

U - Gas News Report

Unconventional Gas Activities in the World

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by Constancio Silva

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CBM

EXPLORATION

CHINA:

Green Dragon Gas reports higher China CBM resources

China focused coal bed methane player, Green Dragon Gas has announced an increase in its estimated reserve values as at 31 December 2013, as provided by independent reserve engineers Netherland, Sewell & Associates, Inc (NSAI). According to the company net 1P reserves increased 113% to 126 Bcf, net 2P reserves was up 22% to 382 Bcf while net 3P reserves decreased by 5% to 2,382 Bcf. Total original gas in place of 25.2 Tcf on six blocks has been reported.

According to Greed Dragon, the increase in audited reserve numbers incorporates the 1300 wells approximately drilled by the company's partners across the acreage.

"Drilled wells not in commercial gas production as of 2013 year-end, were not included by NSAI in their 1P and 2P categories. As the wells de-water and commence commercial gas production, the related reserves will migrate into the 1P and 2P category respectively. As announced in October 2013, the Company estimates its total reserves (including such wells) to be 300 Bcf in 1P and 600 Bcf in 2P which it expects to be realised as the required infrastructure is built over the next fifteen months," the company said.

As announced last month, the company's partner CUCBM expects to spend up to \$250m in completing this objective.

"The company is going through a transformational growth trajectory and this reserve audit values the paradigm shift at a static point, 31 December, 2013. With an equity interest in over 1800 wells which are in varying stages of commerciality, the reserve migration towards 1P will continue. The material transactions with CNOOC, CUCBM, PetroChina, CNPC and resulting beneficial economic benefits to Green Dragon from over \$1 billion of deployed capex have been included by the independent reserve engineers when concluding the net present values in this audit of the forecasted revenues," Randeep S. Grewal, Chairman and Founder of Green Dragon Gas, commented. (May 12, 2014)

05/14/2014

SHALE GAS

EXPLORATION

INDONESIA - USA:

PGN to acquire shale gas block in US

PT Saka Energi Indonesia, a subsidiary of state-owned gas firm PT Perusahaan Gas Negara (PGN), is set to acquire Swift Energy Company's shale gas block in Fasken, the United States, this year. Saka is expected to complete the transaction to acquire 36% of participating interest in shale gas block in Fasken on June 30 with an investment of US\$175 million, kontan.co.id reported. The Fasken block is located in Eagle Ford, Houston, Texas.

Saka's operational director Tumbur Parlindungan said that the expansion was aimed at gaining knowledge on shale gas technology that Indonesia is yet to acquire. He also said that this expansion would guarantee gas energy supply in Indonesia in the long run even though it would mean that the country needed to import the gas from the US. Tumbur said that the US government planned to construct a LNG plant in 2018 and Saka would be ready to supply LNG from the shale gas block in Fasken to Indonesia. (May 9, 2014)

05/12/2014

ROMANIA:

Romania not to exploit shale gas in next five years

Romania will not exploit shale gas at least in the next five years, yet efforts must be made to secure its energy independence by using the domestic production, Prime Minister Victor Ponta told, explaining that **"in the next five years, Romania has to set in place the best performing and most up-to-date environmental protection legislation**, so that we may have all the guarantees in place if shale gas will really be exploited in five years' time."

According to him, shale gas exploitation has to be put in the context of Romania securing its natural gas demand from its own resources. "If we do not have gas from domestic production, we will buy it from Gazprom, because there is no other gas producer in the region selling gas," Ponta said, stressing that "Romania securing energy independence for itself and Moldova is such important an objective that by all means, yet in compliance with the highest environmental standards, but by all means to have such resources from the Black Sea or elsewhere in Romania, we have to use them." "We should not ignore them so as to come to depend on Russia for natural gas," underlined the head of government.

Romania is thought to have 1.44 trillion cubic meters of unproved technically recoverable shale gas resources, enough to fuel its energy needs for about 100 years, according to the U.S. Energy Information Administration. The Bucharest authorities lifted its moratorium on shale gas exploration one year ago, and the country has high hopes of becoming one of the biggest gas producers in the EU. Yet, locals from villages with exploration potential have been protesting against the exploration ever since. Chevron has had to suspend its activities each time due to protests. (April 25, 2014)

04/25/2014

CHINA:

Shale gas exploration proves difficult for private firms in China

While state firms such as Sinopec have achieved large-scale production of shale gas in China, **private firms are facing a bottleneck in exploiting the new natural gas**, according to Guangzhou's 21st Century Business Herald.

The Ministry of Land and Resources (MLR) announced in March 2012 that shale gas production in China will reach 6.5 billion cubic meters in 2015, and to achieve the target, the MLR called for bids on 20 shale gas locations. However, **many of the private firms that won the bids have yet to begin exploration.**

The firms are mainly concerned with the high risks involved because they won the bids by paying high prices, a market observer told the paper. He added that **the majority of companies that participated in the bidding did not have any experience in shale gas exploitation, but wanted to win the bids because of the government's favorable policies.** These companies have since found that exploitation is not as easy as they thought, the market observer added.

In addition, the **government was lax** as it did not fully evaluate the target locations and simply called for tenders similar to a regular commercial development. Sun Jian, general manager of the Sinopec Jiangnan oilfield, said that the state-run oil giant spent 2.5 billion yuan (US\$399.5 million) before it discovered shale gas in Fuling district.

Many companies, including Sinopec, have found that a lack-of experience in the exploitation of shale gas is costly, while there is currently no guidelines for them to follow. The paper added that Sinopec, which has the best capability for exploitation, is still acquiring the skill, let alone the bid-winning private firms with zero experience.

Between June 2013 and January this year, the MLR, the National Development and Reform Commission, the National Energy Administration, and other government agencies found that only one or two companies had made any progress in the exploitation, **while the majority of the bid-winning firms had not shown any substantial development.** During the two rounds of auctions, over 20 companies won the bids, but only Sinopec has produced the new natural gas so far, the paper said. (April 29, 2014)

04/30/2014

PRODUCTION

UNITED KINGDOM:

British government gives shale gas green light

The British government said it's time to get ready for shale gas after a supply chain report showing **huge potential economic benefits to the country's economy** recently. Shale gas could create a new onshore supply chain market for equipment, services and skills across a number of industry sectors worth up to 33 billion pounds (55 billion U.S. dollars) by 2032, creating over 64,000 jobs, according to the global advisory company EY's report published by trade body United Kingdom Onshore Operators Group.

The report set out industry sectors that could benefit from shale development, which include: specialized equipment and skills for hydraulic fracturing operations worth 17 billion pounds; Waste management, storage and transportation requirement of 4.1 billion pounds; Steel requirement of 2.3 billion pounds; and New rig manufacturing industry worth 1.6 billion pounds.

British Energy and Climate Change Secretary Ed Davey said: "Over the past year the scientific evidence has allowed us to conclude that shale production can be managed effectively as long as best practices are implemented and enforced." British government also announced 2 million pounds competition to support innovative ideas to produce or explore for shale gas, particularly focused on projects reducing environmental impact. (April 25, 2014)

04/25/2014

SUPPLIES - IMPORTS - EXPORTS

UNITED KINGDOM:

Gas from controversial shale program in U.K. may be ready for grid

British shale gas explorer Cuadrilla could start testing delivery rates through the nation's transmission system, Chief Executive Francis Egan said. He added that gas from shale deposits in the country could start flowing through the nation's transmission system by the end of next year, albeit at low volumes. "After the initial flow test period, which is up to 90 days, if the flow rates look good then we would want to tie the well into the gas transmission over 18 to 24 months," he said.

The company was the target of major demonstrations last summer when its work in the southern village of Balcombe was viewed as a prelude to hydraulic fracturing. In January, Cuadrilla sent a letter to village residents saying it was applying for an extension to a license for exploration in the area but found natural fractures in Balcombe's shale that may prohibit fracking. In March, the company said it believes there are **200 trillion cubic feet of shale natural gas in the Bowland basin** in Lancashire. (May 12, 2014)

05/13/2014

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Best regards,
The UGOS Team

UNITED STATES:**Siemens strategy is fueled by U.S. shale gas**

Germany's Siemens AG is making waves across Europe with a management restructuring at home, a possible bid for parts of French rival Alstom SA and a billion-dollar purchase from Britain's Rolls-Royce Holdings PLC. But the **industrial conglomerate's focus is the booming U.S. energy market.**

Faced with sluggish conditions in Europe, Siemens Chief Executive Joe Kaeser wants to tap the U.S. shale-gas revolution unleashed by hydraulic fracturing. **Siemens supplies equipment to companies that extract and ship natural gas, generate power from the fuel and use vast amounts of electricity for manufacturing.**

He also sees opportunities to compete with General Electric Co. on its home turf as the U.S. rival pushes into Europe. Mr. Kaeser is considering how to trump a \$17 billion bid by GE for Alstom's energy business that would put the U.S. company in Siemens's backyard. Mr. Kaeser launched his U.S. energy assault recently by naming Royal Dutch Shell PLC strategy head Lisa Davis, an American, as the new chief of the power business for Siemens. Ms. Davis will lead the operation from the U.S., a first for Munich-based Siemens. **The U.S. is now "the place to be" in global energy and would become Siemens's center of gravity,** Mr. Kaeser said.

Siemens is following its customers as companies involved in U.S. shale-gas extraction prepare to buy more equipment of the sort Siemens builds. Spending by European energy companies on big-ticket equipment is declining, meanwhile.

A glut of U.S. gas output has pushed down prices. As a result, **U.S. sales of gas-powered turbines that generate electricity are expected to pick up in the coming decade** as utilities shift from coal to cleaner, less-expensive shale gas. North America is emerging as one of the world's strongest markets for gas turbines, alongside the Middle East and Turkey, said William Schmalzer, an analyst at Forecast International. **European sales won't be as strong,** he said.

The research firm anticipates that 12,054 gas turbines with a value of \$218 billion will be sold world-wide in the coming decade. GE held 49% of the global gas-turbine market last year, according to research firm McCoy Power Reports. Siemens held second place, with 23%, followed by Mitsubishi Hitachi Power Systems, with 17%, and Alstom, with 2%.

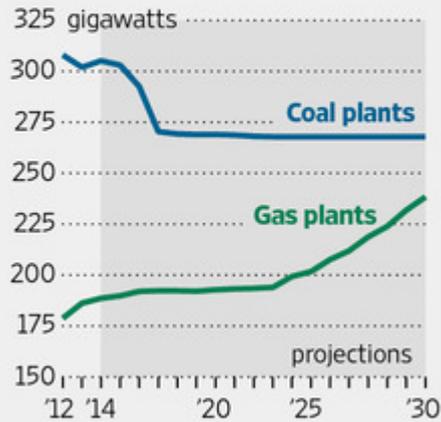
Small turbines used for fuel extraction and small-scale power generation is a business segment with strong potential. Rolls-Royce's energy unit, which Siemens on Tuesday agreed to buy for more than \$1.6 billion, specializes in such units. U.S. electricity demand recently started rising for the first time since the financial crisis hit six years ago.

Lured by cheap power, **U.S. manufacturers are taking work home from overseas and foreign companies are moving plants to the U.S.—particularly from Europe.** Germany's BASF SE, the world's largest chemicals company, said this month that it was considering building a \$1.4 billion plant in the U.S. to convert natural gas into propylene, a basic ingredient of many chemicals. Last year, Austrian steelmaker Voestalpine AG announced plans to invest more than \$760 million in a Texas plant to take advantage of inexpensive shale gas. Siemens and U.S.-based Midrex Technology Inc. will build the facility.

Europe's power market, meanwhile, has been hobbled as subsidies for renewable energies, such as wind and solar power, have eroded wholesale power prices. European utilities have tried to minimize losses by mothballing or decommissioning dozens of turbines with thousands of gigawatts in capacity. Few new fossil-fuel generators are planned in Europe for years to come. Even one of the world's most-efficient gas turbines is unprofitable, said German utility E.ON SE. The German government had to intervene last year to keep the Siemens-built unit running and guarantee electricity for its service area, near Munich. Europe's power crisis has hurt profits at utilities and their equipment suppliers. Alstom on Wednesday reported a 28% drop in profit for its fiscal year through March 31, **citing weak power-plant orders.** (May 8, 2014)

Catching Up

Projected capacity for coal-fired versus gas-fired plants for generating electricity.



Source: Energy Department
The Wall Street Journal

05/12/2014

WORLDWIDE:

Global shale market to boost to 17,201.6 bcf by 2019

The global shale gas market is expected to reach 17,201.6 billion cubic feet in 2019, showed a report by Transparency Market Research. The global production of shale gas will go from 10,138.2 bcf in 2012 to 17,201.6 bcf by 2019, **growing 7,9%**. The cost of production and contamination of surface water are expected to hinder the market growth in the near future, the study said.

Currently, only the US and Canada are producing shale gas in commercial quantities. Russia's richest shale oil source is the Bazhenov formation in West Siberia with total reserves estimated at 1.24 trillion barrels, of which only 74.6 billion barrels are currently considered as technically recoverable, according to last year's US Energy Information Administration (EIA) report. (April 23, 2014)

04/23/2014

CHINA:

Sinopec books shale gas sales of at least 1.0 bcm this year

Sinopec Corp has booked sales of shale gas of at least **1.0 bcm for this year** from its first commercial shale gas production area in southwest China, a local newspaper said. Stymied by the cost of drilling and complexity of tapping shale gas, China has struggled in its bid to revolutionize its energy supplies and unlock what may be the world's largest shale gas.

Sinopec has also set the prices of shale gas at the highest city-gate natural gas prices set by the government to attract more customers, although the government has said ex-plant shale gas prices are market oriented, the National Business Daily said. "In principle, China's shale gas pricing is market-oriented. But currently the prices cannot be set by the market or just based on costs, rather they are set at the highest city-gate natural gas prices for incremental gas volumes," the newspaper quoted Wu Gangqiang, a manager of Sinopec natural gas subsidiary, as saying.

According to China's natural gas pricing scheme effective from July, the prices of incremental gas volumes -- new volumes added from 2013 -- that will be set at 85 percent of alternative fuels, such as fuel oil or LPG.

Sinopec for the first time began pumping shale gas from test wells in commercial quantities in the Fuling area in southwest China last fall. Sinopec said in March it aims to develop shale gas production capacity of **5 bcm by 2015 and 10 bcm by 2017**. (April 25, 2014)

04/28/2014

SOUTH KOREA:

South Korea eyes more shale gas-based LNG from North America

South Korea will seek to import more shale gas-based LNG from North America to meet rising power demand amid tighter environmental regulations, the deputy energy minister told Platts. "Natural gas as a source of power generation needs to be increased to reduce consumption of coal [that is] blamed for greenhouse gas emissions. But at stake is its costs, [which are] much higher than coal-based electricity production," said Kim Jun-Dong, deputy minister of energy and resources policy.

"Import costs from the US are likely to be lower than those of LNG from the Middle East. The US shale gas boom is expected to bring down South Korea's LNG import costs," he said, noting that South Korea is paying higher prices for LNG from the Middle East under the "Asian premium." South Korea mostly buys LNG through long-term contracts with Middle Eastern, Southeast Asian and Australian producers at prices linked to oil. Long-term contracts usually keep buyers from moving their cargoes to other destinations, effectively eliminating the option of spot market trading.

State-owned Korea Gas Corp. plans to **import 3.5 million mt/year of LNG over 20 years** starting in 2017 from the Sabine Pass shale gas project. The country's second-biggest LPG importer E1 Corp. has a contract with US gas company Enterprise Products Partners to buy 180,000 mt/year of LPG produced from US shale gas starting from May or June 2014. Its bigger rival SK Gas is also looking to buy shale gas-based LPG from North America to help lower import costs.

South Korea's natural gas demand is forecast to grow by an average 1.7% annually to 35.3 million mt of oil equivalent in 2035, from 23.7 million mtoe in 2011, while its oil demand is expected to fall by an average 0.11% each year over the same period, to 99.3 million mtoe in 2035, according to MOTIE. The country's electricity consumption meanwhile, is forecast to nearly double to 70.2 million mtoe in 2035, from 39.1 million mtoe in 2011. LNG meets about 25% of South Korea's total electricity consumption, while coal and nuclear reactors account for 40% and 30% respectively. Oil accounts for 3%. The remaining 2% comes from hydraulic and renewable sources such as solar, wind power and fuel cell power plants.

"The best option for us is to run more gas-fired power plants with LNG import costs going down," he said. The South Korean government will lower consumption taxes on LNG and raise the tax on coal used for power generation from July 1, 2014. In another effort to boost clean energy consumption, South Korea is building in carbon capture and sequestration systems at coal-fired power plants, Kim said. "We cannot abandon coal as a source of power generation for the next several decades. So, the government has been investing to operate coal-fired power plants in a cleaner way that produces less emissions," he said. (May 9, 2014)

05/12/2014

COMPANIES

UNITED KINGDOM:

IGas & Dart Energy consolidation to create UK's largest shale gas firm

Excitement over Britain's increasingly high profile, yet early stage, shale gas industry has stepped up another gear. Within months of blue-chip energy firms making an entry into the nascent shale gas sector, **a share based deal between IGas and Dart Energy sees the consolidation of two of the play's largest acreage positions.** IGas agreed to buy Dart Energy through a premium priced, recommended share-based deal worth £117.1m.

Together the firms have over 1m acres in Britain's major shale basins, and IGas chief executive Andrew Austin says the deal puts the enlarged company "at the heart of unlocking Britain's energy potential". **"The transaction further strengthens our position financially, operationally and also significantly increases our licenced acreage as we seek to unlock the untapped energy resource that exists in Britain."** Dart chief executive John McGoldrick says the merger heralds a new era for the UK gas industry, as it creates a business of scale. "Success in the oil and gas business comes from scale, and the combination of Dart and IGas achieves that scale, creating a clear market leader with a vastly greater depth in terms of asset base, access to capital and operating capability, all of which will be critical to achieving long-term success.

Dart shareholders, who were set to access the London market with an AIM float this month, will hold around 30% of the merged company. Investors will receive 0.08117 IGas shares for each Dart share they own, which equates to 18.98 Australian cents per share and is a premium of around 51% to Friday's close on the ASX.

Crucially, the acquisition consolidates common interests in shale licenses that are now partnered with large oil and gas companies . The enlarged company has 13 licences that are being funded by GDF Suez, and two licences funded by French major Total. In February, Total completed a deal acquire a 40% of licences in Nottinghamshire and Yorkshire, in return for commitments to pay for drilling in the future. The consolidation of the respective interests of IGas and Dart will give the enlarged company a 32% stake in those licences. Meanwhile, via a farm-out agreed with Dart in October, GDF Suez paid almost US\$40m in cash and committed to drill programmes, in order to secure 25% of 13 licences.

The transaction also comes at a significant time, as drilling activity is expected to step up considerably in the coming years and the government will soon auction off new prospective shale gas licences through a onshore bidding round. (May 9, 2014)

05/12/2014

PUBLICATIONS

UNITED KINGDOM:

Baker & McKenzie report on shale gas in the UK

The UK has technically recoverable shale gas reserves estimated at 26 tcf and technically recoverable shale oil around 0.7 billion barrels. Although these reserves are significantly less than those of other major oil and gas producing nations that also have significant unconventional hydrocarbon resources, such as Algeria (707 tcf), Argentina (802 tcf) and Australia (437 tcf), it is hoped that the UK may enjoy a US-style shale gas revolution. Such a revolution would enable the country to decrease its reliance on oil and gas imports for energy generation.

The UK industry is facing some problems, including mature fields nearing decommissioning (leading to decreased production), increased levels of health and safety regulations and a rise in the taxation of profits from oil and gas since 2011. Shale gas development has also struggled with a lack of public support in the UK.

In a move to increase investment in shale gas, the UK government has created a package of incentives for both the public and investors. This package includes: a new shale gas tax regime which features an 'onshore pad allowance', reducing the headline tax rate from 62% to 30% for a portion of profits; and a promise that councils can keep 100% of the local taxes, known as business rates, that they collect from shale gas sites – double the current 50% figure. This is in addition to community benefits agreed with the industry of £100,000 per well fracked and a further 1 % of revenues if shale gas is discovered.

However, a US-style shale gas revolution still looks unlikely owing to the cost of technology, the location of shale basins in densely populated areas, competition from imported oil and gas and heavily subsidised renewable energy. Most significantly, exploration and exploitation is still at a very early stage with no wells commercially producing shale gas to date.

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For further information please see Baker & McKenzie's Shale Gas, an International Guide which provides a regional examination of shale gas operations and offers an analysis of local law and key contractual issues in ten "Hot Countries" for shale gas projects: Algeria, Argentina, Australia, China, Poland, Russia, South Africa, United Kingdom, Ukraine and the United States. (May 5, 2014)

Great Britain Shale Gas Basins



Technically Recoverable Resources (trillion cubic feet)

■ <1 tcf

■ 1-30 tcf

Note: The figures represent the technically recoverable resources in total for the North UK Carboniferous and South UK Jurassic Basins.

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05/05/2014

GAS HYDRATES

EXPLORATION

UNITED STATES:

Energy Department solicits research into methane hydrates, or 'frozen gas,' as energy source

The Department of Energy is soliciting for another round of research into methane hydrates, the potentially huge energy source of “frozen gas” that could step in for shortages of other fossil fuels.

The department is looking for **research projects on the North Slope of Alaska that could explore how to economically extract the gas locked in ice far below the Earth's surface.** DOE is seeking researchers to document methane hydrate deposits in outer continental shelf waters of coastal states.

The DOE anticipates federal funding of \$20 million over two years that could be leveraged into research costing \$80 million, according to its “funding opportunity announcement.” The department could award money for both methane hydrate extraction research and for documentation or just one of those two research areas, according to the announcement.

Methane is the main ingredient of natural gas. It comes from buried organic matter after it's ingested by bacteria or heated and cooked. The gas migrates upward, under high pressure and low temperature, and can combine with water to form methane hydrate. The Department of Energy calls methane a clean-burning fuel and an important bridge to a time when non-carbon sources will supply more of the nation's energy supply. Since no one has figured out the extraction puzzle, it's uncertain exactly how it could be used.

Critics say burning methane will exacerbate the world's greenhouse gas problem and contribute to warming. Unburned methane released into the atmosphere is 20 times more effective at trapping heat in the atmosphere than CO₂ but not as long-lived. (April 13, 2014)

04/23/2014