

UNCONVENTIONAL GAS: PRODUCER PICKLE OR CONSUMER CURSE?

Gas producers have a problem. Demand is down and supply is up, largely thanks to breakthroughs in unconventional production across America. More output could potentially follow in Europe and Asia, threatening to turn the gas world on its head. But there is a catch: should this prove to be a false dawn for unconventional production either on cost or ecological grounds, then consumers are riding for a fall. Turning the screw on producers is easy in a lax market, but if fundamentals tighten, producers will assuredly take their vengeance.



Russian President Medvedev writing 'Good Luck!' on the Nord Stream pipeline, 10 April 2010

A couple of years ago, gas producers were sitting pretty. Gas was a seller's market with prices rising sharply on the back of soaring oil prices. If this was the case for 'old fashioned' pipelines linking producers to consumers in regional markets, then those playing the global Liquefied Natural Gas (LNG) spot markets were extracting even higher prices. Burgeoning demand and tightening supply had producers dictating *price* and *politics* to consumer states – all of whom were desperate to meet demand and increase diversity and elasticity of supply.

That was then. Fast forward to 2010, and the narrative could not be more different. Gas is now an archetypal 'buyer's market' thanks to two new headlines. The first was the recession; global gas demand has been cut by 3% according to the IEA in 2009, with European demand sliding 7%. The sec-

ond is that a swathe of new gas all came on stream at exactly the wrong time for producers – be it pipelines, LNG, or more critically, breakthroughs in 'unconventional gas' production. The US has been the main mover in this regard through its prolific shale gas output and is now the largest gas producer on earth surpassing Russia's 600bcm/y in 2009. Australia comes a close 'non-conventional' second given coal bed methane (CBM) production, and things *could* get even worse for producers should seismic estimates of 921tcm of unconventional gas ever get turned into actual global output. At five times the amount of proven conventional reserves, the impacts could indeed be genuinely 'seismic' for all.

To say it was not supposed to be this way for producers would be an understatement. In the Atlantic Basin the US is not

only saturated in gas, it is starting to think about exporting its excess supply onto global markets. The picture in Europe looks similarly grim. With Russian, MENA, African, and Scandinavian supplies flooding the market, prices have been dropping nearly as fast as demand. This has already made the 'oil index' link look a little shaky on price formulations; it will look even shakier if Europe starts to develop its own non-conventional reserves. But what is getting producers most agitated is that the Pacific Basin has also taken a demand hit. This has left Asia-Pacific with ample gas supplies, and the two key markets of the future – China and India – are rapidly working out which way 'arbitrage' will be played: Russian, MENA, Central Asian, African, and Australian suppliers will not only have to compete with each other for market share, but do so against upturns in unconventional output thanks to Asia's new found geological edge.

But we should be wary not to consign the gas heavyweights to the scrapheap. They are in for a rough ride in the months and years ahead, but consumers must be very careful not to overplay their hands by turning the screw too quickly on producers. This could trigger exactly the kind of supply side response nobody wants. Algeria has signalled its desire for some kind of supply side action; making supply cuts, let alone forging some kind of cartel remains a tall order in the midst of a gas glut, but the initial warning shots have been fired. And what is certainly much more credible is that demand could rebound quite sharply in non-OECD markets as supply side in-

vestment falters. The market could thus tighten considerably quicker than many expect, particularly as it remains far from certain that unconventional gas can really be made to fly in Asia and Europe over the next decade. Should it prove to be a false dawn for unconventional gas, consumers would be well advised to tread more carefully now to avoid the wrath of producers in future. If nothing else, commodities tend to have a distinctly cyclical quality.

Basin blues

But before we get too far, it is worth recapping how producers got into their current predicament. The recession was bad, and undoubtedly worse than gas producers had thought, but it has been the speed of shale gas production in the US and the prospect of future non-conventional output that has raised the secular cause for concern. The likes of Qatar that invested heavily in LNG trains in the early 2000s had little clue that shale gas would be lurking quite so readily around the corner – clearly not, or producers would not have another 80m/t of LNG ready to roll this year. Yet with the emergence of new technologies, America has produced the equivalent to 40m t/y of LNG since 2007 in the non-conventional sector. In ball-park terms this equates to half of US gas needs, and what is more, this has been done at a highly competitive breakeven price of \$3-7 per MMBtu. 'Unconventional' has thus become distinctly conventional as far as the US is concerned.

The resulting 'gas glut' has already seen Henry Hub (i.e., US gas market) prices slip to \$4 per MMBtu, but the more significant fall out is that producers have lost what they saw as a 'banker' LNG market. Even if you managed to sell gas to the US, you almost certainly would not like the price right now. This leaves Europe as the export market of 'choice' in the Atlantic Basin. The problem is that too many suppliers are now chasing too little demand. With Russia, MENA, Scandinavia, West Africa, and Central Asia all clambering to maintain European market share, excess supply is likely to top 100bcm this year. When we consider that the IEA has only forecast European demand growth of around 0.8% a year for the foreseeable future, it is easy to see why Brussels is relatively laid back about 'security of supply' projects such as Nabucco, and indeed, why European utilities are starting to turn the contractual tables on Gazprom to slowly break the oil-index link. Eon, Gdf-Suez, and Eni

left Gazprom no choice but to allow for a far greater spot component in its long term contracts (around 15%). Russia will certainly be hoping that political linkages with Germany and France can offset commercial realities from driving down prices further – but in theory, projects such as Nord Stream should now be in grave danger. Indeed, when Russia is rolling out the red carpet to Ukraine in order to patch up energy links, you know things are not quite right. Buttering up Poland, well, that is just in an entirely different league.

This is all a far cry from 2008 when Gazprom had forecast gas prices in Europe would triple to around \$1,500 per 1000 cubic meters on the back of rising oil prices, not tumble to about \$300 last year, and even lower into 2010. Arbitrage was supposed to be a game played by producers as gas markets tightened between East and West, not by pesky consumers negotiating down long-term Gas Purchase Agreements towards lower spot prices amid flooded markets. Should Europe actually start to develop its own unconventional supplies in Poland, Romania, France, Germany, Hungary, and Austria over the next decade where ExxonMobil, Talisman, ConocoPhillips, and Chevron are busily working, it would probably be fair to say all Atlantic Basin bets are off.

The added snag for producers is that the odds in the Pacific Basin also are not looking quite so good either. With Atlantic Basin demand collapsing, producers only had one default option to play: Asia-Pacific. Qatar has been one of the quickest to shift focus given its determination to sell 77m/t of LNG onto global markets: it is now on the brink of increasing its LNG supplies to India by 4m/t and a further 10m/t to China, adding to the 5m/t it already sends to Beijing. This is an obvious fit, not least because Chinese authorities have already said that they want gas to account for at least 10% of their energy mix by 2020.

This looked like a tall order a couple of years ago, but China can not only draw on cheaper LNG than originally envisaged, it has been the main mover in securing Australian CBM supplies, so much so that it has even been able to mothball initial LNG investments agreed with Canberra in 2007. If we add Turkmenistan and Burma into the Chinese pipeline mix, Beijing is well placed to leverage its buying position amid softening demand in South Korea, Taiwan, and Japan. To ratchet up the pressure even

further, China has earmarked 30bcm of gas to come from its *own* unconventional reserves in future. India and Indonesia will follow suit in this respect.

But irrespective of how unconventional production develops in Asia, it is clear that enhanced supply options come as another bitter blow to Russia. Gazprom had assumed that it would be able to sell expensive Siberian supplies directly into the Chinese market, which would have been used as leverage over other Asia-Pacific consumers, and more importantly, over its core European demand base. Instead Moscow will now be squeezed by Brussels and Beijing over price and supply, and faces the unenviable choice of either developing costly gas fields such as Shtokman, or leaving gas in the ground and foregoing market share.

Gas back guarantee

In effect, consumers have been dealt a strong geopolitical hand from these subterranean shifts. The US can boast greater energy independence over troublesome producer states such as Venezuela and Iran. This *will* be used when needed. China also realises that greater supply to Asian markets is a good thing, not only to keep producers on their toes by tempering Beijing's 'blind chase' for natural resources, but to avoid a costly tussle with India to maintain energy supremacy in the 'Chindia race'. It may also help to allay US-Chinese fears over resource contestation and control of sea lanes in future. Europe has also gained; greater elasticity of supply to redress Russian import dependency (particularly in Eastern Europe) is important, as is time to get its domestic energy policies in order. Conversely, Russia, Iran, Venezuela, and Algeria are not yet a bust flush, but they clearly have major cause for political concern, as do Gulf States, which can only rely on lower production costs to keep their heads above water for so long. At the very least, producers will have to 'play nicer' with IOCs assuming that they now have access to swathes of shale gas reserves, rather than being starved of resources. Producers no longer hold quite such a sacrosanct prize of access to reserves.

So where is the catch for consumers? In a world of plentiful gas supply, they do not even have to bother spending so much on renewable power supply now. Europe had long figured out the environmental targets were going to equate to more gas, less coal, and limited renewables provided they could get hold of enough gas to fill

the pipes. Meanwhile things have progressed so far in the US that Congress is starting to entertain the notion of phasing out coal in favour of gas; it would be less economically painful than building new nuclear or ramping up renewables to reduce emissions. Some are even talking about the gasification of US transport to clip 'nasty' oil producer's wings.

But before we let our imagination run too wild in this supposed world of 'oil on gas competition' between Saudi Arabia and Russia, it is important to remember that much of the analysis on unconventional gas is grounded in potential reserves, not actual output. We remain a long way from entering a new energy world order where producers simply do not matter and unconventional gas is a guaranteed bet. If anything, such grandiose visions point us towards the main catch here: the world is going to need gas, and lots of it. Europe needs it for environmental imperatives, Asia to drive growth, the US to reduce its paranoia about energy independence, and perhaps more importantly in MENA, West Africa and Latin America to meet domestic demand and support economic diversification. At the expense of committing an act of heresy, consumers should thus seriously question the assumption that gas supplies will really be as plentiful as believed in the long term. Pulling the wrong moves now, could certainly haunt consumers in future. As the latest 'gaspac' meetings in Oran, Algeria, attest, producers still have 'red lines' that they do not want crossed.

Line in the sand

Algeria sounded the loudest alarm bells at the latest gas gathering; it wanted spot market cuts and greater cartelisation on the agenda. Qatar and Russia may well have said 'no' – not least because they do not want to do the heavy lifting required to set a floor under spot gas prices – at least not yet. But assuming that producers do not care about spot prices *per se*, would be a mistake: yes, the spot market is still relatively small, and yes, prices have plummeted without producers going into a total spin, but it remains unclear how *long* producers are willing to take the hit, or indeed, what they would do if low spot prices pave the way towards further contract renegotiations on long term supply contracts. This is where the bottom line really counts for Gazprom, and it explains why Moscow was keen to stress that the oil index link *should* be maintained on its core pipelines. The fact that Ukraine was unable to break this

link by only getting discounts at the rate equal to the reduction in export duty for Russian gas, is telling. It strikes at the heart of Russian concerns that weak spot prices could create further arbitrage potential on long-term contracts. Algeria has exactly the same concerns over its new Medgaz pipeline feeding Southern Europe.

Should consumers keep turning the screw on price, they stand a good chance of finding that at subsequent gaspec meetings, it is not only Algeria calling for supply restraint on spot and traded markets in order to recalibrate the market back towards producer interests: at the very least, it would be a quick way of taking the most evident sting out of the arbitrage tail. Assuming Qatar sells new LNG under long-term supply contracts to Asia, they would probably have relatively few qualms about putting a floor under spot prices to safeguard long-term receipts (particularly as US pressure on its Gulf ally to resist such moves, is now less acute). It would also help producers to send more credible price signals rather than perpetually competing for diminishing receipts in a flooded market.

Clearly this is a long way from being a fully fledged cartel, but if producers start taking steps towards supply restraint now, consumers might be in for a rougher ride should fundamentals tighten. Unsurprisingly, upstream, investment is already being cut; Russia will hold back on making any major commitments until demand returns and prices firm, while Qatar has formally signalled that it will be holding fire on further prospects. Libya is becoming increasingly cautious in relation to upstream foreign investment, while Algeria is very nervous about squandering precious reserves in a buyer's market. Iran will continue to put its nuclear plans ahead of hydrocarbon development and Iraqi output remains stymied by political divisions. Previous LNG heavyweights such as Malaysia are not in a credible position to recapture lost ground either, while political risk remains considerable in Nigeria.

This is before we take into account depletion of pre-existing gas fields, or indeed the prospect that rebounding growth in non-OECD and indeed OECD markets could still be far stronger than expected if the economy is handled well. Rising domestic demand across many of the world's largest gas producers should not be discounted, particularly where subsidies remain strong and price signals weak, nor should increased lethargy

from consumer states no longer willing to provide the political support needed to bring new production on stream. Asia remains unlikely to buy into a laissez-faire approach, but Europe could well do, particularly if America stops pushing them to take security of supply seriously.

Spread bet

The upshot is that despite the current glut, consumers could face nasty shock before 2020 if unconventional gas fails to deliver. The signs are obviously very promising in the US, but even here, the Environmental Protection Agency is starting to raise ecological concerns over non-conventional production. These same concerns will be the main hurdle to unconventional production in Europe where tightly packed populations will be less than enthralled by the dirty processes associated with hydraulic cracking. Cost will also be an issue, particularly in markets where resources are located at greater depths such as Germany, Hungary, Austria, and Ukraine, and will almost certainly be a key factor in Asian production. Ultimately, as the energy industry has admitted, 'shale gas, is not shale gas, is not shale gas': the terrain, and therefore the costs, remain very patchy from a global perspective at this stage.

The blunt truth is that no one knows how unconventional gas will pan out yet. If it comes off, producers are obviously in deep commercial and political trouble, but this is a risky proposition to table, for if consumers have squeezed producers too hard in the interim towards some kind of supply side response, they better hope that unconventional gas can truly deliver the goods. If it cannot, supply will be tight and conventional demand high, not least because other forms of generation will have been sacrificed on the 'holy grail' of unconventional gas. Take a bet on unconventional gas? Yes. Make it a one way bet? No. Not unless you can live with the prospect that producers could be back on top one day, and back with a vengeance.

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