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Energy: Unconventional oil - OPEC's new challenge

Tight oil - using the same techniques that allowed for the successful exploitation of shale gas - will keep the global market well supplied for at least the next ten years, according to the latest projections by energy giant BP. What does this mean for oil prices? The answer largely depends on the reaction of the Organisation for Producing and Exporting Countries (OPEC).



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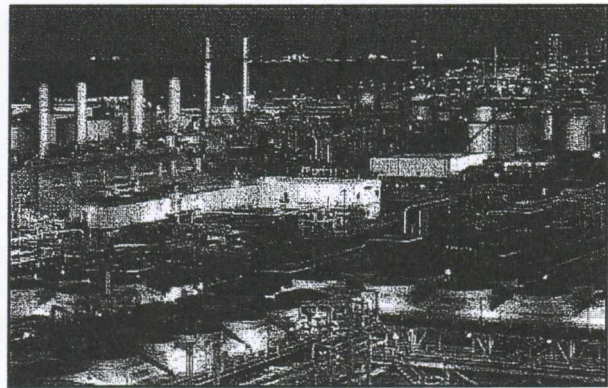
THE SHALE revolution, first for gas and then for oil, has altered the global energy market. According to BP's latest projections, shale gas and tight oil will account for almost 20 per cent of the increase in global energy supply in 2030. The bulk of this increase will come from North America.

This scenario is in line with the findings of other international organisations, such as the International Energy Agency (IEA) and the Energy Information Administration (EIA), although BP's estimates - in its World Energy Outlook to 2030 - are more conservative.

Extra demand

High oil prices, competition, technological advances and an investment-friendly environment have contributed to the impressive growth in tight oil production in the US. These factors are transforming previously uneconomic oil resources into proved reserves and production.

Globally, from 2011 to 2030, production from tight oil is expected to grow more than six-fold. This is exciting news for consumers, who will need an additional 16 million barrels of oil per day (Mb/d) by 2030. Developing countries will be the most energy hungry.



Saudi Arabia is OPEC's largest producer (photo: dpa)

Half of that extra demand will be met by tight oil, which will reach nine per cent of global production (7.5Mb/d). New supplies, especially coming from countries outside OPEC, would mean - everything else being equal - lower oil prices and greater security of supply. But a wild card remains in the form of OPEC.

OPEC supplies

OPEC supplies around 42 per cent (35.8Mb/d) of global oil production and exports about 60 per cent of the total petroleum traded internationally. Any changes to its level of production will impact the price of oil.

Traditionally, OPEC members maintained a

certain level of spare capacity – partially to cushion the system against supply disruptions, and sometimes as the result of production cuts negotiated within the organisation to maintain a ‘balanced market’, i.e. a certain price.

The EIA defines spare capacity as the volume of production that can be brought on within 30 days and sustained for at least 90 days. Oil producers who are not affiliated with OPEC have no production quotas and therefore are not obliged to hold spare capacity.

Typically, in times of weak demand and if production cuts are implemented OPEC spare capacity rises. If demand increases, spare capacity falls. Only Saudi Arabia has kept around 2 Mb/d of spare capacity on hand, no matter the circumstances, to safeguard the market. The Kingdom remains OPEC’s largest producer and is also the holder of most of the organisation’s spare capacity. It is OPEC’s main swing producer.

During periods of large OPEC spare capacity, for example during the 1980s and 90s, the oil market tends to be quieter. When spare capacity is tight, such as during the last few years, the market is nervous and the oil price is more sensitive to events affecting major producers.

Dependence

While the oil market is affected by OPEC behaviour, the organisation’s member countries equally depend on developments in the oil market, namely on those that go beyond the organisation’s control such as non-OPEC supplies and global demand.

OPEC economies heavily rely on oil revenues and member countries would therefore like to see oil prices sustained at higher levels to balance their budgets. It is estimated that an oil price of at least US \$100 per barrel is needed to maintain existing budgets in member countries.

When oil prices collapse, OPEC typically seeks to implement production cuts to reverse the trend.

A good example was seen by the onset of the financial crisis in 2008. Prices reached US\$147 per barrel in the summer of 2008 then fell to US \$32 by December. In response, OPEC cut production three times to bring prices back to US

Unconventional oil

- In 2030, the US, Russia and Saudi Arabia will provide a third of global oil (BP 2030 World Energy Outlook)

- ‘Unconventional’ oil is the same commodity as ‘conventional’ oil. The word ‘unconventional’ is often applied to major new advances in extraction technology that allow access to resources not otherwise technically or economically recoverable

- In the USA, the unconventional oil revolution is concentrated in North Dakota, home to the booming Bakken tight oil fields. In March 2012, North Dakota overtook Alaska to become the second largest oil producing state in the US, second only to Texas (IHS, 2012)

- Russia and China – with robust service sectors and expected additional fiscal incentives – are expected to develop their tight oil resources reaching 1.4Mb/d and 0.5Mb.d by 2030, respectively (BP 2030 World Energy Outlook)

- OPEC earned US\$1,026 billion in net oil export revenues, a 33% increase from 2010. Saudi Arabia earned the largest share of these earnings, US\$311 billion, representing 30% of total OPEC revenues (EIA, 2012)

- Between 2010 and 2015, in order to maintain capacity, about 132 projects, with an overall estimated cost of some US\$300 billion, are being undertaken by OPEC member countries. The net increase in OPEC’s liquids capacity by 2015 is estimated to be close to 7Mb/d above 2010 levels (OPEC, 2013)

\$100. For this reason, oil prices recovered earlier and faster than other fuels.

Scenarios

In the light of the unconventional oil revolution, two scenarios illustrate potential OPEC reaction. Under the first scenario, the organisation neutralises the additional supplies coming to the market by cutting production. As a result, member countries will be left with large spare

capacity to manage. This, however, is not a straightforward task as – with prices high and spare capacity plentiful – individual members of the organisation will have an incentive to sell more oil than agreed.

Production targets

In this respect, one country stands out. Iraq is an OPEC member but its quota has been suspended since the first Gulf War (1990-1991). Iraq's oil production has increased rapidly, reaching 2.8 Mb/d in 2011, an increase of 12.8 per cent compared with 2010. Iraq is hoping to reach 6 Mb/d by 2017, although originally, and based on the production targets as set out in the signed contracts with existing companies, that target should have been 12Mb/d.

On several occasions, Iraqi officials commented that Iraq would not curtail its production to meet an OPEC quota.

The reality, however, is likely to be different. The government of Baghdad signed service contracts with oil companies. One characteristic of such contracts is that the government retains all the price upside and downside. If the price increases, the government benefits; if it decreases the government will almost exclusively bear the burden as lower oil prices mean lower revenues.

Fluctuating prices

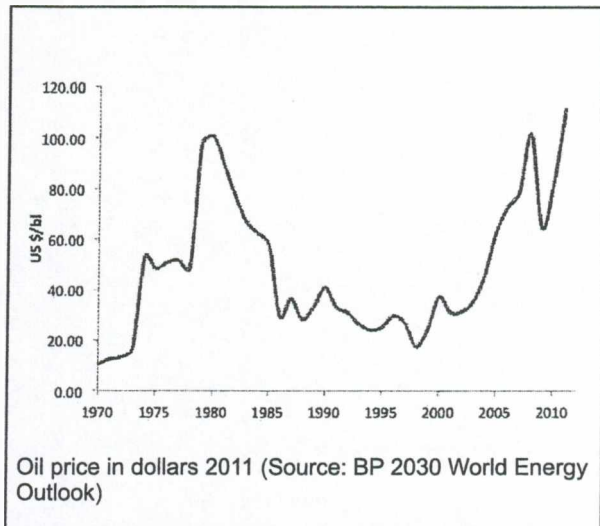
The exposure of the Iraqi government to fluctuating oil prices is an important incentive for Iraq to re-join an OPEC quota.

The more successful Iraq is in ramping up its production, the more likely it will have an impact on oil price. Once supply growth affects the international oil price, then the revenue maximising policy is likely to encourage Iraq to cooperate with OPEC to maximise prices not production.

Under the second scenario: OPEC fails to cut production. Member countries have not always complied with the production targets adopted by the organisation.

In this case, the new production from North America is likely to have an impact on global oil prices.

Often, Saudi Arabia has carried the burden of



compensating for the poor adherence of other members. When oil prices collapsed in the early 80s, the Saudis had to cut their production from a high of 10.27 Mb/d in 1980 to 3.6Mb/d in 1985, despite their production capacity at that time being almost three times that level.

If oil prices collapse, both oil companies and producing countries will weep while consumers rejoice. But for how long?

Some fear that if oil prices fall, both the supply and demand will react. On the one hand, an oil price below US\$80 per barrel will make some of the tight oil projects uneconomic and supply will therefore decrease.

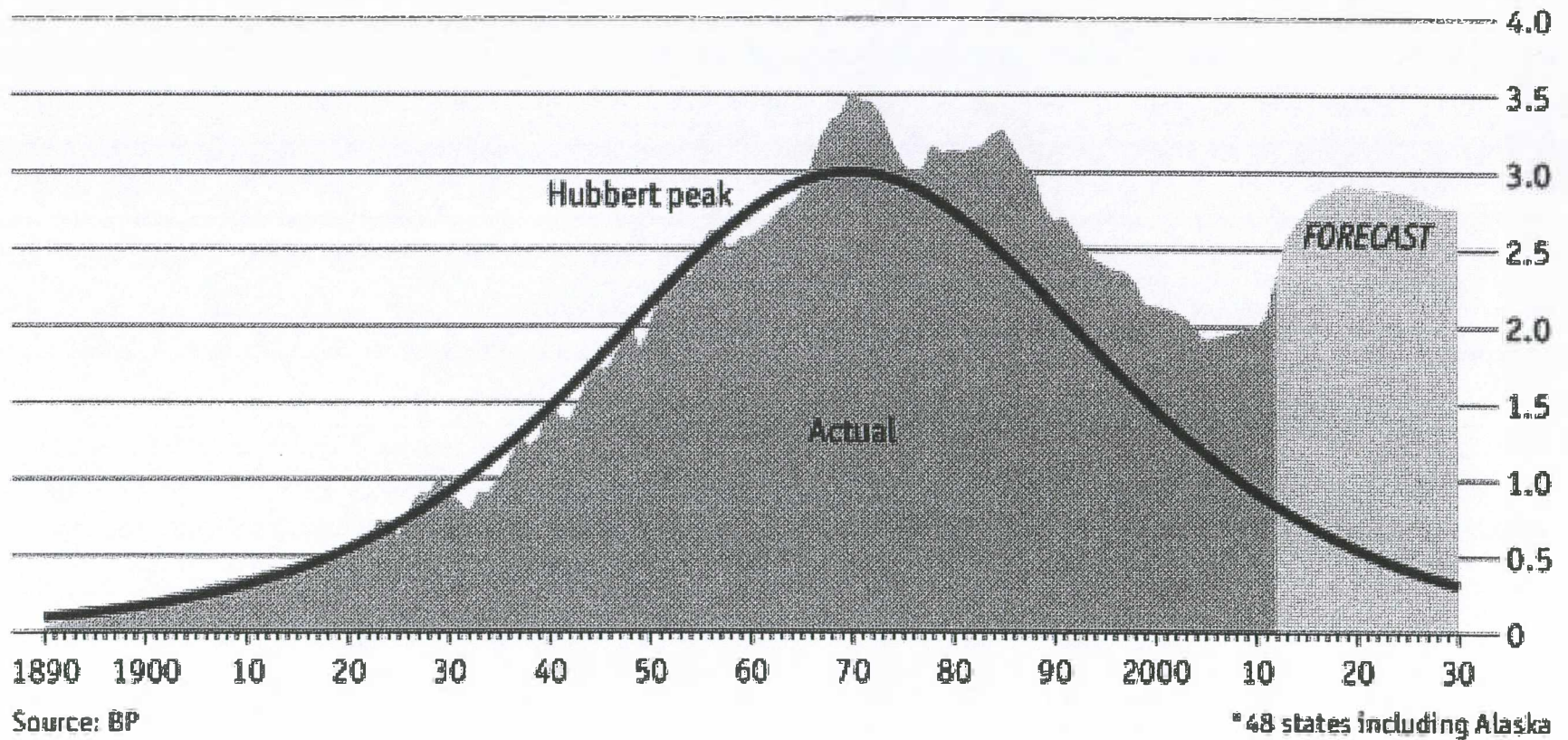
Currently oil demand is relatively low because of existing economic conditions – mainly in the US and in Europe, as well as in response to high oil prices. If the oil price decreases, however, demand is likely to increase.

Upward pressure

This combination of lower supplies and higher demand can reverse the trend and put upward pressure on prices.

But market adjustments do not happen overnight, at least not for oil. Both oil demand and supply are what economists call 'inelastic' – they take time to respond to changes in the price. It takes many years to make a discovery and bring it to production and it takes many years for consumers to adjust their habits. It also took more than 20 years for oil prices to recover from their low levels in the 80s.

US Crude Oil Production* (billion barrels per year)



(As shown in the Economist, 5th March 2013)