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Keynote speech

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“India’s energy dilemma – policy, technology, partnerships and the way forward”

Ladies and gentlemen

Thank you for the opportunity to participate in this dialogue.

It is a great honour, as a representative of BP - and as a native of Delhi.

For me, this is a chance to come home and to reflect on the extraordinary journey of growth that India has undertaken.

When I was growing up here in the 1970s, the population of Delhi was about 4 million with about 100,000 cars on the roads.

Today, Delhi’s population is over 17 million, with over one-and-a-half million cars on the roads.

Such rapid growth creates challenges, but also solutions. Some are perhaps straightforward, such as the conversion of vehicles to compressed natural gas which has reduced levels of sulphur dioxide.

Other solutions are more profound, such as the tripling of India’s power generation in just a decade, bringing millions out of energy poverty into economic prosperity.

So although today we are going to look at India’s energy dilemma, let us also acknowledge there is such a thing as India’s energy achievement.

And in connection with India’s achievements, let me pay tribute to the work of Dr Pachauri who has done so much to advance understanding of energy issues – both in his decade of leadership of the Intergovernmental Panel on Climate Change and his many years with TERI.

TERI is a globally influential organisation with outreach in over 30 countries, a respected university and with a track record of developing practical and entrepreneurial solutions to complex problems.

Today, we are here to debate a complex problem – and a very relevant one – namely India’s energy dilemma.

In my brief remarks, I will begin by defining the global energy dilemma of which India is a part.

I will then look specifically at how this dilemma manifests itself in India.

And I will conclude by offering four principles by which this dilemma can be addressed.

1) Defining the dilemma - Globally

First then, what is the dilemma? It is sometimes referred to as a ‘tri-lemma’ because it comprises three questions.

- Is there enough energy to meet global demand affordably?
- Does each country know where its supplies will come from?
- And finally, can supplies be delivered without unacceptable impact on the planet’s ecosystem?

Or to put it succinctly, can energy be sufficient, secure and sustainable?

That is the dilemma for every nation, including India.

In terms of sufficiency, we expect demand for energy to grow by 1.5% per annum or 41% in total between 2012 and 2035 – with 95% of that growth in the non-OECD countries, led by India and China.

We believe there are sufficient resources available to meet this demand.

There are already more than 50 years’ worth of proved reserves of both oil and gas at today’s consumption rates, in addition to renewables and other non-fossil fuels.

However, 80% of the oil reserves and 75% of the gas lie in just 8 countries and so security remains a concern for many countries.

Gas is set to grow the fastest of all fossil fuels at around 1.9% for the next 20 years.

Coal is expected to grow at 1.1% on average, and oil at around 0.8%.

And looking to the issue of sustainability, CO2 emissions are expected to rise by around 30% between 2012 and 2035 – which is of course faster than we would wish, though slower than the rate of demand growth.

This is simply our projection and not our proposition.

2) Defining the dilemma – In India

Turning to India, here we see the global dilemma at its most intense. Put simply, India magnifies everything.

More babies are born in India than anywhere else – 74,000 every day.

India's energy consumption is rising faster than any other nation – by 130% by 2035.

And India's carbon emissions are set for the biggest rise of any nation – by 120% by 2035.

Two other trends, unless addressed, are set to compound the security and sustainability aspects of India's dilemma.

First, imports.

Over the next two decades, rising demand will require an increase of 163% in imported energy, putting further pressure on the current account and trade deficits.

Second, the dominance of coal.

Compare India with China. In China, annual growth in demand for coal is projected to fall from 6% today to 0.1% by 2035. In India though, coal demand is forecast to grow by 3% or more per annum, driving up emissions. After 2025, India is expected to replace China as the world's top source of coal demand growth.

With issues of this scale converging in India and potential solutions at hand, we should all feel – as Martin Luther King put it all too well – the “fierce urgency of now.”

3) Principles for progress

The Indian energy dilemma is perhaps one of the most difficult long term challenges faced by policy-makers anywhere in the world.

There are no easy answers.

But the pragmatic approach is to look at the experiences of other countries and see what principles we can draw from them.

We know, for example, that in the US there has been a transformation of the energy landscape as a result of the development of shale gas and oil. All made possible by 'above ground' conditions, such as policies that support investment, technological advances, and partnerships.

The shale revolution has sharply reduced imports and led to gas replacing coal in power generation with the result that emissions in the United States are back to pre-1995 levels.

In the UK, the North Sea is undergoing a revival as a result of government incentives to invest in mature fields.

In Oman, BP is about to start a massive project of tight gas production after using technology developed in the US.

The common factors are those in the title of this session – policy, technology and partnerships.

Policy initiatives – chiefly the support of competitive markets - have stimulated businesses to develop and apply technologies and work in partnerships to deliver energy.

Another common factor is natural gas.

Natural gas can provide sufficiency through new supplies; security through domestic production or diverse supply chains; and sustainability – because gas emits around half as much carbon as coal when burned for power generation, where all fuels compete.

Given the scale of coal use in electricity generation, replacing just one per cent of coal used in power plants with gas would reduce CO2 emissions by as much as an 11 per cent growth in renewables.

And the prospect for domestic gas in India is good.

India is rich in gas resources – 50 trillion cubic feet of proved reserves with almost twice as much in what we call the 'yet-to-find' category.

And the yet-to-find resource could help India avoid imports of \$1 trillion.

I see four areas in which policy-makers might take action to stimulate the technology and partnerships required.

3.1) Creating above ground conditions

The first is to create the right 'above ground' conditions.

By this I mean creating the right policy frameworks to incentivise competition and investment. This can embrace everything from regulatory frameworks to public-private partnerships.

This is one of the greatest lessons from the US shale revolution.

3.2 Enabling price signals

The second area for action is to enable the right price signals to prevail.

The recent gas price notification is a welcome step. But the further the country can move towards free market pricing, the more it can increase domestic supply, reduce imports and improve the trade imbalance.

3.3) Providing a means to an end

The third area for action is to create a means to an end – to focus on the journey as well as the destination.

Renewables may well be a large part of the answer in the long term – and they can meet specific needs today – I am mindful of TERI's great work with solar power in rural areas. But in the short to medium term, the best way to bring emissions down at scale is to bring up the proportion of gas in the energy mix and bring down energy intensity. In other words, the amount of energy needed to generate one unit of GDP.

3.4) Building supply chains

The fourth area is to support the market in stimulating the creation of supply chains that provide the capability and expertise to deliver energy.

In many countries, the US and UK included, investment in domestic energy has led to service industries being created. In others, such as Trinidad and Azerbaijan, local fabrication industries have emerged.

As I conclude, let me add that BP has a long history in India, spanning over 100 years with our Castrol lubricants brand. We have a number of people in the group – around 5,000 – working in India supporting our global, technology and financial operations. And more recently we have been very pleased to have the opportunity to participate more directly in India's energy future.

We have invested some \$7 billion to find, produce and deliver natural gas with our partners in Reliance – an end-to-end supply chain. Last year, two of BP's seven exploration discoveries were discoveries of gas in India, in the KG-D6 and Cauvery basins.

We have been encouraged by policy-makers. We are bringing in our technology and working in partnership with Reliance, with the Government and with the Indian people.

And partnership – I believe – is the most important ingredient for progress.

As Charles Darwin said: "In the long history of humankind, those who learned to collaborate most effectively have prevailed."

And as someone who knows Delhi and knows India, I am in no doubt that the necessary collaboration will take place to resolve India's energy dilemma through policy, technology, and most importantly, through partnership.

Ladies and gentlemen, thank you very much.