

# Meeting rising demand and offsetting production decline



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## **We have seen a recovery in oil and gas investment which seems to reflect confidence in the buoyancy of the long term oil price and of oil demand - is this confidence justified?**

We expect global upstream oil and gas investment to continue to grow strongly in 2011, hitting a new record of over US\$550 billion. Moving forward we will continue to need a substantial amount of investment in the oil and gas industry. There are two major drivers of this. One of them is significant growth in oil demand which in our new World Energy Outlook (WEO) for 2011 we project to rise from 87 million barrels a day (mb/d) in 2010 to 99 mb/d in 2035. Almost all of this new demand will come from the transport sector in emerging economies, as economic growth pushes up demand for personal mobility and freight. The total number of passenger cars is set to more than double to almost 1.7 billion in 2035. No doubt, alternative vehicle technologies will emerge that use oil much more efficiently or not at all, but it will take time for them to become commercially viable and penetrate markets. But, as important as investment to meet rising demand, we need a lot of investment just to compensate for the decline in production from existing fields as they mature. One of the major findings of our WEO is that between now and 2035 we will need gross capacity additions of 47 mb/d, to compensate for declining production at existing fields, twice the current total oil production of all OPEC countries in the Middle East.

## **Can the world achieve this?**

I believe that oil prices will remain at levels sufficient to make most of these new projects that we expect to be developed profitable. Even at the end of 2008, when as a result of the financial crisis and the oil price was going down to US\$40, I said the era of cheap oil was over. Today when the world economy is in a very shaky state, we still have the price of oil at around US\$100/bbl for Brent. So from a project financing viewpoint, there will be enough incentive for those projects to be developed. However, I also see some challenges. One is whether the key producing countries will make, or can make the investments in a timely and adequate manner. According to our latest WEO, close to 90 per cent of the growth in global oil production over the next two decades will need to come from Middle East and North African (MENA) countries. In terms of physical resources, this does not represent a major challenge, theoretically. However, investments in

these countries might be deferred. This could have far-reaching consequences for global energy markets. Such a shortfall could result from a variety of factors, including higher perceived investment risks, deliberate government policies to develop production capacity more slowly or constraints on upstream domestic capital flows because priority is given to spending on other public programmes.

## **What happens if Middle East and North African countries cannot deliver all this?**

We have made a special investigation in our latest WEO around our projection that MENA countries need upstream investments of US\$100bn a year over the next decade. We asked what would happen if this investment were one third lower? The results show that MENA production would be more than 6 mb/d lower by 2020 and we could face a substantial near-term rise in the oil price to US\$150/barrel (in year-2010 dollars). This would not be good news for the global economy. Therefore it is in the interest of everyone that the investment in the key producing countries takes place in a timely manner. There is a significant responsibility here on the oil producers, but of course I also see they will face certain hurdles. Therefore it is very important that consumer countries should help – by for instance narrowing down the uncertainties on the oil markets – the producing countries to have the best possible investment framework to get the oil to the market.

## **What about production prospects elsewhere?**

One of the trends we have highlighted in our latest WEO is the increase in US oil output. As a result of two major developments in the US we see a trend that is very different to most other countries in the OECD. With the recent efficiency measures taken by the Obama administration in the transportation sector, we expect a slowdown in US oil demand growth. This greater efficiency, together with the increase in new supplies, leads us to expect a substantial reduction in US oil imports in the decades ahead. One of the promising new sources of production in the US is light tight oil which we think may actually become a second American "revolution", the first one being in shale gas. Light tight oil provides a great example of how the industry continues to innovate, developing new techniques and technologies to tap previously uneconomic resources. High oil prices would give very strong incentives to the further development of light tight oil in the US and may also result in production taking off in other plays or in other



parts of the world. This could have implications for the major oil producing countries by eating into their market share. I mention this to make the point that it is not always in the interest of the major oil producing countries to have very high oil prices.

### **The IEA recently published a report called “Are we entering a golden age of gas?” Why the question-mark?**

It is true that there is much less uncertainty over the outlook for natural gas than there is for other fossil fuels. Factors both on the supply and demand sides point to a bright future, even a golden age, for natural gas. Gas consumption rises in all three scenarios presented in our new WEO, underlining how gas does well under a wide range of future policy directions. We now have gas reserves equal to around 120 years of current production; but adding unconventional recoverable resources brings this figure to nearly 250 years. And unlike oil, gas is widely dispersed around the world. You have the US and Canada, and of course the Middle East, North African and Russia, but China and Australia are also coming along very strongly. Based on currently operating and sanctioned projects, Australian LNG export capacity could exceed 70 bcm soon after 2015, making it the second largest global LNG exporter after Qatar.

But in terms of unconventional gas production, there are significant local environmental problems, due to the technology used, and this has raised a lot of questions in Europe and in the US which are well-justified. However, the good news is that with existing technologies these problems can be taken care of – though this will increase the cost of production for unconventional gas. So if we are to enter a golden age of gas, companies must apply golden standards to their extraction technologies. This will increase the cost of production somewhat, but it will open the door for gas to play a growing role in the global energy mix. This is why to the question of a golden age for gas my answer is yes so long as the gas industry is able to produce it in a sustainable manner.

### **What is the prospect for gas price harmonisation around the world?**

I expect that the growing share of LNG in global gas supply and increasing opportunities for short-term trading of LNG will contribute to a degree of convergence in prices across the main markets in North America, Europe and

Asia. Nonetheless, I still think we will see fairly significant price differentials, reflecting the relative isolation of these markets from one another and the cost of transport between regions.

### **The IEA has expressed general concern about the impact of subsidised oil consumption on exports. Where is this particular concern?**

It is not only us who have expressed concern. Indeed in 2009, the G20 leaders actually agreed to phase out subsidies that “encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change.” But progress on this worldwide is slow.

Subsidies that artificially lower the prices of fossil fuels amounted to over US\$400 bn in 2010 with around half for oil products. In many cases they were introduced with the well-intentioned objective of improving access to modern energy services for the poor. In practice, however, they have often proved to be an inefficient means of achieving this goal. Typically those who consume the most energy benefit the most from subsidies, such as those who can afford to own a vehicle or electrical appliances. The removal of these subsidies would improve energy security, reduce emissions of greenhouse gases and bring economic benefits.

### **Light tight oil provides a great example of how the industry continues to innovate**

Although subsidies for oil exist in many parts of the world, they are particularly prevalent in the Middle East. At the same time, oil demand in the Middle East is increasing substantially. There are three reasons for this – two of which are justified, and one is not. Growth in economies and in population justifies an increase in energy consumption. But the third reason is not justified – the fact that retail energy prices are artificially low. This results in low efficiency in domestic energy use which leads to reduced availabilities for export. Over time, such subsidies may even threaten to curtail the exports that earn vital state revenue streams. At US\$81 billion, Iran’s subsidies were the highest of any country in 2010, although this figure could fall significantly in the coming years if the sweeping energy-pricing reforms that commenced in late 2010 are implemented successfully and prove durable. I hope other countries in the region follow the example. ■