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News, analysis and opinion from Petroleum Economist

Shell banks on Chinese gas

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Anglo-Dutch major spuds China's first shale-gas wells

China "the next big opportunity" for unconventional gas

SHELL and PetroChina have began work on the Fushun shale-gas project, after spudding the country's first such wells at the end of December. Shell, which signed a deal with the national oil company to jointly explore for shale gas in November 2009, says the advance marks "milestone progress" for development of unconventional gas in the country.

Its block, in Sichuan province, in China's southwest, covers 4,000 square km. Two wells have been spudded so far. Shell would not say when it expected first results from the wells, or how extensive the drilling programme would be.

The latest news follows several deals taking Shell into China's natural gas sector in recent years. In March 2010, Shell and state-owned CNPC jointly acquired Arrow Energy to develop a coal-bed methane (CBM, also known as coal-seam gas) to liquefied natural gas (LNG) project in Australia. The companies plan to export LNG to Asian markets including China.

Domestically, Shell may take advantage of China's vast CBM reserves – which could exceed 36.8 trillion cubic metres (cm), according to China's Coal Information Institute. Shell is assessing CBM prospects in North Shilou, in Shanxi province.

Shell and PetroChina have been working together to produce tight gas from the Changbei field in Shaanxi province since 2005. The field, which began production in March 2007, has conventional gas output of around 3bn cm/y, says Shell, and delivers to markets in Beijing, Shandong, Hebei and Tianjin.

Shell says the project is "the next big opportunity in China" and could produce enough tight gas to power 12.5 million Chinese homes.

Shell is also tapping into China's energy needs by developing tight gas with CNPC in the Sichuan basin. Shell and CNPC signed a deal in March 2010 to appraise prospects for developing tight gas in central Sichuan's Jinqiu block.

Although North America is "the cradle" of Shell's oil and gas activity, building up a portfolio of unconventional assets abroad – particularly in China – is "a longer term ambition", the company says.

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Soaring crude prices a 'threat' to global economy; gas prices steady

Crude prices are firm amid a sharp draw in US stocks and renewed optimism about the global economy.

Front-month WTI was trading at $90.26/b in New York on 6 January, as encouraging job data from the US and persistently cool weather in the northern hemisphere helped swell prices. Several investment banks now forecast that crude will breach $100/b in coming months.

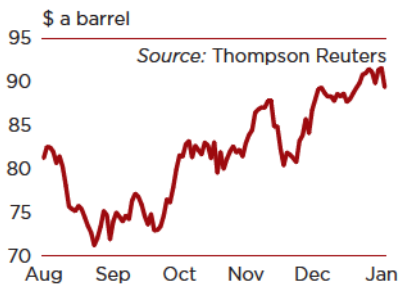
In the US, a sharp 4.2m barrel draw in crude stocks more than doubled the 2m barrel drop expected by analysts. Crude stocks were at 335.3m barrels as of 31 December 2010.

However, the International Energy Agency (IEA) has warned producers that continuing high oil prices are a "threat" to the global economic recovery and signalled that Opec must boost its production to keep crude prices within an affordable range. Crude oil prices hit $95/b on 3 January for the first time in over two years.

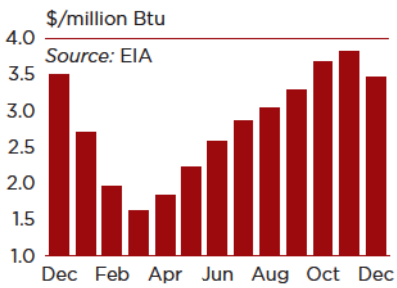
Despite Opec's decision to leave oil production quotas unchanged last month, the IEA says a "wake up call" is needed to curb high oil import bills, which could stunt the global economic recovery.

US natural gas prices are holding firm, trading at $4.5/'000 cf on 6 January in New York. Stocks have also dipped in the US, to 3.2 trillion cf for the week ending 24 December.

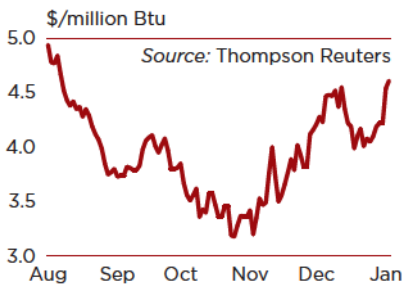
Spot WTI crude, Cushing



US gas in underground storage



Spot natural gas, Henry Hub



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Shell banks on Chinese gas

Shell has been increasingly focusing its portfolio on gas, which, by 2012, will "likely make up around half of our global production". The major expects its shale- and tight-gas production to double between 2009 and 2014, to 400,000 barrels of oil equivalent a day.

Shell is adjusting its portfolio to respond to the shifting energy landscape as more emphasis is placed on gas production to limit global warming to within 2°C. On average natural gas releases around 50% less carbon dioxide when it burns than coal.

As the biggest polluter in the world, with one of its fastest growing economies, China's energy policy is crucial to cutting carbon emissions. Shell aims to work with Chinese companies domestically and internationally to develop more conventional gas and unconventional gas projects, and to "bring cleaner energy back to China in the form of LNG".

Chinese gas demand will grow at almost 6% a year for the next two decades, says the International Energy Agency. And globally, unconventional gas production will make up one third of the growth in the gas sector, with shale-gas and CBM production from China and Australia providing significant contributions.

China hopes to triple gas use to account for 10% of energy consumption by 2020, as part of its 12th five-year plan. The country's National Petroleum and Chemical Planning Institute says rapid development of China's unconventional-gas reserves is essential to avoid a 5bn cm/y gas shortfall by 2015.

The country needs to develop its unconventional gas industry, or face huge import bills. China has relatively small conventional gas resources – estimated at 2.8 trillion cm by Cedigaz – so the government is turning to its potentially vast unconventional resources to boost production.

The government reckons shale-gas reserves could top 150 trillion cm and wants output to reach 30bn cm/y by 2020. Last year, it signed up to the US-sponsored Shale Gas Initiative, a forum for sharing techniques and technologies to develop shale-gas reserves around the world.

Sinopec has also been looking for shale gas since 2009 and has forged a deal with Chevron to assess resources near Guiyang City, in southern Guizhou province.

State-owned Sinopec aims to have the capacity to produce 2.5bn cm of unconventional gas by 2016, including shale gas and CBM. Sinopec has identified six, large prospective areas and has begun drilling an unnamed seventh area.

Great potential

So the potential for unconventional production in a country with limited conventional-gas resources is great. Wood Mackenzie, a consultancy, predicts domestic unconventional production will reach 112bn cm/y by 2030, equivalent to a quarter of forecast demand. The six shale areas Sinopec has identified as having the greatest shale gas potential are in Qianxi, Chaiwopu, Shengli, Huangqiao, Ordos and Ningguo. The company is assessing the resource potential in these areas.

Sinopec says preliminary work points to "great prospects" for unconventional-gas development in China now that new technology and know-how from international operators is arriving to unlock the resources. ● **Helen Robertson, London**

News

US shale gas: new year, same old story

Drilling incentives drying up

Output to fall by mid-year

IF US Gas producers were expecting market conditions to improve with the new year, they have been sorely disappointed. Instead, 2011 promises to bring more of the same: an oversupply of gas, flat demand and anaemic product prices. Although this triple whammy has yet to affect drilling activity in the country's gas-rich shale plays, that's likely to change.

Just a few years ago, gas shortages and record fuel prices combined with technological advances that made shale-gas production economically attractive to trigger a drilling boom in the US, which has the largest shale reserves in the world. But then the economy went into a tailspin, reducing demand just as gas supplies from these prolific shale plays began pouring into the market. By the time 2010 drew to a close, wellhead prices were hovering around $4/'000 cubic feet (cf) – a fraction of the record prices reported just two years earlier.

Still, drilling in the shale plays has remained brisk, driven by incentives unrelated to market conditions. Many operators have had to drill to keep generating cash flow, to fulfil the terms of joint-venture agreements or to initiate production to prevent leases from expiring prematurely. Aggressive hedging strategies have also provided protection against low product prices. In some unconventional plays, such as the Marcellus and Fayetteville shales, which have high production rates and low drilling costs, producers can still eke out a profit at prices that would put some conventional gas projects in the red. These drivers will begin to diminish in 2011.

US oil and gas prices