

U - Gas News Report

Unconventional Gas Activities in the World

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by Constancio Silva

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COALBED METHANE

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Magnum Gas & Power finds gas in Botswana CBM well

Magnum Gas & Power Limited has found 95% methane gas in a bore well at company's Botswana CBM exploration program.

Magnum said that the result is very important as it is a significant step towards the company's goal of

certifying gas reserves within the Karoo Basin. The coals of the Karoo Basin are known to **potentially contain significant quantities of CBM**. The results support Magnum's plans regarding additional exploration drilling, the focus of the next drilling being primarily on two of the nearby Central Project Area blocks, Magnum said in a statement. (October 17, 2013)

PRODUCTION

CHINA: Ongoing projects – Fracking - UG 83-2

Far East Energy fracs seven new wells in Shouyang CBM block in China

Far East Energy Corporation, operator of the Shouyang Block coal bed methane Production Sharing Contract (PSC) in Shanxi Province, China, announced that it has fraced seven additional wells since the last update on October 30 . Of the seven wells, six are production wells and one an appraisal well, bringing the total number of wells fraced so far this year to 65. Of this combined total, 57 are production wells and 8 are appraisal wells.

The company is continuing to drill new wells with 5 wells in the process of being drilled; one of which has been completed and is awaiting perforation, Far East said in a statement.

Since mid-June when the first new wells began pumping, water production in the 1H Production Area has increased by approximately 96%, the company said. (November 13, 2013)

RESERVES

SOUTH AFRICA: Reserves estimates - UG 83-3

Sunbird Energy estimates a resource at South Africa coal seam gas project

Sunbird Energy has independently certified a Best Estimate (2C) Contingent Resource of **644 billion cubic feet of gas** for its Mopane Coal Bed Methane Project in South Africa.

Drilling is continuing with the goal of expanding the resource base and initial **pilot production is**

planned for 2014. Mopane covers 1,577 square kilometres in the Limpopo and is traversed by major electricity transmission lines that form part of the Southern African Power Pool. It is also close to major local mining and mineral processing facilities. Sunbird has a 74% interest in the project. (November 4, 2013)

SHALE GAS

EXPLORATION – DISCOVERY

ROMANIA: Planned project – Delay - UG 83-4

Chevron halts Romania shale gas exploration

Chevron Corp. took a step back from development of shale gas Romania, announcing that it would **suspend operations** following the fifth day of protests by villagers from Pungesti at a development site in the northeast of the country. The local town Council of Pungesti decided that the issue of shale gas development in the village area should be put to a referendum. If we will have the necessary 25% of signatures the referendum will be held on November 24 ." said the secretary of Pungesti, Constantin Chiriac.

The referendum would not have any legal impact on the drilling as approvals were given at higher levels. In a statement, the Ministry of Environment and Climate Change said that public debates were held as part of procedures for issuing environmental permits "where the interested parties were informed with respect to the content and stages of the project."

The multinational confirmed the suspension of its activities in a written statement. Chevron is committed to building constructive and positive relationships with the communities where we operate and we will continue our dialogue with the public, local communities and authorities on our projects. We have obtained the required permits and approvals to start activities in Silistea. Chevron **will undertake only exploration activities with conventional technologies** in block EV-2, under our existing permits."

Prime Minister Victor Ponta said "I think Romania must achieve energy independence and I think a strategic goal for Romania is to no longer import gas, but produce it ourselves." As for concerns about the observance of environmental requirements, the PM said "this wasn't anyway about exploitation yet. For a start, these are five years of exploration, this has nothing to do with environmental issues." (October 18, 2013)

PRODUCTION

UKRAINIA: Planned project – Agreement – UG 83-5

Kiev gives nod to shale gas work for Chevron

The Ukrainian government announced it approved a draft agreement with Chevron for shale natural gas extraction in the western part of the country. Ukrainian Prime Minister Mykola Azarov said under the draft deal Chevron would invest \$350 million in shale exploration at the Oleske field in western Ukraine. The field is expected to hold **more than 100 trillion cubic feet of natural gas**.

The announcement comes after Russian energy company Gazprom said Ukraine was late in

paying off its natural gas debt. Gazprom cut natural gas supplies to Ukraine most recently in 2009 because of payment concerns. Ukraine says it's paying more for Russian gas than its regional counterparts.

Ukraine is one of the Eastern European countries thought to be rich in shale natural gas. The government said there may be enough natural gas in shale reserve areas to meet the country's needs without imports. In January, Royal Dutch Shell signed a \$10 billion contract to explore Ukrainian shale. (October 31, 2013)

UNITED KINGDOM: Planned project – Drilling campaign - UG 83-6

GDF Suez buys U.K. shale-gas assets in Bowland Basin from Dart

GDF Suez SA, became the second utility to buy into U.K. shale with the purchase of assets from Dart Energy Ltd. GDF will acquire a **25% interest in 13 licenses** in northern England's Bowland basin, Dart said recently in a statement. GDF will hand over \$12 million in cash and cover 75% of the Australian company's costs up to \$27 million to fund a **three-year exploration campaign**.

The Bowland basin, potentially holding about 1,300 trillion cubic feet of gas, has already lured U.K. utility Centrica Plc, which bought a stake in Cuadrilla Resources Ltd.'s acreage in June. British Prime Minister David Cameron has pledged tax breaks to shale drillers. (October 22, 2013)

UNITED STATES: Gas supply - UG 83-7

Natural gas flow could reverse course, making us exporter if trends hold up

The Utica and Marcellus shale plays have such bullish futures that they could **reverse the traditional south-to-north and west-to-east pipeline flows** of natural gas, says a new report from Bentek Energy in Houston. Such a phenomenon would be driven by **increased production in the Utica and Marcellus plays** in Ohio, Pennsylvania and West Virginia and **soaring demand for natural gas in the Southeast** over the next 10 years. As a result, Bentek says, the Northeast would switch from the nation's largest demand region for natural gas to a net supply region.

The report says the Utica and Marcellus plays will account for more than one-third of the increase in

U.S. natural gas production through 2013 while nearly half of the increase in demand for gas will come from the Southeast. Bentek analyst Rick Notarianni told the Marcellus and Utica plays now provide about **18%** of the nation's 64 billion cubic feet per day of natural gas. It's expected to account for around **25%** of the projected 77 Bcf/d in 2023. The vast majority of that gas will come initially from the established Marcellus play in north-central and southwestern Pennsylvania and northern West Virginia. "We expect the Utica to grow substantially in the back half of the decade,"... "the problem now is with (pipeline and processing) infrastructure in Ohio. It just does not exist ... to move product from the well head to where someone can actually use it." (October 14, 2013)

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SUPPLIES - IMPORTS - EXPORTS

EUROPE: Environmental constraints - UG 83-8 GDF Suez wants more consideration for European shale

Opening up to shale oil and natural gas in Europe could ensure long-term energy security for the region, an executive at French energy company GDF Suez said. New drilling technologies for shale have led to major increases in U.S. oil and natural gas production.

Europe gets about a quarter of its natural gas from Russia. Mestrallet lamented European governments were closing gas-fired power plants

while at the same time expressing reservations about shale. "Europe is still hesitating about actively searching for its own unconventional oil and gas resources, which perhaps could be a part of the solution," he said.

Some of the chemicals used in the shale drilling process are considered environmental threats. A constitutional court in France last week upheld a 2011 ban on shale drilling. French Energy Minister Philippe Martin was quoted Friday by the BBC as saying the court's decision was an "environmental and political" victory. (October 15, 2013)

MEXICO: Planned project – Delay - UG 83-9

Mexico's Pemex voids \$1.8 bil tender to import US shale gas

Pemex recently voided what was to have been a \$1.8 billion tender for a huge pipeline to bring US shale gas south of the border. Pemex said no attempt will be made to invite a new round of bids for Los Ramones II. Instead, an offshore Pemex subsidiary, TAG Pipelines, will take on the job.

Only one bid was registered for the project. It came from Spain's Enagas and Belgium-based GDF Suez. Analysts had warned that the terms of the tender would mean that at least two competitive bids would have to be lodged. Pemex said TransCanada and IEnova, a Sempra Energy unit, were reported to be preparing bids, but canceled their plans.

The Los Ramones pipeline was devised in 2011 under the Mexican presidency of Felipe Calderon as Mexican industry faced natural gas shortages caused by sharply increased prices of shale gas in the US. The project was divided into two phases. Los Ramones I was assigned by Pemex to its own gas subsidiary and Gasoductos de Chihuahua, a Sempra-Pemex joint venture. (October 16, 2013)

RUSSIA: Investment opportunities - UG 83-10 Russia's Gazprom says no to shale natural gas production

Gazprom said it wasn't ready to examine the shale natural gas potential in the country because of abundant conventional reserves. The board of directors at Gazprom met recently in Moscow to survey the prospects for shale natural gas production, "...at the moment shale gas

production in Russia would be **inexpedient due to the abundance of conventional gas reserves with their recovery cost being considerably lower than the estimated cost of shale gas production,**" the company said in a statement. "In addition, it was pointed out that shale gas production was related to considerable environmental risks". (November 4, 2013)

ENVIRONMENT

CHINA: Environmental assessment - UG 83-11

How shale gas can save China from itself – Bloomberg view

For years the Chinese have been told that the blinding, sooty haze choking Beijing and other cities is the price of progress. Yet China's appetite for energy is literally killing its people. A study published in the *Proceedings of the National Academy of Sciences*, based on data compiled between 1980 and 2000, estimated that **pollution caused by burning coal stripped five years from the life expectancy of Chinese in the northern half of the country.** A separate study published in December in the *Lancet* attributed about a million deaths a year in China to air pollution.

Although other factors have contributed to the blackening of China's skies—including millions of cars and motorbikes clogging roads—**coal remains the deadliest.** In the past decade, China's coal consumption has more than doubled. It now burns almost as much coal as the rest of the world combined. In the first three months of the year, levels of PM-10 in Beijing were almost 30% greater than during the same period a year earlier.

China's recoverable shale gas reserves are estimated to be 25 trillion cubic meters, **50% larger than those of the U.S.** The government has already announced **subsidies to local shale gas producers**; it should also help finance new pipelines and gas-fired power plants. Officials must lower barriers to entry and increase incentives to encourage the most innovative drilling companies—the majority of which are American—to work in China.

Shale is no silver bullet. In the near term, China will have to keep building coal-fired plants to meet its voracious energy demand. Yet failure to address coal pollution will condemn millions more Chinese to premature deaths. It's hardly a choice. (July 11, 2013)

EUROPE: Environment assessment - UG 83-12
Proposed EU environmental impact assessment requirements could impact UK fracking industry

A proposed EU requirement that fracking for shale gas should be subject to the same environmental impact assessment (EIA) requirements as large onshore gas developments could have an impact on the UK industry, an expert has said.

The European Parliament has narrowly voted in favour of **extending the EIA Directive to cover all "exploration and exploitation of non-conventional hydrocarbons" where fracking, or hydraulic fracturing, is used, regardless of the size of the project.** Under current rules, only those natural gas projects that extract at least 500,000 cubic metres each day require an EIA before they can proceed. An EIA, which can take up to a year or longer to complete, requires developers to survey the environmental impact of a projects across multiple areas such as ecology, air quality and geology as well as on the population.

"It is early days for shale in the UK and no developer will be able to determine how much gas is accessible and commercially viable until the exploratory and appraisal phases are complete," said planning and infrastructure expert Richard Griffiths. "This means that it will be important for the EU to provide clarity on what constitutes a 'project' in fracking terms, as it would be impracticable, and unreasonable, to expect developers to carry out a meaningful EIA of all the

stages of the shale gas extraction process from exploration through to abandonment at the outset."

The proposals are not law yet and must now be debated by member states and the European Commission, before the European Parliament votes again on the final text of the revised directive.

The current rules apply to natural gas projects where at least 500,000 cubic metres is extracted each day, as has been said above. However, most shale projects yield much less than this due to the rock fracturing process used and are not therefore currently subject to an EIA requirement. Under the terms of the amendment, an EIA would be mandatory where the hydraulic fracturing technique is used regardless of the quantity of material extracted. It would apply to exploration for, or exploitation of, all non-conventional hydrocarbons including shale gas and oil, and coal gas.

The European Parliament has also proposed new measures aimed at preventing conflicts of interest between developers and people carrying out impact studies, by ensuring their independence. Experts would have to have the necessary qualifications, expertise and technical skills, and be able to work in a scientifically objective fashion independently of the developer or public authority. Further amendments are proposed to ensure that the public is fully informed and consulted about potential projects". (October 20, 2013)

UKRAINIA: Environmental constraints - UG 83-13
Ukraine's shale gas plans pose danger for Russia

Planned drilling for shale gas in Ukraine is likely to pollute downstream waters in neighbouring Russia, environmental conservation group the World Wide Fund for Nature said recently. Ukraine last year announced a joint project with Shell, to drill for shale gas in the eastern Kharkiv Region, which borders Russia. Extraction is due to begin in 2018 or 2019. The project is expected to decrease Ukraine's current dependence on natural gas from Russia following a series of so-called gas.

But shale gas extraction in the eastern region is likely to pollute the Seversky Donets River, which flows into Russia, the WWF's Alexei Knizhnikov told. Russia cannot compel Ukraine to present an international assessment of the project's risks because Russia has not ratified the United Nations' Espoo Convention on crossborder environmental impact, said Knizhnikov, who oversees energy projects at the WWF's Russian branch.

Moscow and Kiev both signed the convention in 1991, but only Ukraine ratified it. Russia recently stepped up political pressure on Ukraine over the latter's plans to sign an association agreement with the European Union next month. Lately the chief executive of Russian gas export monopoly Gazprom demanded an immediate resolution of Ukraine's unpaid August gas bill, which he said amounted to \$882 million.

Protests against Chevron's shale gas exploration

Hundreds of Ukrainians have protested against US Chevron's plans to explore for shale gas, seen as vital to the ex-Soviet country's plans to ease its energy dependence on Russia. Chevron last year won a tender to explore the Olesky deposit in the west of the country, which the government estimates could hold 2.98 trillion cubic metres of gas. But locals are concerned about the ecological consequences of shale gas exploration in the mountainous forest region, which is also a prominent tourist resort. (October 31, 2013)

PUBLICATIONS

AFRICA: Gas supply - UG 83-14

African Development Bank sees significant potential for shale gas in Africa

African Development Bank sees shale gas as a viable energy option for the continent and if developed, could lead to lower gas prices, increased consumption of natural gas, reduced greenhouse gas emissions from power generation and substantial economic benefits to producer countries.

A report titled, Shale Gas and its Implications for Africa and the African Development Bank, examines both the positive and cautionary lessons that Africa can learn from the recent explosion of shale gas production in the United States.

The countries with potential for shale gas are Algeria, Libya, Tunisia, Morocco, Mauritania,

South Africa and the Western Sahara. However, the authors of the report also emphasise that the development and production of shale gas can present substantial environmental challenges. These include the large amounts of water required for extraction, water contamination, increased seismic activity and the venting and flaring of associated gas.

Governments and the public must consider the most advantageous way to proceed before embarking on the full development of the resource, the report says. The report says that AfDB should play the role of an "honest broker" and work to ensure that governments with possible shale reserves are well informed and have access to reliable information on possible environmental consequences. (October 17, 2013)

TIGHT GAS

PRODUCTION

OMAN: Talks - UG 83-15

BP, Oman in final stages of talks to ink tight gas pact

Oman and BP are in an advanced stage to sign a production sharing agreement for full-field commercial development of Block 61 **tight gas** fields in north-central Oman, according to Times of Oman. "Both Oman government and BP have agreed to finalise all agreements by the end of this year. Once all agreements are in place, we expect BP to declare commerciality and then we sign a **long-term production sharing agreement with them for 30 years**," Mohammed bin Hamad Al Rumhy, the minister of oil and gas, told Times of Oman.

The two parties inked a provisional deal earlier this year. BP is planning to build a large gas processing plant to process natural gas to be produced from its Block 61 tight gas fields. The plant will have a **capacity to process one billion cubic feet of natural gas per day**, which is the anticipated production from gas-rich Khazzan and Makarem fields in the first phase.

Al Rumhy also said that the testing of gas wells is complete now. "They are now assessing EPC contract for drilling of new wells and facilities, which will be awarded soon." BP is expected to invest \$20billion-\$24 billion for the first phase full-field development of its Block 61 tight gas fields. (October 20, 2013)

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