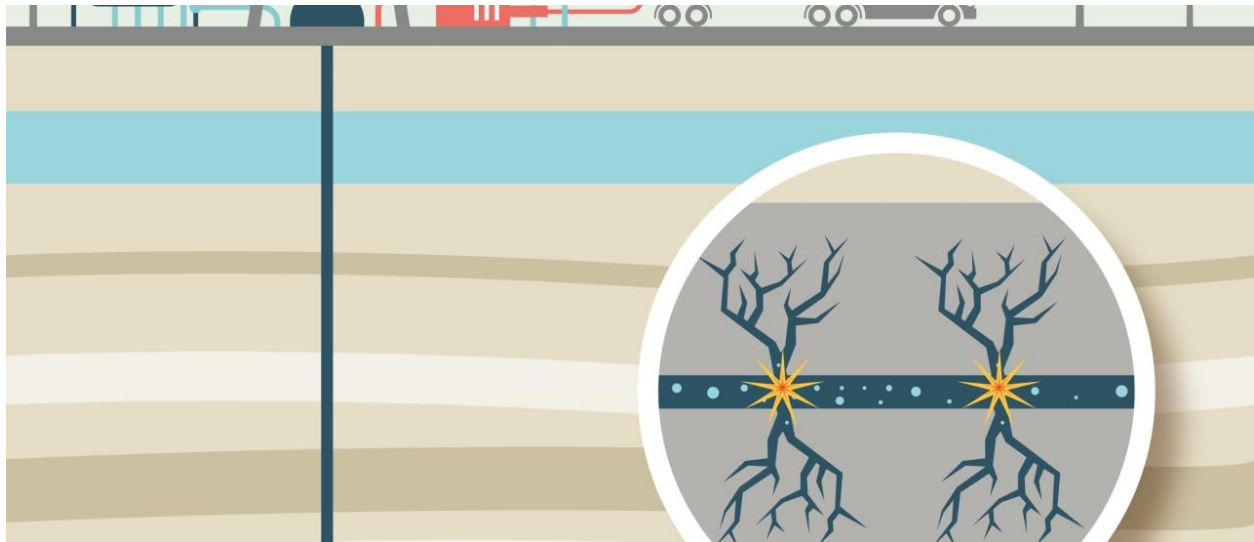


Shale Gas: Hype or Hope?



By Nicholas Bray, European Correspondent with Karel Cool , Professor of Strategic Management and Quentin Philippe (MBA '12D), Boston Consulting Group

A two-thirds plunge in U.S. natural gas prices thanks to soaring output of shale gas has given a boost to U.S. industry that is now being felt in the rest of the world. The impact in terms of competition threatens to be particularly strong in Europe, where high labour and energy costs are discouraging investment and driving companies elsewhere.

Fallout from the shale gas revolution in the United States is causing “a huge problem” for Europe, says Karel Cool, Professor of Strategic Management and BP Chaired Professor of European Competitiveness at INSEAD. And the front line in what threatens to become a battle for economic survival is Europe’s chemicals industry.

Cool’s research paper, “*Europe’s Shale Gas Competitiveness Challenge and Consequences for the Petrochemical Sector*,” is written with Philippe Quentin (MBA’12) of Boston Consulting Group in London.

Over the past five years, the price of natural gas to U.S. industry has fallen sharply, from about US\$12 per million British Thermal Units, or MBtu, in the first half of 2008 to an average of US\$3/MBtu in 2012. In contrast, European prices ranged between US\$8 and US\$11/MBtu in 2012. Chemicals companies use natural gas both for energy and as a raw material; and the price differential in America's favour represents a big competitive setback for European firms. "The U.S. petrochemical sector is now among the most competitive in the world and attracts major investment," Cool points out. "This is a real game-changer."

Belgium's Solvay, for example, has calculated that it faced a price disadvantage of 300 million euros in 2012 compared with its U.S. competitors. Looking forward, European chemicals producers face a major challenge from cheap imports, as U.S. chemicals firms ramp up their production to take advantage of these lower prices. In response, some European producers are looking to close plants, says Cool, while others are embarking on joint ventures in the U.S.

The woes of Europe's chemicals industry are prompting calls for Europe to move urgently to develop its own resources of shale gas, even though the cost of doing so would be much higher than in the US. "It is not because shale gas exploitation in Europe will be more expensive than in the U.S. that the resources should not be exploited," Philippe told INSEAD Knowledge.

On the contrary, he asserts, even limited shale gas production can help lower prices and reduce imports of natural gas, thereby improving Europe's trade balance and strengthening its bargaining hand in negotiations with existing suppliers of natural gas such as Russia, Qatar and Algeria.

The alternative would be a further weakening of Europe's commercial position that could leave it vulnerable to pressures from suppliers. "Caught between the U.S., Russia and the Middle East," says Cool, "Europe would be 'a sitting duck'."

The Competitiveness Factor

Can You Cash In?

The ups and downs of market prices for natural gas and the uncertainties of exploration and production make direct investing in shale gas risky. What's a private investor to do?

(Disclaimer: This is a round-up of current thinking on shale gas investing and is not meant as investment advice; please consult your own advisor before investing)

By Nicholas Bray, European Correspondent

“Think laterally” is the message from Tom Stevenson, an investment director at Fidelity Worldwide Investment. Just as the steady winners in the 19th century California gold-rush weren’t so much the prospectors panning for gold as the entrepreneurs who supplied them with things like picks and shovels, he maintains, the big earners from shale gas are likely to be companies positioned at one or two removes from actual production.

Upstream, firms like Schlumberger, which provides technology and project management services for oil and gas production, Halliburton, the world’s largest provider of hydraulic fracturing services, are obvious likely winners, he predicts. So are companies like Vallourec, a French producer of specialist steel tubes used in the casing of wells and the extraction of gas.

Other likely beneficiaries include Germany’s Linde Engineering, which specialises in gas processing and

Chemicals firms aren't alone in being hit by the fall-out from low U.S. gas prices. According to a study by Natixis, the investment management and financial services arm of French banking group BPCE, shale gas gave a competitive boost to U.S. industry in 2012 equivalent to a 17 percent cut in wages by comparison with companies in the Eurozone.

Under such conditions, Natixis observed, "It's not surprising that the U.S. should be reindustrialising and regaining market share internationally, essentially to the detriment of the Eurozone."

The economic effects of these shifting relationships are already making themselves felt.

While hundreds of thousands of jobs are being created in the U.S., taking the jobless rate to a four-year low of 7.5 percent in April, unemployment in the 17-nation Eurozone rose to a record 12.1 percent in March. According to the latest forecasts from the European Commission, the Eurozone's gross domestic product is to shrink by 0.4 percent in 2013, the second annual decline in a row.

How should Europe react? Before picking up the gauntlet and following the U.S. lead on shale gas, European countries need to overcome substantial public opposition to the process used to extract oil and gas from shale rock, known as hydraulic fracturing, or 'fracking'.

Even if they succeed and fracking does get the go-ahead in Europe, a host of factors ranging from higher land prices to the higher charges of service providers mean that drilling and production costs are likely to be substantially more than in the U.S.

“Extraction of European shale gas is at a far more embryonic stage than in the U.S., and as such, uncertainties over economics and even viability of extraction are currently far higher,” Goldman Sachs commented in a recent research paper. “This uncertainty extends to the volumes of technically recoverable resources, with current estimates of reserves still prone to significant movements.”

Given Europe’s precarious competitive position, nonetheless, shale gas advocates say such considerations should not discourage shale gas development in Europe.

Such a move would bring many benefits, according to a recent research report by Credit Suisse. Shale gas development would “not only give European countries a higher energy independence but would also lead to an influx of new investment flows, as well as job creation and higher tax revenues,” Credit Suisse affirmed.

Attaining such a goal is easier said than done, however. As the European Union gears up to set new 2030 targets for climate change, carbon emissions and energy, shale gas is variously seen as potential saviour or villain.

Environmental Concerns

Many environmentalists oppose the burning of fossil fuels as a matter of principle. Developing shale gas, they argue, will undermine efforts for energy savings and slow down the development of renewable energies. More particularly, environmental campaigners oppose fracking, which involves blasting water, sand and potentially dangerous chemicals at high pressure into the rock.

Fracking has been blamed for a whole series of ills, from increased rates of cancer to earthquake-type seismic reactions. It also requires large volumes

of water and poses a risk of release into the atmosphere of methane, a gas with 20 times the global warming impact of carbon dioxide.

The controversy over shale gas exploitation is at the heart of discussions on new energy targets and policies for Europe from 2020, when current targets expire. In a March 2013 green paper setting the scene for public consultations between now and July, the European Commission confirmed that the gap between energy prices in Europe and in the U.S. is a major issue for Europe.

“Developments in international markets and exploitation of unconventional hydrocarbons may lead to an increasing divergence of prices in the EU compared to those in other major industrial economies such as the U.S.A. where shale gas is now an increasing energy source,” it warned.

A moratorium on fracking?

Citing figures from the International Energy Agency, the Commission noted that electricity prices for industry in European countries belonging to the Organisation for Economic Cooperation and Development rose by an average 38 percent in real terms between 2005 and 2012, while they fell by 4 percent in the U.S. Thanks to shale gas development in the U.S., it added, gas prices for industry in the U.S. in 2012 were at one point less than one quarter of their level in Europe.

Where the debate heads next will depend on how successfully the advocates of fracking can counter the concerns of environmental campaigners.

In response to environmentalists' worries, France, which along with Poland is estimated to have some of the largest recoverable shale gas reserves in Europe, has imposed a moratorium on fracking, as has Bulgaria. Other

countries, including the Netherlands and Luxembourg, have suspended drilling for shale gas.

But Europe's worsening economic crisis is likely to put pressure on politicians for a change of tack. A serious downturn in Europe's chemicals industry, with all the related activities that depend on it, would send shockwaves through European economies similar to those caused by the decline in Europe's car industry.

Natural gas as a “bridging fuel”

Attitudes may be changing. In the U.K., the government recently followed up on an environmental study of shale gas exploitations by lifting a moratorium on fracking as part of a drive to stimulate energy investments and reduce dependence on gas imports. In France, the president of French employers association Medef, Laurence Parisot, has added her voice to a growing chorus of calls for the French government to follow suit.

Despite the objections of environmental campaigners, a growing number of opinion-formers are coming forward to argue in favour of cleanly produced shale gas as a “bridge fuel” that can provide a lower-carbon alternative to coal pending further efforts to reduce energy consumption and develop alternative energy resources.

“Together with increased energy efficiency, the clean use of shale gas is our best option for mitigating global warming in the near term,” says Elizabeth Muller, co-founder and executive director of Berkeley Earth, an independent body based in Berkeley, California.

Last year, Berkeley Earth published an analysis of 200 years of temperature readings which it said demonstrated that global warming is caused by

human activity, and it is now campaigning for action to curb carbon emissions. Muller argues that current best-practice fracking methods avoid contamination of local water supplies and keep methane leakage below 1 percent. She favours putting the ball back in the environmentalists' court by challenging them to support clean fracking as a positive way to counter global warming.

"The important question is not whether fracking has been clean in the past, but rather whether it can be clean in the future," she says. "The single most important thing that we - as a state, a country, or a local community - can do to mitigate global warming is to help develop clean fracking standards that can then be adopted as best practice around the world. For this, we need greater involvement from environmentalists to ensure that clean fracking standards are met."

China the next frontier

For the moment, advances in that direction are most likely to occur in the U.S., the world's leader in shale gas production. But China, with estimated recoverable shale gas reserves 70 percent larger than those of the U.S., is widely regarded as the next major frontier for fracking as a means to curb its reliance on carbon-intensive power generation using coal.

Shale gas is still in its infancy in China, but Beijing has set a production target for 2015 of 6.5 billion cubic metres, equivalent to between 2 percent and 3 percent of total gas production, rising to 60 billion cubic metres in 2020. Muller and others argue that the U.S. should provide technical help to China to enable it to go ahead with clean fracking as part of a global effort to combat global warming.

Europe, by contrast, looks less likely to enjoy a shale gas boom any time soon. In part, that's simply a matter of geology. Estimated exploitable reserves in Europe are smaller and environmental issues are more complex to resolve.

But legislative conditions are also potentially less favourable. Unlike in the U.S., where landowners benefit directly from the development of shale gas deposits, mineral rights in Europe are mostly vested in the state, giving landowners and local inhabitants less incentive to support such projects.

Worth the Risk

Philippe and Cool acknowledge that “developing shale gas plays in Europe requires solutions to the environmental challenges shale gas exploitation generates.” Not to do so, they add, would be “foolhardy”.

“Inexpensive gas feedstock is essential to keep Europe’s petrochemical and other energy intensive industries competitive,” they assert. The alternative -- industrial decline, in which the petrochemical sector in Europe heads down the same long-term path as other sectors suffering from high costs and overcapacity, such as the European car and steel industries – would be “almost too horrible to contemplate.”

Links:

http://ec.europa.eu/energy/consultations/doc/com_2013_0169_green_paper_203

https://www.foeeurope.org/sites/default/files/publications/foee_shale_gas_uncon

<http://cib.natixis.com/flushdoc.aspx?id=67884>

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