

Energy: The risks for Europe of failing to exploit shale gas resources

A number of countries in Europe and Asia have been deeply sceptical about the benefits of using their own shale gas resources, mainly because of warnings over risks to the environment. But as the supply of energy becomes ever more problematic - and expensive - particularly in the wake of US dominance in the shale gas market, some in Europe are having second thoughts.



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EUROPEAN industries and some European governments have recently begun to recognise that the unconventional gas revolution is no longer confined to North America, but is spreading globally.

The rapidly expanding production of shale gas has transformed the United States from being the world's largest import market of liquefied natural gas (LNG) to a self-sustaining gas producer and a net gas exporter.

In 2009 the US overtook Russia as the world's largest gas producer. In 2010 it overtook Qatari gas production as the world's largest LNG exporter by about 60 per cent.

Gas glut

The sudden gas glut since 2009, from an overcapacity of LNG, stems from a combination of three factors: a drop in demand linked to the global economic recession; an unexpected dramatic increase in American shale gas production; and new global LNG delivery capacity.

LNG is now less expensive in Europe than pipeline gas for long-term contracts. This has contributed to the separation of gas and oil prices. This could become a permanent feature of the global energy market because the



Cheap coal imports are leading to higher emissions
(photo:dpa)

remaining global unconventional gas resources are much bigger than conventional ones.

The development of unconventional gas in the US since 2006 has not only triggered a revolution in US energy markets, it has also become the tipping point for fundamental change in global gas markets. It has laid the groundwork for an expanded role of natural gas in the world economy.

Golden Age

The International Energy Agency (IEA) has said that the world is set to experience a 'Golden Age of Gas' in which unconventional gas has already become a 'game changer'.

Europe and Asia were initially reluctant to recognise the widespread geo-economic and geopolitical impacts on - and implications for - their own regional gas markets and energy policies.

Both regions have significant shale gas and other unconventional gas resources, according to new estimates.

Environmental risks

Some countries in Europe - including Poland, the United Kingdom, Lithuania and Ukraine - and China and Australia, have shown interest in exploiting their own unconventional gas resources.

But potential environmental risks have swayed other countries into adopting moratoria or outright bans on the production of shale gas, and particularly on fracking, the process of hydraulic fracturing to get gas out of the ground.

Those that are planning to exploit gas resources say it will enhance their energy supply security by reducing the volumes of expensive, and sometimes unreliable, gas imports. They also point to the United States as an example of where shale gas production could reduce greenhouse gas emissions and contribute to climate protection targets.

European markets

The IEA predicts that nearly half the increase in global gas production up to 2035 will come from unconventional gas, if the industry receives a 'social licence to operate' within stringent regulatory regimes to satisfy public environmental and social concerns.

The US is debating whether to export shale gas to Europe and Asia from 2015. The US energy company Cheniere, which owns the Sabine Pass LNG export terminal in Louisiana, is the only company with a licence for LNG exports.

But there are applications for 19 additional LNG

export gas licences. If all were approved, US exports would be equivalent to more than a third of domestically-consumed natural gas. Most experts believe that the US is unlikely to export more than 40-80 bcm (billion cubic metres) of LNG (equivalent to one to two per cent of global gas demand) per year based on the projected production of its shale gas between 2015 and 2020.

Those limited exports may have significant implications for the security of European energy supply.

But there are some new strategic developments on the European gas market which could also affect energy security.

One is the predicted stagnation of gas demand up to 2020, rather than a significant rise previously forecast. Other factors include: the expansion of new LNG terminals in Poland, the Baltic States, Croatia and other countries; new gas

interconnectors with reverse flow capacities in central and southeastern Europe; and the impact of the liberalisation and unbundling (the separation of prices for goods and services) processes within the EU-27.

Liberalisation is leading to more competition and new conventional offshore gas fields on the coasts of Romania and Bulgaria, Israel, Cyprus and Lebanon, which enables gas to be transported across much shorter distances to European consumer markets than gas via a long-distance, and expensive, Russian pipeline.

Higher emissions

The decline in US domestic coal consumption as a result of the coal-to-gas switch also opens the prospect of it becoming a leading coal exporter, reaching 500 mt (million tonnes) per year by 2030, to Europe, Asia and other regions.

The rising volume of relatively cheap coal imports from the US to Europe in 2012 has reduced Europe's consumption of gas. It has also

led to higher greenhouse gas emissions and put Europe at odds with EU climate and energy policies.

But the energy revolution is also having a big impact on the overall economic competitiveness of the US economy and industries towards rivals in Asia and Europe.

Development of unconventional gas reserves in the US has increased foreign direct investment (FDI), created hundreds of thousands of new jobs, dramatically reduced energy prices for industry and helped to strengthen energy diversification.

Europe's energy-intensive industries, such as the chemical industry, have become increasingly concerned that the gas glut in the US has reduced natural gas prices there by more than two-thirds since 2008.

Cheaper prices

In Europe, gas prices have remained relatively expensive because of the linkage to oil prices and long-term contracts with Russia which have 'pay-or-take' clauses.

The importer has to pay the supplier a certain price, even for products they do not take, for this type of contract clause.

Cheap US gas prices have already led to a revival of US energy-intensive industries and manufacturing.

A recent US Department of Energy report said that LNG exports would generate up to US\$47 billion in new economic activity by 2020 with little impact on domestic natural gas prices.

The Association of the German Industry (BDI) recently warned that if US natural gas prices stay

at US\$21 (16 euros) per megawatt hour (MWh) until 2020, it would be equivalent to 40 per cent less than the peak of US\$33 (25 euros) in 2008, three times cheaper than current German gas prices at US\$63 (48 euros), and almost a quarter of the predicted price of US\$ 80 (61 euros) by the end of the decade.

Industry threat

Cheap gas reserves also call into question the renewable energy policies of the EU, particularly those of Germany where renewables are heavily subsidised to be commercially viable and competitive.

There is also a question over the EU's efforts, since October 2012, to promote the re-industrialisation of the EU-27. It has been trying to increase the industry share of the EU's gross domestic product from the current 15.6 per cent to 20 per cent by 2020, after it fell from 22 per cent in 2000.

According to the chief executive of the Saudi Arabian company, Sabic, the world's biggest petrochemical group by market value, Europe risks losing new petrochemical investments to the US and other countries which are embracing shale and other unconventional gas, if it fails to exploit shale gas.

European managers of chemical and steel companies have given similar warnings in recent months.

Foreign investments in European petrochemical companies are already shifting from Europe to the US.

A new economic study in Germany has concluded that a creeping de-industrialisation of energy intensive industries is underway in Germany, Europe's economic powerhouse.

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