

# Is natural gas the key energy for a low carbon future?

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## Opening remarks

Good morning / afternoon everyone. I am very grateful for the invitation to join you and I am very much looking forward to this event.

It is important for BP to understand and participate in the energy debate in Germany because of our participation in the economy here. Germany is our second largest market for fuels worldwide through our Aral business with its 2,500 service stations. And we have more than 5,000 staff here, the largest national BP team after the US and the UK.

We also admire the resolve with which successive German governments have sought to take a progressive leadership position on energy and the environment.

It is good to share this platform with Ralf, Tomas, Manuel and Astrid. I don't think we will agree on everything. But I know we share a common determination to see a sustainable energy future.

As Herbert Hoover said, "Honest difference of views and honest debate are not disunity. They are the vital process of policy among free men."

The dilemma we are all trying to grapple with from our different starting points is how to meet the world's increasing demand for energy whilst reducing the greenhouse gas emissions which can lead to climate change

In BP we take this entire issue very seriously. In fact, we were among the first in our industry to acknowledge the link between man-made emissions and global climate change.

We also recognise the widely-held consensus on the objective of limiting global temperature rise to within 2 degrees above pre-industrial levels.

In June this year BP was among 6 European oil and gas companies writing to the UNFCCC to advocate carbon pricing as the most efficient and effective way to drive the necessary changes in the world's energy mix.

Governments must play an important role as the architects of a lower carbon economy. But within BP, as we think about the dilemma, we see five ways in which companies like BP can play a role:

- First by supporting and encouraging further government action – which in BP we believe should focus on setting a price for carbon emissions

- Second by enabling natural gas to provide a cleaner alternative to coal
- Third by running renewable or alternative energy businesses
- Fourth, by improving the efficiency of our own operations and the products that we make
- And fifth by supporting research to build greater understanding of the science and potential solutions.

Today, given our theme, I would like to focus particularly on the importance of gas in a lower carbon future.

To put this in context, broadly speaking, in the 18th century, wood remained the dominant fuel in much of the world. The 19th century saw the age of coal. The 20th century was, of course, the age of oil. And I believe the 21st century will be seen in many ways as the age of gas.

Gas is the fastest growing fossil fuel and over the next 20 years we expect it to catch up with oil and coal and emerge as the main hydrocarbon component of a more sustainable energy mix. Gas is important for three major reasons.

First, the abundance of gas resources will help to ensure that there is sufficient energy to meet the world's growing needs.

Second, the world wants energy security, and gas can help with that too.

And third, the world needs its energy to be sustainable, and gas has a unique role to play in that regard.

I will expand a little on each of those three points

## Sufficiency

Starting with sufficiency, the challenge is that the world's energy demand is projected to grow by around 35% by 2035 according to BP's Energy Outlook 2035, which is based on current and expected trends in demand, supply, policy and technology.

Almost all the growth – about 95% – an extra four billion tonnes of oil equivalent - comes from non-OECD countries, led by China and India.

Such numbers are hard to visualise. But I always think about what they mean for individuals and communities. Electricity coming to a village. People riding scooters to work. Power and light for clinics and schools. Irrigation for farmers. Access to computers, to hot water, to refrigeration.

The conversation here in Europe is very different to that in my home country of India where around 400 million people – equal to four-fifths of the EU population - still have no access to electricity. Globally the number is over one billion.

It highlights the fact that there is urgency in meeting demand as well as curbing emissions. We cannot shirk the latter, but neither can we ignore the former.

Gas has an important role to play in both respects. And fortunately, there is more than enough gas to meet demand.

We calculate today's proved reserves are sufficient for over 50 years of use at today's rates. And when you consider that China, Algeria and Argentina are all believed to have more shale resources than America, there is no 'peak gas' issue to contend with.

## Security

The next challenge is that of energy security – connecting the energy with the people who need it.

Gas has an increasing part to play here as countries are able to access more sources of supply – and develop more of their own.

This is particularly important here in Europe. The EU consumes around 13% of the world's gas, yet it only has less than 1% of the reserves.

This creates two issues. The first is long-standing import dependency - Europe is the largest energy importer in the world.

The second is a more recent disposition to imported coal that runs counter to environmental objectives. With gas in relatively short supply, cheap coal displaced from the US - by even cheaper gas - is finding a ready market in Europe.

These are the drivers behind the EU's plans for an 'Energy Union' – to reduce dependency on imports, diversify supplies and renew its commitment to lower carbon energy.

The European Union is committed to the development of single markets. So it is only right to complete the single market in gas, with new interconnector pipelines linking countries together and driving greater competition.

And it is right to continue to develop the EU Emissions Trading System into a truly effective mechanism for lowering emissions.

There is also a place for new pipeline supplies. For example, one of the biggest and most complex gas projects currently underway anywhere in the world is the new 3,500km Southern Corridor between the Shah Deniz gas field in the Caspian and southern Europe

It is a completely new route for gas into Europe, being led by BP, which is on schedule to start delivering up to 16bcm gas a year by 2018 through Georgia, Turkey, Greece, Bulgaria, Albania and Italy.

## Sustainability

Let me now turn to the third of the three S's, sustainability.

This is sometimes seen as incompatible with security and sufficiency – but that's not the case and gas is one of the main reasons why.

It is certainly true that the current path of carbon emissions is not in line with keeping the rise in global temperatures to the two degree level recommended by the experts.

But, with political will and collective action, that trajectory can be changed. And there are two main ways to do it. The first is to use energy more efficiently and the second is to use more lower carbon energy. Put simply, saving and switching.

And critically, switching does not only mean switching from fossil fuels to non-fossil fuels – but from coal to gas.

Gas is by far the cleanest fossil fuel. When burned to generate power gas emits half the carbon dioxide compared with coal.

Because of the relative scale of coal versus renewables in today's power industry, if we were to switch just 1% of total power generation from coal-fired power plants to gas-fired ones, that would cut emissions as much as increasing renewable energy by 11%. And generally those cuts will come at a lower cost.

But, to be clear, we are not arguing for any special favours for gas.



What we are recommending is simply a price on carbon, however it is emitted. This will then enable many solutions to play a part.

It will encourage more energy efficiency. It will enable renewables to be more competitive. It will improve the economics of carbon capture and storage. And in many circumstances, it will lead to the substitution of gas for coal. In short, it will incentivise the most effective and efficient solutions in each situation.

I want to emphasise that a sustainable future need not be a future without fossil fuels. Even under the International Energy Agency's most ambitious scenario - the 450 scenario – associated with reaching the 2 degree target -, oil and gas would still make up 49% of the energy mix in 2030 and 43% in 2040. And gas has the largest share of any fuel in that scenario

## Conclusion

To conclude very briefly, the message I have tried to put over is a very simple one.

Gas provides sufficient energy – there are many decades' worth of reserves.

Gas provides secure energy – whether domestic or imported, through pipelines or LNG.

And gas provides sustainable energy – it has a huge role to play in a lower carbon world.

We ask those who are meeting in Paris in two months' time to be mindful of that - and of our industry's desire to be part of the debate - part of the solution - and part of the future.

A final thought. We face a fork in the road. There are three routes to choose from in terms of frameworks, investment and solutions.

The first is business as usual. That is unacceptable. It will create an intolerable environmental impact on our world.

The second is a beautiful scenic route, straddled by wind turbines and solar panels. It represents the dream of replacing today's carbon-based energy system with a fully renewable one. The problem with that road is that it is a dead end – because the world simply cannot afford to go as far as it needs to - as fast as it needs to - using zero-carbon energy alone.

The third route is less glamorous and features combined cycle gas turbines and internal combustion engines as well as the wind farms and solar panels. In other words it's a



changing energy mix facilitated by a widespread price for carbon. And this route can get us to a more sustainable future, affordably, if we are prepared to support it.

We do no service to future generations by choosing the less realistic option. It may appear to satisfy some of today's concerns – but we need to serve the citizens of tomorrow. We must therefore be pragmatic and take the manageable and achievable route to the lower-carbon future we all wish to see.

Thank you.