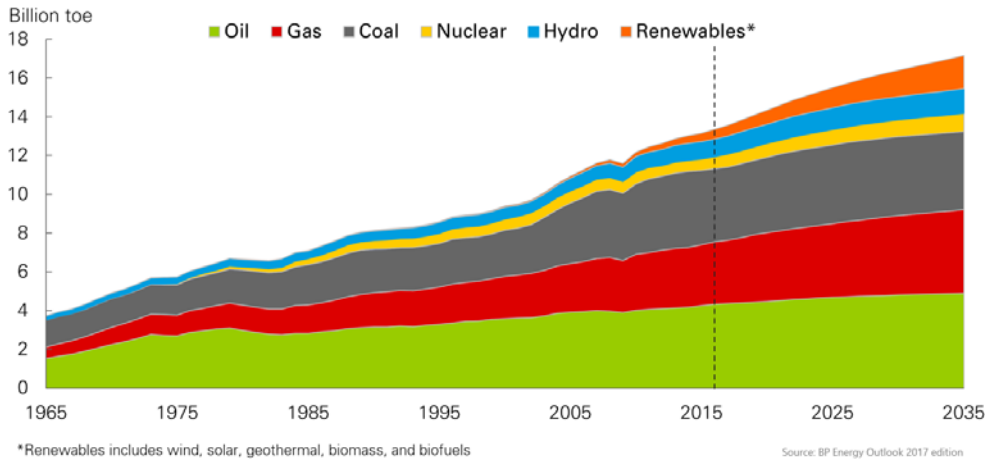
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Again, there is some positive news. BP's Statistical Review of World Energy shows that energy-related emissions have been essentially flat for the last three years, after growing around 2.5% per year in the previous decade.

However, we still have a long way to go to meet the path set out in Paris, which aims to limit the global temperature rise to 2 degrees Celsius.

My fourth force for change offers some further cause for optimism. This is the changing pattern of energy supply.

The fuel mix is changing



BP's latest Statistical Review— covering 2016 - shows that the transition to a lower carbon future is underway, with coal consumption at its lowest level since 2004, while renewables grew by 12%.

This rate of growth far exceeds oil and gas – both of which saw growth around 1.5%.

We expect the renewables revolution to continue, with annual growth of around 7% to 2035.

However, because renewables are starting from a low base, the current expectation is that their share of total primary energy will increase to only around 10% by 2035.

Of course, advances in technology and supportive policies may increase that figure.

For our part, BP's renewables interests are growing.

We have a buoyant biofuels business in Brazil and a wind business in the US with the capacity to generate electricity for about 2.5 million homes – which is enough to power Ankara more than twice over.

So, if these are some of the forces for change, what are the enablers for the progress that Paris requires?

3. Enablers

Let me again suggest four. The first is open and competitive markets.

To have competitive markets you need five factors: infrastructure, innovation, capital markets that lubricate investment, legal clarity, and of course people.

In terms of the energy industry, perhaps the most striking example is shale.

There is more shale in China, Argentina and Algeria than in the United States.

And yet it is the US that has seen the shale revolution which has helped to reduce emissions by providing abundant natural gas that has replaced coal.

Why is this? It is because the US offers a fertile combination of those potentiating factors.

To get the most out of resources beneath the ground, you need the right conditions above ground.

The second enabler is natural gas itself.

Natural gas is a vital lower carbon energy source. It is abundant and affordable.

As it produces only half of the carbon of coal when burned for power, it offers a means to lower emissions quickly while renewables achieve scale – as well as a source of back-up baseload power to address the intermittency of renewables.

It has been calculated that if all coal-fired power stations were switched to state-of-the-art gas-fired plants, we could avoid around 10% of total energy-related greenhouse gas emissions.

In BP, we are increasing the share of gas in our production portfolio. Of the seven major projects that we are bringing on-stream this year, six will produce gas, including two due imminently – Juniper in Trinidad and Tobago and Persephone in Australia.

We are also continuing to build the Southern Gas Corridor that will bring gas from the Caspian Sea to Europe for the first time.

Turkey is to play a pivotal role, as the location for nearly 2,000 kilometres of the pipeline system and as a customer for the gas.



Gas consumption has increased more than five-fold over 20 years in Turkey and, among other things, that has helped improve air quality.

Most of Istanbul is now heated by natural gas, replacing oil and coal. This has cut particulates by half, and sulphur dioxide emissions by 90%.

More widely, for gas to fully play its role, it is important to minimise methane emissions in the production process. That is why the Oil and Gas Climate Initiative, set up by the industry to help tackle climate change, has made reducing such emissions a priority in its billion-dollar programme of investment in low emission technologies.

That takes me to the third enabler, which is technology and innovation.

It has been said that a fourth Industrial Revolution is taking shape - a fusion of the revolutions that were characterised by steam, electricity and digitisation.

The Founder of the World Economic Forum, Professor Klaus Schwab, says it is 'characterized by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries, and even challenging ideas about what it means to be human.'

In our own industry, innovation is a game-changer. We have seen remarkable falls in the costs of renewable technology. We have seen technology help to drive the shale revolution. And digital technology is now helping us use energy more efficiently in oil and gas production, with super-fast processing, data lakes, real-time feeds and predictive software to maximise production and minimise downtime.

My final enabler is policy.

We saw real momentum in Paris but more action is needed in terms of policy encouragement for emissions reduction.

For a long time, BP has advocated carbon pricing, which brings the power of the market into emissions reduction, making energy efficiency more attractive and lower carbon energy sources more competitive.

We are now helping to advance this aim through our membership of the new US-based Climate Leadership Council.

I will conclude with this challenge to anyone who thinks this issue is insoluble. In the US, CO₂ emissions from energy have fallen 11% in a decade. In Europe, they have fallen 25% since 1979. In Sweden, they have halved since 1970.

So, it is possible to both meet energy demand and address climate change.