



## Energy security revisited

David Robinson

Robert Mabro has written and spoken widely on the topic of energy security. His views are summarized in a 2005 speech.<sup>1</sup> Drawing on that speech and my recent interview with Mabro, this article explores four questions of current interest. They address the definition of energy security, how to manage energy security risks, whether unconventional resources make the USA energy secure, and whether low oil prices undermine energy security.

### What is energy security?

In 2005, Mabro made three points related to this question. First, he argued that energy security had always been about disruptions in international oil supply. He did not think that Europe had a natural gas security problem because there were so many actual or potential suppliers. Nor did he think that electricity security was an important issue because there were straightforward

domestic solutions related to regulation and investment. Still today, for Mabro, the critical security issue is the potential for oil supply disruptions, fundamentally in the Middle East.

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Second, he identified two reasons for

supply disruptions: political decisions and uncontrollable events, like wars and revolutions. He argued that political disruption involving the use of the oil weapon was no longer possible, at least with respect to the countries of the Middle East. The latter did not have sufficient power to maintain pressure on the largest consuming countries and regions; the power of retaliation was too great. On the other hand, uncontrollable events that hit oil production or transport facilities could pose a real threat to oil supply security. He holds the same views today.

Third, his focus on energy security has been on the relatively short to medium term. To the extent that Mabro refers to long-term energy security, he refers mainly to investment cycles related to oil.

With respect to his emphasis on oil, with the benefit of hindsight, it is clear that in 2005 Mabro underestimated the security issues related to natural gas and electricity. Today, there are real risks associated with Russian natural gas supply to Europe. These reflect a more general problem: that reliance on pipeline gas with major suppliers can entail greater risk than reliance on LNG. Furthermore, there is growing concern over the prospect of electricity outages, for instance in the UK and Belgium, due to inadequate investment in firm generation capacity. Mabro is right that solutions for electricity are regulatory, but they are certainly not straightforward. Moreover, in the EU, they involve international agreements among 28 countries whose interests diverge widely. Proposed solutions, including the introduction of 'capacity' markets alongside existing 'energy' markets, aim to encourage investment in generation, but we are a long way from a model where security of supply is assured.

On Mabro's second point, the emphasis on uncontrollable events seems especially appropriate today

for the Middle East. However, energy security is not just about supply disruptions. It is about the balance of supply and demand. This suggests putting greater emphasis on the efficient operation of international energy markets.

On the third point, today energy security has a longer-term dimension related to sustainability. The science clearly indicates the contradiction between increasing consumption of hydrocarbons and avoiding dangerous interference with the climate. The problem is not about temporary or long-term shortages of oil, but that burning hydrocarbons could well cause a climate disaster.

**How should oil importers manage the risks?**

In his 2005 speech, Mabro warned that energy security concerns elicit fear and that fear is a bad counsellor. Although it was rational to take out some insurance against disruptions, the costs could well be much greater than the benefits. He recommended that the insurance include: strategic stocks of crude oil and products; a clear scheme for releasing the stocks in case of emergency; diversification of oil and energy; and promoting energy efficiency in use. Today, Mabro holds the same view.

**'MABRO ARGUED THAT THE IEA'S EMERGENCY OIL SHARING AGREEMENT WAS SENSIBLE AND RELATIVELY COSTLESS.'**

In our interview, Mabro argued that the IEA's emergency oil sharing agreement was sensible and relatively costless. However, he stressed that there was no guarantee that an IEA country would actually abide by the agreement in a true emergency. In other words, a sharing agreement offered some comfort, provided the perception was

that the signatories would abide by the agreement when it really mattered. But in practice, that would depend on each individual country's interests at the time the emergency actually occurred.

Mabro also expressed the view that there were limits to using international financial and oil markets to hedge against price movements and physical shortages. Prices could rise too high and there were physical limits to storage at any given time.

**'IT IS HARD TO ARGUE WITH MABRO'S EMPHASIS ON THE LIMITS TO WHAT MARKETS CAN ACHIEVE.'**

All of Mabro's views on managing the risks of potential supply disruptions are sensible, but the conclusion on emergency sharing is provocative. He seems to be arguing that countries, including IEA members and non-members such as China, should sign up to relatively costless emergency sharing schemes, but meanwhile build up their own strategic storage in case the agreement breaks down under stress. (It is interesting to note that low oil prices are an opportunity to build strategic stocks. China appears to be doing just that.<sup>2</sup>) In my view, this is one further reason to question the future of the IEA, whose creation was sponsored by a country (the USA) that grows less concerned about energy security, while the largest and fastest growing energy consumers (such as China and India) are not amongst its members.

It is hard to argue with Mabro's emphasis on the limits to what markets can achieve. Nevertheless, liquid and efficient markets are a critical element of energy security. Indeed, in view of the possibility that emergency sharing regimes could fail when put under pressure, governments should be fostering more liquid and efficient markets to help cope with emergencies.



### Do unconventional resources give the USA energy security?

In our interview, Mabro argued that the USA overstates the degree to which the development of unconventional energy resources provides energy security. He stressed the importance of distinguishing between different fuels. Shale gas is inexpensive in the USA and, consequently, the USA is now in a position to export this fuel and to use it for industrial markets such as petrochemicals. However, the USA still imports over 7 million b/d of crude oil and will continue to rely on crude oil imports unless natural gas replaces significant volumes of oil in the transport market, a view espoused by Jaffe and Morse (who argue that 40 million b/d of the global 85 million b/d oil market is open to competition from natural gas).<sup>3</sup> Mabro was especially sceptical of that view on the grounds that oil and gas are very imperfect substitutes, especially in transport.

Mabro also maintained that, even if imports fall from the Middle East, the USA should still be concerned about stability in that region and ensuring oil and gas supply there. Reducing US imports from that region does not make the USA more secure if the alternative imports come from other countries that are 'unfriendly', such as Russia and Venezuela. Furthermore, even if the USA relied less on Middle East oil, that region would continue to be the low-cost oil producer this century and supply at least a third of the world's crude oil. If supply in the region were curtailed for a sustained period, world (and US) oil prices would rise and threaten the health of the world economy on which the USA depends.

I agree with Mabro that the USA is very unlikely to become a net exporter of crude oil and that the USA exaggerates the extent of its energy security. It is of course conceivable that the USA,

Canada, and Mexico will together become a net exporter of crude oil. However, a focus on net oil exports and energy independence misses the point: the USA will not be truly independent as long as its oil markets and prices are intimately tied to world markets.

Even if the USA does not become independent of world oil markets, the reduction in imports from the Middle East is changing US international policy. In particular, it facilitates the US 'pivot' towards Asia. In other words, the USA can dedicate fewer economic, political, and military resources to the Middle East, leaving others to contribute more to ensuring the security of oil and gas production and transportation. Javier Solana<sup>4</sup> has argued in the *Oxford Energy Forum* that this creates a dilemma for China, which is now the main market for Middle East oil and gas. If the USA dedicates fewer resources to the Middle East, China will be obliged to dedicate more resources there, but by doing so they facilitate the US pivot into Asia.

### How do lower energy prices affect investment and security?

In our interview, Mabro emphasized the difference between the current low price of oil and how much rent there still is in the oil price. There is some very low marginal cost oil in some areas, in particular the Middle East. As long as that is the case, he argued, there would always be investment. So low prices hurt oil producers and investment in high-cost areas, but that alone is not a reason to expect an oil shortage.

He also stressed that non-price issues are more important than most people think. For instance, the Saudis could produce 14 million b/d, but could survive with 4–5 million b/d; their level of production is not determined solely by prices. Indeed, production in most countries is a function of history (i.e. the result of past investment decisions), as

### 'MABRO HAS ALWAYS EMPHASIZED THE IMPORTANCE OF EXPECTED DEMAND AND PRICES ON INVESTMENT.'

well as political decisions on revenue requirements, taxes, depletion, and other factors. His point is that low prices need not lead to a shortage of production.

Mabro has always emphasized the importance of expected demand and prices on investment. For instance, in his 2005 speech, he addressed the question on everyone's mind at the time: whether prices of US\$60–70/bbl were sustainable. Prices at that level were much higher than they had been. (The average WTI price in 1998 was US\$14.39; in 1999, US\$19.31; in 2000, US\$30.37; in 2001 and 2002, around US\$25/26; and in 2003, US\$31.07. In 2004, it reached US\$41.49 and in 2005 it reached a peak of US\$69.85.<sup>5</sup>) Mabro's answer then was that it all depended on the behaviour of world demand over the next four or five years. If demand growth continued at 3.4 per cent per annum, prices would rise to the range of US\$90–100/bbl, eventually choking off demand and world economic growth, leading to a sharp fall in prices. On the other hand, if demand growth were much slower, say 1.4 per cent per annum, non-OPEC production would rise faster than demand and OPEC would have trouble defending US\$45–50/bbl. Either way, the conclusion appeared to be that it would be difficult to defend prices at US\$60–70/bbl.

Mabro's views suggest that the relatively low prices we are currently experiencing (\$50–60/bbl) are consistent with continued investment and supply security, even if there is a redistribution of oil supply to lower-cost regions. However, we need to interpret his message about expected oil demand in the context of the increasing flexibility of world oil supply. On the

one hand, concerns over climate change could well lower oil producers' forecasts of oil demand and prices in 20 years, thereby reducing investment and potentially creating oil supply

shortages. On the other hand, the growth of unconventional resources has introduced a new flexibility on the supply side. If shortages do appear and oil prices rise, it won't take long

for unconventional resources to come on stream. In effect, these flexible resources are capping world oil prices while contributing to the security of world oil supply.

#### Notes

<sup>1</sup> 'Oil Security and Oil Prices: Implications for Asia', by Robert Mabro, IEEJ Conference, Tokyo, 25 November 2005. [http://eneken.ieej.or.jp/en/seminar/aef2005/Doc\\_Mabro\\_kityoukouen.pdf](http://eneken.ieej.or.jp/en/seminar/aef2005/Doc_Mabro_kityoukouen.pdf).

<sup>2</sup> 'China Boosts Buying For Oil Reserves Amid Drop in Global Prices', an analysis by Michael Lelyveld, Radio Free Asia website, 26 January 2015. [www.rfa.org/english/commentaries/energy\\_watch/oil-01262015105428.html](http://www.rfa.org/english/commentaries/energy_watch/oil-01262015105428.html) (last consulted, 16 March, 2015).

<sup>3</sup> 'The End of OPEC', Amy Myers Jaffe and Ed Morse, *Foreign Policy*, 16 October, 2013. <http://foreignpolicy.com/2013/10/16/the-end-of-opec/>.

<sup>4</sup> 'America's Perilous Pivot', Javier Solana, *Oxford Energy Forum*, 91, February 2013, page 3.

<sup>5</sup> 'Oil Security and Oil Prices: Implications for Asia', op. cit.

