

## Shale fuelling a looming energy credit crunch

The financial woes of the US' largest unconventional gas players could not only destabilise the energy sector, they pose a threat to the wider economy, argues Dr Ruud Weijermars\*

THE US' towering shale-gas firms, led by the country's second-largest producer, Chesapeake Energy, are under severe strain – and their financial problems pose a growing threat to supplies in the world's largest energy market. If things go wrong, the fallout could bring more turmoil to a fragile global economy.

It's a story in which these firms are the victims of their own success. Soaring shale-gas production in the past five years has created a glut. And with output continuing to rise, exceptional price volatility in the US and Canadian natural-gas markets has pushed nearly all North American shale-gas operators closer to the brink of failure. Henry Hub prices have collapsed to far below the cost of production.

Indeed, the cause of the price collapse is not cheap production methods, but oversupply in an isolated North American market. Gas producers have effectively been subsidising the gas bills of US gas consumers over the past few years. Naturally, producers are losing money in such an imbalanced business model.

The oversupply of natural gas in the North American market itself is due to easy and lenient credit facilities for US and Canadian shale-gas independents, which allowed them to keep drilling even when the business case to do so didn't exist. When natural-gas prices started their steady rise at the turn of the century, fast and cheap money was poured into the emergent North American shale-gas players such as Chesapeake and Canada's Encana. The volume of investments in North American shale-gas projects peaked in the period between 2005 and 2008, when rising gas prices seemed a guarantee for high returns.

But after hitting an historic gas price peak of over \$12 per million British thermal units (/million Btu) in mid-2008, prices have since collapsed. Four years on, US wellhead prices are now trading at just a sixth of their 2008 peak value. Analysts agree that at such rock-bottom levels, none of the US shale-gas producers can make a profit. Instead, their income from operations has worsened every year since 2008, and they face huge problems with cash-flow, which can only be supplemented by raising money from new financing sources.

Alas, these funding sources are drying up, too. The risk profile of the shale-gas business has simply become too high for any further debt and equity financing to be feasible. The funding gap faced by the 20 major US shale-gas producers alone (there are around 45 companies in total) amounts to about \$30 billion for 2012. New share issues have floundered. Some firms have turned to volumetric production payments (VPPs), whereby investors are repaid in production; or asset sales. But these are now stagnating, too. Chesapeake saddled itself with 10 major VPPs, now amounting to over \$6 billion, or around half the company's market

capitalisation. Chesapeake's VPPs, together with senior notes debt of nearly \$11 billion, and around \$5 billion in bank credit facilities, bring the firm's total debt burden close to twice its present market value.

Meanwhile, the bonanza years that saw ExxonMobil, BHP Billiton and others snap up shale-gas producers at premium sale prices are over. The value of shale-gas acreage has plummeted. It's become a fire-sale climate – which makes it even more difficult for companies like Chesapeake, which wanted to raise up to \$12 billion through asset sales this year alone, to realise any effective deleveraging programme.

### Time bomb

If it looks perilous now, just wait. US shale-gas investors should be prepared for yet another dangerous trigger of asset value depreciation. The time bomb ticking below their shale-gas assets lies in the Securities and Exchange Commission's (SEC) reporting guidelines, which strictly requires shale-gas resources to be economically producible to classify as proved reserves. If depressed gas prices make the production sub-economic, these proved reserves need to be technically downgraded and instead must be classified as contingent resources. Such a downgrade would pull the asset-rug from beneath many struggling gas companies: proved reserves provide established asset value and collateral, but contingent resources do not.

So far, the SEC hasn't enforced its own guidelines. By choosing not to, the problem for shareholders of companies like Chesapeake has only been delayed and perhaps worsened. Proved reserves that are downgraded to contingent resources must be financially impaired on the company's balance sheets. Unless natural-gas prices recover quickly to well above \$5/million Btu – the break-even threshold for much shale-gas production – the collateral value for investors will soon evaporate. No one, though, sees much of a recovery in prices until 2015. If due diligence is finally applied, the assets of firms like Chesapeake will be rendered almost worthless – and the risk premium for shale-gas debt capital, already on the rise, will soar even higher.

It's not just gas producers in the US who face these new straitened times. Rising costs across the energy sector are making the entire business model riskier. Don't think renewable energy can easily provide a way out of the dilemma, either. For now, it only manages to compete with fossil fuels or older forms of power generation because of subsidies and guaranteed feed-in-tariffs (FITs). But with governments' sovereign credit ratings under pressure, fiscal austerity measures leave little room to support an

ambitious and costly energy transition. The erosion of subsidies for renewables and the evaporation of FIT income has already led to a wave of bankruptcies among solar and wind power suppliers, both in the US (Solyndra, Redco) and elsewhere (Q-cells, Germany).

This troublesome trend won't just affect American shale-gas suppliers, or the US economy, either. The need for big, costly energy projects around the world is growing. Much of them will extract fossil fuels, which ExxonMobil, for example, projects will still account for more than three-quarters of primary energy supply in 2040. The share from oil and gas will grow, not decline, over the intervening years.

And yet, because we are still in the early stage of the transition to renewable energy sources, fossil-fuel prices can make or break the recovery of fragile economies. But the easy oil- and gasfields – with low production cost and low technology risk – have nearly all been developed. Today's oil and gas operators spend more money to lift more oil and gas than ever before. They inevitably face higher economic risks as commodity prices become more volatile.

That's developing into an investment problem. The International Energy Agency reckons that the world needs to invest \$38 trillion in energy supplies between now and 2035 – equivalent to \$30 billion per week, most of it to be spent on these ever riskier oil and gas ventures. Finding investors willing to take a gamble is not the only problem.

The rising premium for riskier energy projects threatens to depress the global economy. A staggering 5% of the world's \$63 trillion GDP in 2011 was comprised of consumer payments for oil supplies, and the trend is still rising. Last year, oil-importing nations jointly transferred \$5 billion per day to oil exporting ones – almost double the daily rate of \$2.2 billion that flowed from oil importers to exporters in 2005. A recent World Bank study predicted that a further rise in oil prices now may drag down global GDP by between 2-10%.

Cumulatively it all makes for a worrying outlook. Energy risk is on the rise and investors are becoming more wary. The vulnerable global economy can barely cope with pricey oil and gas. Yet, as the US shale-gas sector shows, energy producers can't guarantee returns when prices tumble, and easy credit evaporates. It is an imbalance that could get much worse before it gets any better. ●

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