



Perspectives on the challenges facing super-majors

Speaker: **Dev Sanyal**

Title: **group chief of staff and executive vice president, BP**

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This seminar is a great forum for the exchange of ideas and the enrichment of knowledge. I pay tribute to Nader and the team for building this unique institution.

I know that many people in BP have benefitted from their experiences here.

This particular session is on perspectives on the challenges facing super-majors.

I will divide my remarks on this subject into three sections:

- First, I will identify - briefly - the relevant challenges and opportunities facing the global energy community, including super-majors, NOCs, service companies and policy-makers.
- Second, I will focus on specific challenges facing super-majors and explain how we in BP believe those challenges should be addressed.
- And third, I will set out how BP itself is putting that thinking into practice.

Although the starting point is that of challenges, my message is one of optimism. Let me begin with two items of good news.

First, you will be aware of the Millennium Development Goals, agreed by world leaders in 2000 as targets for 2015. The first of these goals was to halve the number of people living on less than a dollar a day from roughly two billion to one billion. And it looks like that goal has been achieved three years ahead of schedule.

I would not claim that our industry has been solely responsible for this advance. However, it is certainly a factor. Energy brings heat, light and mobility - it brings refrigeration for medicines, infrastructure for schools and hospitals, the means to irrigate farmland or to travel to work.

Let me share another piece of good news. (You can see I want you to leave Oxford in good spirits!) In 1981, the world's oil reserves stood at 700 billion barrels.

By last year, this had risen to 1,650 billion barrels.

And that is despite the fact that in the intervening three decades the world consumed around 800 billion barrels. This is testimony to the way in which the industry has sought, found and produced new resources through its capacity to innovate, develop and deploy technology.

Therefore, as we come to look at challenges, we need to be mindful that our industry has been a driver of innovation and progress and we should approach the future with confidence.



1. The state of the industry - challenges and opportunities

Turning to challenges and opportunities for energy globally, BP's projections envisage a future in which global GDP is expected to double to over \$150 trillion. By 2030; and energy demand is expected to rise by 40% - to 16.6 billion tonnes of oil equivalent per year with over 95% of that increased demand coming from non-OECD countries, led by China and India.

That figure of 40% is our best estimate, based on likely trends in demand, supply, policy and technology. This will also mean an increase of over 25% in greenhouse gas emissions.

What challenges emerge as a result of these figures?

First, the challenge of supply. Finding and producing reserves at scale over a sustained period. This requires major projects which integrate financial resources, leading technology, advanced engineering skills and commercial acumen.

Second, the challenge of demand . the challenge of matching supply to shifting patterns of demand. For example, demand for oil in the US peaked in 2005 at around 21 million barrels per day and by last year it had fallen to around 19 million. But in China, oil demand has risen over the same period from around 7 million to 10 million barrels per day.

Third, the challenge of risk. These endeavours will take the industry to a new series of frontiers, whether ever deeper reservoirs or ever more sensitive ecosystems. Our regimes of risk management must be commensurate with that challenge.

Fourth, the challenge of the environment. We must find ways to supply energy on the scale required without depleting other resources, such as water and minerals and while curbing greenhouse gas emissions.

The good news in this respect is that demand for energy is only expected to rise at less than half the rate of GDP. This shows that economies are becoming less energy intensive. Also carbon emissions are not expected to grow as fast as energy consumption demonstrating that energy is becoming less carbon intensive.

Both of these trends can potentially be accelerated. Greater energy efficiency can further reduce energy intensity; while switching to lower-carbon forms of energy can further reduce carbon intensity.

These are significant challenges. But as I said, we are developing powerful ways to address them.

To take a just a few examples, the shale revolution means the US has had the fastest growth in oil production outside OPEC for three years running. Its gas reserves are now nearly double the level of 20 years ago. China is now following up with rapid investment in its own shale exploration zones.

In the deepwater, we are finding hydrocarbons in the Paleogene geological layer and there is a major drive to develop the equipment to produce safely and efficiently at unprecedented pressures and temperatures.

Meanwhile, new technology is transforming old fields. Enhanced oil recovery techniques are defying the old assumption that most of a reservoir's oil would never be extracted.

Looking to the efficiency challenge, China is demonstrating what can be achieved in reducing energy intensity. The amount of energy required to generate one million dollars in China has fallen from over 350 tonnes of oil equivalent in 1980 to under 200 today.

In terms of switching to lower carbon energy, we expect the growth of gas to outpace coal over the next 20 years and non-fossil energy. renewables, nuclear and hydro - is set to grow faster than any single fossil fuel in the next 20 years, although from a low base.



2. Challenges for super-majors

Let me now turn to the super-majors. The term "super-major" was coined to describe the global international oil companies that emerged from the mergers of the 1990s.

The conventional wisdom has been that those companies are, by definition, integrated enterprises - operating in every part of the supply chain - working oilfields from discovery to depletion, running refining and marketing operations across major consumer markets and delivering a range of lubricants and petrochemicals.

Operating with this scope and reach conferred several benefits. The financial and technical resources to operate giant projects; the diversity of businesses to cope with volatile markets; and the profile to build global brands.

With global reach came the ability to replicate successful projects again and again around the world.

However, we now inhabit a rapidly changing world where old certainties no longer apply. The challenges are becoming more intense and NOCs have also developed deeper capability, from Saudi Aramco's expertise in enhanced oil recovery to Petrobras's deepwater know-how to PetroChina's engineering experience. Many NOCs are now operating beyond their home countries and developing new skill-sets.

So I believe the role of the super-major is changing. Scope and reach are no longer the advantages they once were. Having a range of specialisms, however, is becoming critical.

The super-major of the past was essentially defined by the scale of its operations. I believe the super-major of the future will be defined by the quality of its operations.

- It will be a company that operates safely and responsibly in a range of environments.
- It will be a company that develops ever deeper capability across a carefully selected range of specialisms.
- It will be a company that creates ever more advanced technology.
- It will be a company that drives enhanced value and growth for its investors.
- And along with these characteristics, it will be a company that works in new ways with NOCs and governments.

To expand a little on that last point, as you well know, major resource holders are increasingly forming new types of partnerships with international oil companies and service providers who can help unlock new resources or recover more hydrocarbons from mature fields.

The way I see the evolution of the industry is that in chapter one, the IOCs dominated reserves and production.

In chapter two, the dominance switched to the NOCs who now control most of the world's oil and gas. Many NOCs have also developed very significant capabilities.

But chapter three is now underway. It is ushering in a new era of co-operation as IOCs are working in new kinds of partnerships with governments and NOCs, deploying distinctive capabilities which complement those of their partners.

3. BP's approach

Therefore, how is BP adapting to this changing landscape?

We relish the challenges of this new era, but we also respect our heritage. BP was a major player in the Middle East until the wave of nationalisations in the 20th century. We were obliged to expand our



skills at the frontiers of the industry, in the deepwaters and giant fields of the North Sea and the Gulf of Mexico, as well as the Arctic conditions of Alaska.

Out of that adversity came today's BP, a company with strong specialisms, from the seismic technology that enabled us to make dramatic deepwater discoveries in the Gulf of Mexico to the enhanced oil recovery that prolongs the life of giant fields and the creation of integrated end-to-end gas supply chains.

We experienced a defining event two years ago with the Deepwater Horizon accident in the Gulf of Mexico. We deeply regret this incident and the tragic loss of life.

From the outset, we committed to learn from the accident and share the lessons. We conducted an internal investigation and made the results public. We are implementing its recommendations, and we are sharing lessons learned with industry and regulators around the world. This is all part of our continuous effort to further enhance safety and risk management throughout our global operations and indeed across the industry.

The fundamental question we asked ourselves was this: In a rapidly changing industry context, how can we continue to develop a business that delivers and grows value in a safe and sustainable way over many years?

In short, we believe the answer is to play to our specialist strengths. This means investing in quality: a high quality portfolio; high quality standards of risk management; and high quality capability.

A super-major can't be super at everything. But it can be excellent in what it chooses to do and the choices are critical.

Therefore, what you are seeing at BP today is on the one hand divestment of assets that are non-strategic to us; and on the other hand investment in the assets and capabilities that represent our greatest strengths.

We are delivering value as we go along. But while today we are a company in transition, our intention is that tomorrow, our business will reflect a company transformed.

We have defined our key strengths as exploration, deepwater, giant fields, gas supply chains, a world-class downstream, technology and relationships. These are all areas of capability that we have built up over many decades.

When I consider what we are trying to achieve in these areas, I am reminded of the Olympic and Paralympic athletes whom we have recently seen in action. In BP we were privileged to be an official partner of the London games and we supported over 60 athletes from around the world, including gold medallists such as Jessica Ennis, Richard Whitehead and Rebecca Soni.

We were fortunate to meet many of them personally and they provided inspiring role models. For all of them the goal was not only to win but to be the very best they could be to take their strengths and work on them. They reminded us that the competitive edge required to be a split second faster than a rival only comes about as a result of years of discipline, commitment and training.

There is a strong parallel here with our beliefs about our business. We believe that we will prosper by investing in a similar way in our distinctive strengths, taking them to the highest possible level and giving us the competitive edge we need to play a significant part in the next stage of the industry's journey.

For example, we have a proven record in exploration. This has been recognised in the last three years with the granting of somewhere around 100 leases covering 370,000 square kilometres - the



area of Germany. We are increasing our investment in exploration, including a powerful new supercomputing centre in Houston to process our seismic data.

Many of our new leases are in deepwater and we have already found oil in the Paleogene. Accordingly, we are investing in a programme called 20k to develop the technology to explore and produce safely at pressures beyond 20,000 psi.

We are extending the life of giant fields in places like Alaska and Iraq through our expertise in enhanced oil recovery. Just recently we announced the first large scale deployment of our new water-flooding technique - LoSal - using low salinity water. We will deploy that technology at the Clair Ridge project in the North Sea, expected on-stream in 2016.

Prior to that, we have a pipeline of new upstream projects planned for start-up by the end of 2014. Again the watchword is quality, with those projects having margins expected to be materially higher than today's average.

We are building gas supply chains such as the one that transports LNG from Indonesia to China or the one we are building in India with Reliance Industries, both providing a cleaner alternative to coal.

In the downstream, we are repositioning our refining network to address the shift in global demand I referred to earlier, divesting non-strategic assets and investing in others, particularly our Whiting refinery in the US Mid-West. In lubricants and petrochemicals, we again specialise - in premium lubricants and in our world-class proprietary technologies for three chemical products - acetic acid, PTA and paraxylene.

Safety and risk management is different in that it is an area where we hope that the whole industry will move forward together. However, with the experience of 2010 in mind we will do what we believe to be right, even if it goes beyond the current regulatory requirements.

For example, we have stipulated that a floating rig operating for BP in deepwater must use a blow-out preventer equipped with two sets of blind shear rams. We were pleased that the Brazilian regulator called us one of the best prepared companies to operate in deepwater.

That takes me to our relationships with governments and NOCs - and the fact that these are increasingly tailored to specific circumstances. For example, in Iraq, we are not only working with an Iraqi NOCs workforce, but also with PetroChina who are providing engineering resources to complement our project management and technology.

In each case we ask ourselves: What does partnership entail in this situation? Who can we work with? What management skills can we contribute? What technologies can we offer? What training and development can we bring to local staff? What can we do as a global company to support the local economy and community? All of these can be relevant in different ways according to local circumstances.

The future "super-major"

To conclude, let me summarise my key messages.

The future poses several challenges, related to supply, demand, risk and the environment. But it also offers many opportunities, from deepwater production to unconventional oil and gas to new markets.

Unlike the super-majors of the past, defined by scale, the super-major of the future will be defined by specialist capability and the capacity to form new types of relationships. In BP we have embarked on a journey that will see us divest non-strategic assets while we invest in our strengths.



We believe they will enable us to make a continuing and distinctive contribution to the global energy industry as it works to address the challenges that lie ahead of us.

As JFK put it 50 years ago, to govern is to choose.

And in BP, we have made our choices.

Ladies and gentlemen, thank you for listening and I now look forward to hearing your perspectives.