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How shale gas will transform the markets

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The past 100 days have been a dramatic time for energy markets, as a nuclear accident in Japan followed revolt across the Middle East, with oil prices fluctuating sharply in the aftermath. Despite the sense of crisis, however, neither Fukushima nor conflict in Libya is likely to disrupt long-term patterns in global energy supplies. But there is one new development – the rising importance of shale gas – that just might.

Much of Libya's oil production has been lost for the past two months but other members of the Opec producers' cartel have boosted supplies. There are still 4m barrels a day of spare capacity. Prices rose by more than 20 per cent, but this reflected nervousness about what could happen next in the Middle East. In particular, there are signals of uncertainty in Saudi Arabia, with persistent rumours about King Abdullah's health and no clarity on the succession. Following last week's correction, when prices started to fall back, it appears $125 a barrel was a temporary peak. The market valuations of companies such as Shell and Exxon, which would have benefited more from sustained high oil prices, have remained largely unchanged.

Nor has the tragedy in Japan transformed the nuclear sector. Only Germany has closed nuclear plants, although others have delayed or reviewed plans. And even Germany is making up lost supplies with imports from neighbouring France and the Czech Republic – both of which, ironically, generate their electricity from nuclear power.

The rest of the world is pausing while reviews identify exactly what happened in Japan. In the developed world, the resulting extra safety requirements will make nuclear power more expensive and dependent on subsidies. The relief for the industry is that most of the nuclear plants planned for the next two decades are in the developing world. There, too, some plans are on hold but they are unlikely to be abandoned – especially in countries such as China and Russia, where public opinion carries little weight.

So despite the sense of crisis in the headlines, the energy market has shown both resilience and resistance to rapid change. Across the world, coal, oil and natural gas remain the source of more than 80 per cent of all primary energy demand, with nuclear adding only 6 per cent. Renewables are the fuels of the future but remain dependent on subsidy and regulation. They still provide less than 2 per cent of global energy needs – a figure that will at best rise to just 7 per cent by 2035.

But in the tumult of recent months one crucial, if little noticed, development has the potential to transform the energy market. A cautious but authoritative survey published last month by the US Energy Information Administration set out, for the first time, estimates of the volumes of technically recoverable shale gas in 32 countries. Shale is natural gas trapped in rock, and removed by hydraulic fracturing techniques. Once thought too costly, it has of late begun to transform the American energy

scene. Production has risen 12-fold in the past decade, and it now supplies almost a quarter of US gas needs. Once a major importer, the country is today self-sufficient in gas. Some now talk of exports.

The EIA does not assess the wider commercial viability of the gas. But the scale of the potential supplies – 6,600trn cu ft in total, with significant deposits in China, Argentina, Mexico and northern Europe – shows the potential. To put such figures into context, the shale gas identified just in the countries the report covers will add 40 per cent to the world's technically recoverable gas resources – and further reserves may yet be found in the Middle East, Russia and Mediterranean countries.

Shale gas can be controversial. Carbon emissions are higher than for conventional natural gas, and several small-scale projects in Europe are held up by environmental concerns. But high energy prices and political uncertainty in the Middle East could now spur many of the world's energy importers to exploit these new, indigenous gas supplies. What has happened in America could also happen elsewhere. Specialist US firms are looking at opportunities in China, and the development of shale gas there could pre-empt the huge imports of both oil and gas that have been widely predicted.

Significant moves towards shale would have big ripple effects in other energy markets, too. Investments in the Middle East and Africa would be undermined if gas exports into China were smaller than expected. Shale could also rival renewables that require big subsidies, and new pipeline and liquefied natural gas projects. There will no doubt be more energy crisis headlines in 2011. However lasting changes are unlikely to flow from political conflicts in north Africa or the nuclear sector in Japan. Instead, it is the quiet combination of geology and technology that could transform global energy in decades to come.

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