

[Key factors influencing the oil industry]

- Growing energy demands from China and India.
- IOCs have reduced access to oil reserves.
- NOCs no longer need IOC expertise.

Outlook for change

22



The oil world continues to undergo radical changes, of which the historic oil price highs are but one symptom. **Dr Fatih Birol**, chief economist of the **International Energy Agency**, describes to *World Expro* the emergence of a 'new world energy order', which poses challenges for the once dominant international oil companies.

As oil prices continue to rise – an unprecedented \$11 per barrel in a single day in May 2008 – analysts are still casting around to apportion the effect of the main drivers impacting the market: shortage of supply, excess of demand and speculative investment. There is no doubt that new demand from emerging economies is playing a significant role and that this is being leveraged by speculators.

However, Dr Fatih Birol, chief economist at the International Energy Agency (IEA), deplores the way in which the names of China and India are always linked when describing this burgeoning new emerging economy oil and gas demand.

'Everyone always links China and India,' he says. 'But there is a big difference in the two countries in terms of economy, energy demands, investments and electricity growth.'

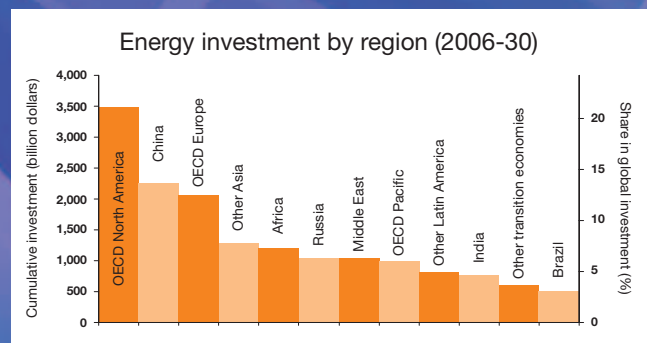
However, he admits that many leading economic organisations, such as the International Monetary Fund and the Organisation for Economic Cooperation and Development and the World Bank, got their economic outlooks wrong over China.

'We have not been accurate in estimating Chinese economic growth in the last ten years,' he says. 'We have always thought that it would slow down. But it never did.'

From industry to service

For Birol, the big question is not simply China's future real growth, but the nature of that growth, of which he notes, more than half has unusually been based on heavy industry with its high energy demands and climate-changing emissions. There are inherent risks, both economic and climatic, in continuing such expansion without sustainable energy policies.

'The Chinese authorities are aware of this and are trying to move from its heavy industry base to the lighter service areas,' says Birol. 'But there is a question mark over if and when they are going to be successful. No one should underestimate the significance of what China does next. The changes will have



Almost half the world's energy investment will be needed in developing countries. (IEA)

implications for everyone, not just for China, because every step they take has vibrations throughout the world.'

The fact that India has yet to contribute substantially to global energy demand is in part a reflection of the fact that its economic growth has been largely based on service industries. China, according to Birol, has been very proactive in pursuing unique growth policies, one of which embraced electrification.

'From the beginning of the 1990s to early 2000, the Chinese government brought electricity to about 500 million people,' he says. 'It was an incredible success. It was done as a government policy. The government didn't look too much at whether it made economic sense or not, it just went ahead and did it. In such a short period of time, and in such a huge country, it was remarkable. Unfortunately, this was not repeated in other countries at this stage of economic development.'

Energy investment

According to the IEA's Global Energy Poverty map, there are 412 million people without electricity in India compared with just 18 million in China. Equally, India is way down the IEA's regional list (see chart above) for required energy investment between 2006 and 2030, with less than half the \$2.3 trillion cumulative investment slated for China.

Birol accepts that if India were to turn around its dilatory approach to power investment, the energy requirement to generate it would have an important new impact on international demand for coal and other energy sources.

'The investment in India could have two different sources,' he explains. 'One could be as a result of the domestic accumulation of capital, and the other is the bringing in of foreign direct

investment. India is certainly making significant amounts of [power] investment. However, it is not yet at a level that we would like to see.'

This is mainly as a result of not having enough domestic capital. And at the same time, the current regulatory framework for India's electricity sector is not yet attractive enough for many investors to put their money into Indian electricity capacity generation.

'Some outside investors have had bitter experiences in the recent past,' Birol adds. 'But I know the government is making every effort now to provide an attractive framework for foreign investors. Nevertheless, it will take time before we see the fruits of that. For the time being, the investment level in India is not yet at that of China, where you have huge domestic capital to put into the electricity sector. If the Indian government provides a reliable, predictable framework, we will definitely see large flows of investment capital.'

Reserves access

In the view of some analysts, such investment may come from sovereign wealth funds or national oil companies (NOCs) the latter already emerging as the dominant oil and gas players, in what Birol characterises as the 'new world energy order'.

'The oil markets are going through a very difficult time,' he comments. 'The international oil companies [IOCs], which now own about a quarter of the global oil reserves, are struggling to gain access to new reserves, especially in the key producing regions. For example, in many countries in the Middle East foreign access to reserves is restricted by law. Access is under the control of the NOC. Many of the IOCs have reserves in the North Sea and the Gulf of Mexico, which are mature fields that

'One should not expect that the growth from non-conventional oil fields will change the entire picture.'

are declining significantly. The forthcoming *World Energy Outlook 2008* features a detailed field-by-field analysis of over 600 of the world's largest oilfields in order to assess current reserves and future production potential for both NOCs and IOCs.'

IOC reserve replacement has become sluggish. 'They have done excellent work in the last 25 years,' Birol adds. 'With limited reserves they were responsible for over half the growth in oil production, thanks to very efficient management and technology use in response to market calls. Since the IOCs cannot increase production in their existing fields and cannot gain access to huge reserves in key producing areas, they are looking for alternatives. Among those are non-oil options. Some are looking at gas, electricity, nuclear, carbon capture and storage applications, while some of them are even looking at fields that were historically deemed too costly to produce, such as Canada's Athabasca Oil Sands, deepwater offshore or, in some cases, oil shales. High prices will also give impetus for IOCs to turn to commercial gas-to-liquid and coal-to-liquid technologies. As long as we have high prices, those projects are becoming more profitable and one can expect tar sands and others to come on to the market.'

Indeed, the 170 billion recoverable barrels in the Athabasca

[Sovereign and corporate responsibility]

There is a belief that, because NOCs do not have nervous institutional shareholders looking over their shoulders and are better placed to ignore environmental pressure groups such as Greenpeace, they can avoid the costs and challenges inherent in corporate social responsibility (CSR), especially as it relates to the environment and the control and reduction of carbon gas emissions. However, this is not a view with which Dr Birol has much sympathy.

'I think it would be wrong to say that IOCs are more environmentally friendly than NOCs,' he says. 'In both areas, there is good performance and less-good performance. I know many NOCs that have an excellent environmental record, and I know some IOCs whose record is not as good as the NOCs. Therefore, in the whole oil sector, we need to make sure all the companies understand that this climate change problem does not concern just the environmentalists or the greens; it is a serious problem affecting all of us if we do not altogether take the appropriate measures. In my view, the IOCs are not suffering from an unfair disadvantage in pursuing their CSR agendas.'

Oil Sands allegedly give Canada reserves second only to those of Saudi Arabia, though the less accessible Orinoco oil sands available to Venezuela's NOCs are reportedly greater.

'One should not expect that the significant growth from non-conventional oil fields will change the entire picture,' says Birol, 'which is that we are heading towards an oil sector that is going to be dominated more and more by the big NOCs, who will account for the bulk of the growth in oil production.'

Trends and relationships

The historic need of NOCs to have partnerships with IOCs, because they had the technology and skills and to a degree the capital that NOCs lacked, has disappeared.

'There are two new trends,' explains Birol. 'One is that many NOCs have developed expertise and technological know-how. I can give you two examples. Both Saudi Aramco and Petrobras have excellent know-how that is at the level of many IOCs. The second trend is that NOCs can now hire oil field service companies. These firms are now becoming the pillar of the oil industry. Instead of sharing the production with an IOC, NOCs contract the drilling and other activities and they still have the ownership of the fields. The recent substantial rise of oil field service companies is due, among other things, to the demand for more and more services from the NOCs.'

Joint ventures are occurring increasingly between NOCs, rather than with IOCs. 'It is a growing trend,' he adds. 'They find some complementary skills, capital and technology know-how. Many Chinese companies are now coming to Africa. Petrobras is also investing in Angola. While they still need the oilfield service companies for access to specialised technology, they no longer need IOCs as much as before.' ●

[Dr Fatih Birol]

Dr Fatih Birol is chief economist of the Paris-based IEA. He is organiser and director of the *World Energy Outlook* series, the IEA's flagship publication. Birol worked for six years in the secretariat of the Organization of Petroleum Exporting Countries in Vienna, before joining the IEA in 1995. He received the *Chevalier dans l'ordre des Palmes Academiques* from the French Government and the Golden Honour medal from the Austrian Republic in recognition of his work on global energy issues. The *World Energy Outlook 2008* will be released on 12 November 2008.