



# U-Gas News Report

Unconventional Gas Activities in the World

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## ***COALBED METHANE & COAL SEAM GAS***

### ***EXPLORATION - DISCOVERIES***

#### **CHINA : Authorities approve extension of exploration period for the Liulin CBM block — UG<sub>44-1</sub>**

Fortune Oil is announced recently significant advancements for the Liulin CBM block. The Ministry of Commerce has approved the extension of the PSC exploration period for the Liulin CBM block for a further two years to 29 March 2012. The first of two lateral wells has been spudded in Liulin by FLG. The Company expects that a significant portion of the Liulin block will be developed using lateral wells as they have a far greater production capacity than vertical wells. FLG and CUCBM have a joint objective under the Liulin State Pilot Project to demonstrate gas production capacity of 50 million cubic metres per year from the wells drilled in 2009 and 2010. Negotiations have already commenced concerning an initial gas sales

agreement with CUCBM Shanxi, an existing joint venture between Fortune Oil and CUCBM. It is envisaged that CUCBM Shanxi will construct facilities in the Liulin block for marketing the early CBM production as Compressed Natural Gas. In December 2009 FLG and CUCBM completed the application for certification of reserves totalling 5 billion cubic metres (180 billion cubic feet) for seams 3, 4 and 5 in a northern section of the block. The formal certification is still awaiting a final sign-off from the Ministry of Land and Resources. Application for reserves certification for additional coal seams across the block will be possible once the 2010 drilling campaign has been completed. (Fortune Oil press release, March 25, 2010)

### ***PRODUCTION***

#### **AUSTRALIA : Government to fund study on coal seam gas mining effect on underground water supplies — UG<sub>44-2</sub>**

Federal Water Minister Senator Penny Wong and her Queensland counterpart Stephen Robertson said up to \$3.88 million in new funding would be put toward "assisting the CSG industry to better manage the risks to ground and surface water associated with its mining activities". Mr Robertson said the State Government would work closely with the CSG industry and scientific experts "to build on our current knowledge".

The Government's submission said: "There are concerns about the impacts that extensive dewatering of coal seams may have on groundwater reserves". But it said adequate knowledge and data to enable proper assessment of potential groundwater impacts from the CSG industry were "not available because there has not been a need for it". (The Courier-Mail, April 13, 2010)

## **CHINA : PetroChina plans to produce 10 bcm of coal seam gas from Erdos by 2020 —**

### **— UG<sub>44-3</sub>**

Li Jingming, chief geologist at PetroChina's Coalbed Methane Unit said recently that the company plans to produce 10 billion cubic metres of coal seam gas per year from the project by 2020. "We have around 1.5 billion

cubic metres of production capacity and output to amount to 700 to 800 million cubic metres this year," Li said. He said that it cost about two million yuan to drill a well. (Reuters, March 29, 2010)

## ***RESERVES***

## **AUSTRALIA : Drillsearch Energy reports increase in CBM potential of Western**

### **Cooper Basin — UG<sub>44-4</sub>**

Drillsearch Energy Ltd announced recently a significant increase in the Prospective Resource Potential of the Western Cooper Unconventional Gas Project. The unconventional gas Prospective Resource potential of deep coal seams in the Western Cooper Unconventional Gas Project Area has increased by approximately 360%. On 27 November 2009, Drillsearch previously announced the results of the independent review of the deep coal seam gas potential of the project area.

The previous announcement indicated that the unconventional gas Prospective Resource potential was between 2.7 to 5.4 TCF based on a gas-in place of 10.9 TCF. Drillsearch Managing Director, Brad Lingo said "There is a lot of work that needs to be done to establish this Prospective Resource and as commercially viable reserve but to put these potential gas volumes into perspective, a typical single 5 mmtpa LNG train requires 5-6 TCF of gas supply over 15 years. Similar quantities would be required to run a large scale gas-to-liquids plant producing clean diesel.

With the potential resources we are trying to prove up from these prospective resources, if these can be successfully established as a commercially viable resource and developed there is significant opportunity for a very big project". (Oilvoice, March 3, 2010)

## ***COMPANIES***

## **AUSTRALIA : CNPC and Shell reach acquisition agreement with Arrow — UG<sub>44-5</sub>**

The board of directors of Australia's largest coal-bed gas producer Arrow Energy Ltd. announced recently it will accept the acquisition of its business in Queensland, Australia by China Petroleum & Chemical Corporation (CNPC) and Shell. CSCSG (Australia) Pty. Ltd., the joint-venture company of Sinopec and Shell, is now

waiting for approval from regulatory authorities and shareholders of Arrow. Arrow Energy, Ltd. is now Australia's largest coal-bed methane producer, with 6,150 petajoules of coal seam gas interests. CNPC and Shell will each have 50 percent of the shares in the joint-venture company. (People's Daily, March 22, 2010)

## ***SHALE GAS***

### ***EXPLORATION - DISCOVERIES***

## **AUSTRALIA : Exoma Energy reports shale gas potential in the Galilee Basin — UG<sub>44-6</sub>**

Exoma Energy Limited said recently that its shale gas resource in the Galilee Basin, Queensland will prove to be of world class and will complement its extensive CSG exploration acreage. Exoma has one of the largest contiguous Shale Gas acreages in Australia with over 25,000 km<sup>2</sup> in five ATPs. The Galilee Basin Toolebuc Shale, which is present in all five ATPs, was identified by the original ATP applicants as having significant Shale Gas potential during the geological

review preceding the application for the tenements in early 2008. Currently there are no solely Shale Gas field developments in Australia but the improvements in horizontal drilling and hydraulic fracturing techniques has opened up the potential for the Toolebuc and other Australian shale deposits to become significant sources of gas. Beach Energy recently reported it had identified shales in the Cooper basin hosting "about 200 Tcf of gas in situ". Work undertaken by Exoma indicates a potential for significant volumes of shale gas being found across its five ATPs in the Galilee Basin.

Exoma has conservatively estimated in excess of 20 TCF of Coal Seam Gas In Place across these ATPs. The Toolebuc formation is a gassy, organic rich shale renowned for decades as being gas bearing with gas being recorded in the drilling mud of conventional petroleum exploration, CSG wells and in water wells.

These shales are uniformly distributed across all five of Exoma ATPs and range in thickness from 20 to 45 metres at depths typically less than 700 metres. Exoma plans to include a number of Shale Gas core wells into its 2010 work program in addition to the targeted CSG wells, to further test the hitherto overlooked Toolebuc Shale Gas potential. (Gas Today, March 26, 2010)

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### **AUSTRALIA : New Standard Energy to launch exploration programme for shale gas in Canning Basin — UG44-7**

New Standard Energy will accelerate the progress of its shale gas exploration acreage in Western Australia's Canning Basin following an internal and external review of the shale gas prospectivity in its exploration acreage. The company's decision to accelerate shale gas exploration follows encouragement received from ongoing work with New Standards independent shale gas adviser that supports the view that although early stage, the Goldwyer formation in New Standards Canning Basin permits exhibits many of the necessary geological prerequisites for shale gas. New Standard Managing Director Sam Willis said "Shale gas is rapidly becoming one of the biggest sources of gas production in the United States, and analysis of New Standards Canning Basin acreage indicates although early stage, it is highly prospective for shale gas exploration success in Australia". Mr Willis said "Thirty per cent of all new gas discoveries in the United States are now shale gas, and many

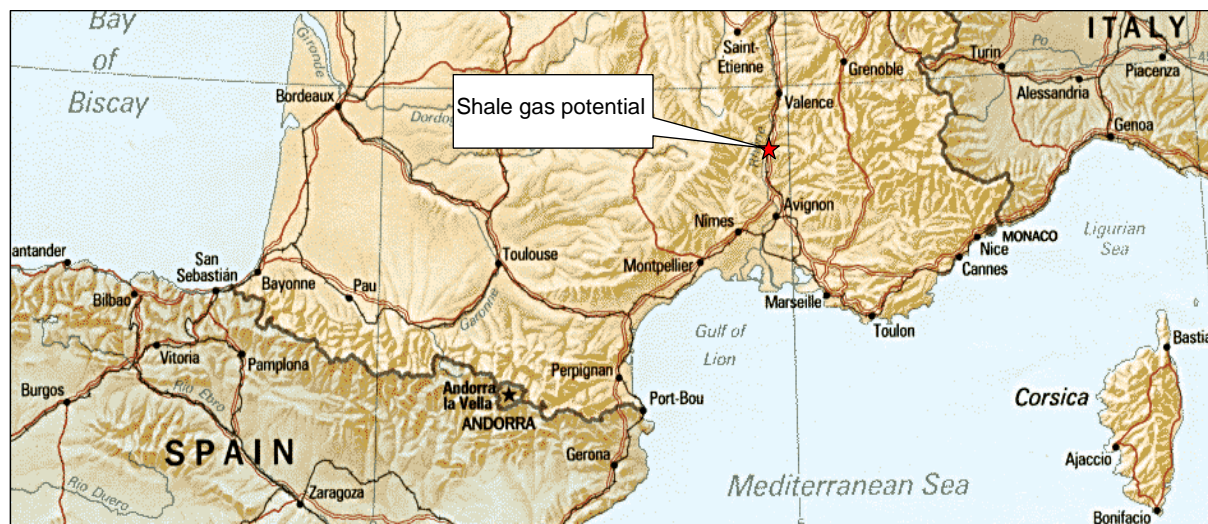
geological characteristics of gas bearing shales that exist in the US also exist in the Goldwyer shale of the Canning Basin. It is an early stage project but it is potentially very large and deserves additional attention to advance it further". As a result of New Standards decision to accelerate its shale gas exploration project, New Standard will refine the next phases of work to be undertaken to advance the project further. A report from the independent shale gas consultant is expected in the next two months. It will provide third party assessment and assist New Standard to develop a focused work program to evaluate the rock properties of the Goldwyer shale and provide information for potential gas in place calculations and targets. "The overall Goldwyer shale formation in the Canning Basin is about 600km long and 300km wide, and New Standard controls a large portion of this through its 37,000sq km of exploration acreage on a 100% equity basis" Mr Willis said. (Oilvoice, March 10, 2010)

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### **FRANCE : Total to evaluate shale gas potential in the area of Montelimar — UG44-8**

Total announced recently having obtained the Montelimar Permit in France by ministerial decree dated as of March 1st, 2010.

This exploration permit, granted for a five-year period, covers a surface of 4,327 square kilometers that spans from the south of Valence to the region of Montpellier, in the south of France.



This permit, which will be operated by Total, has been jointly attributed to Total and to a subsidiary of the American group Devon. Total also announced having acquired Devon's French affiliate. Through this transaction, which is subject to ministerial approval, Total will hold a 100% stake in the license. (Business Wire, March 31, 2010)

### INDONESIA : Tenders to be launched for the development of shale gas fields — UG44-9

Indonesia plans to launch tenders for the development of shale gas fields in 2010, aiming to tap reserves estimated at 1,000 tcf. "We will open tenders for development of onshore shale gas fields located in eastern Indonesia this year," said Edy Hermantoro, an upstream oil and gas director at the ministry of energy and mineral resources. "A study from Bandung Technology University states that Indonesia holds 1,000

tcf of shale gas reserves," said Edy Hermantoro. "We are preparing development mechanisms for shale gas fields. Currently, we have held joint studies with a company," said Edy, who added that shale gas development would be economical if the reserves are located between 300-400 m underground. (Oil and Gas Journal, March 16, 2010)

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### **POLAND : Minister calls on European Union give more weight to shale gas development — UG<sub>44-10</sub>**

Poland recently called on the European Union to give more weight to the role of shale gas in its energy policy in order to cut the region's dependence on imports. "Additional gas deposits could cut make the Union independent from external suppliers, so non-conventional gas should be in the centre of the EU debate about energy security, " Poland's Foreign Minister Radoslaw Sikorski said.

In Poland, shale deposits are already drawing interest from companies including Exxon Mobil Corp., ConocoPhillips and Chevron Corp., according to the Polish Geological Institute. "We have so far issued 56 licenses to drill and we're still receiving new applications, " Henryk Jezierski, Poland's chief geologist, said at the seminar.

Polskie Gornictwo Naftowe i Gazownictwo SA will start drilling for shale gas in May 2010, Deputy Chief Executive Officer Waldemar Wojcik said. Europe's unconventional gas reserves may total 1,200 trillion cubic feet, according to Royal Dutch Shell Plc. The International Energy Agency said in November 2009 it doesn't see unconventional gas production in Europe as "changing substantially" the overall supply picture until about 2020. (Bloomberg, April 8, 2010)

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### **POLAND : LNG Energy increases its participation in shale gas leases — UG<sub>44-11</sub>**

LNG Energy Ltd. announced recently that it has entered into an agreement with Omag Beteiligungen AG to consolidate its position in Poland and the USA by acquiring all of the outstanding shares of Kunagu Real Estate S.A... Kaynes holds a 20% interest in BNK's shale gas exploration project in Poland. The project consists of three concessions, Starogard, Slupsk and Slawno located in Northern Poland and total approximately 730,000 acres. Upon

completion of the acquisition, LNG's net interest in the project will increase from 12% to 20%. The remaining 80% is held by Sorgenia E&P S.p.A. (27%), Rohol-Aufsuchungs Aktiengesellschaft (26%) and BKX International Holdings Inc. (27%). License commitments will require the drilling and testing of one exploration well per concession before the end of June 2011. (Marketwire, March 26, 2010)

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### **POLAND : EuroGas Enters and Total enter in agreement on shale gas properties — UG<sub>44-12</sub>**

EuroGas, Inc. announced recently that through its subsidiary, EuroGas Polska sp.z o.o., it has entered into a confidentiality agreement with Total E&P Activites Petrolieres (Total), a wholly-owned subsidiary of Total S.A. The agreement was entered into in connection with the evaluation and possible acquisition by Total of certain rights held by EuroGas Polska's wholly-owned West Ukrainian subsidiary in an onshore region in Western Ukraine.

Total has also been evaluating the Bieszczady concession in Poland, in which EuroGas owns a 24% interest. The properties under evaluation by Total are situated on a coal bed methane concession near the Ukrainian/Polish border. This area within the Ukrainian part of the Lublin trough is offsetting recently acquired shale gas concessions by ExxonMobil, Chevron, Marathon Oil and Polish Oil & Gas (PGNiG) within the Polish part of the Lublin trough on the Polish side of the Polish/Ukrainian border. Wolfgang Rauball,

Chairman and CEO, EuroGas said "Our research indicates that the thickness of the shale gas formations under EuroGas' area in the Western Ukrainian portion of the Lublin trough is substantially thicker than those found in the successful shale gas fields in the United States". (Marketwire, April 13, 2010)

**UNITED STATES : Reliance acquires stake in a Marcellus shale gas acreage — UG<sub>44-13</sub>**

Reliance Industries recently picked up a 40 per cent interest in shale gas acreage in the US. RIL announced that its subsidiary, Reliance Marcellus, had signed a joint venture with Atlas Energy. The deal will give RIL access to approximately 1,20,000 acres, or 40 per cent out of 3,00,000 acres of underdeveloped leasehold in the core area of the Marcellus Shale in southwest Pennsylvania. RIL expects that the acreage it has acquired control over will support

drilling for over 3,000 wells. "This joint venture will materially increase Reliance's resource base and provide it with an entirely new platform from which to grow its exploration and production business while simultaneously enhancing its ability to operate unconventional projects in the future," said RIL executive director P.M.S. Prasad. The transaction is expected to close by the end of April 2010. (The Telegraph, April 10, 2010)

**UNITED STATES : Discovered resources doubled thanks to shale gas — UG<sub>44-14</sub>**

A recent IHS CERA study said that the gas shale boom in North America has more than doubled discovered gas resources and can supply more than a century of consumption at current rates. Daniel Yergin, chairman of IHS CERA said "It has a major impact on that national energy picture ... at the same time it is not something that just transforms the picture.

It is a game-changer but there are definite constraints on it in terms of where the markets will be and how it will be absorbed into the power sector," Yergin said. The IHS CERA study said growth in power demand in the next 20 years will likely cause natural gas demand to double its current level of 19 billion cubic feet per day by 2030. Shale gas, coupled with expanded liquefied natural gas import facilities in the U.S. and Canada, as well as increased storage, has created "supply shock absorbers" to respond to disruptions and market imbalances, the study said.

The study pointed out uncertainties about shale gas including stringency of future carbon legislation and viability of carbon capture and storage technology. Tom Walters, president of Exxon Mobil Corp's gas and power marketing company, said during a panel discussion "We need reliable, open markets and investment frameworks that consider and allow unbiased use of all economic alternative" to reduce emissions. "We need to stop not investing," Philippe Boisseau, president of gas and power for Total, said during the same session. (Reuters, March 10, 2010)

**UNITED STATES : Pioneer Natural Resources finds gas in Eagle Ford Shale — UG<sub>44-15</sub>**

Pioneer Natural Resources Company announced recently its third successful well in the Eagle Ford Shale in South Texas. The Charles Riedesel GU 1-1 well, which is located in DeWitt County, Texas, flowed at an initial production rate of approximately 15.7 million cubic feet of gas equivalent per day (including approximately 11.6 million cubic feet of gas per day and 680 barrels of condensate per day) on a 22/64 inch choke with approximately 6,300 pounds per square inch wellhead flowing pressure. The liquids-rich gas contains 1,200 British thermal units

per cubic foot. Scott Sheffield, Chairman and CEO, stated, "We are very pleased with the results from the Riedesel #1 which has high liquids content and one of the highest total combined gas and liquids rates reported in the play to date. "With a gross resource potential of more than 11 trillion cubic feet equivalent, we expect the Eagle Ford Shale to add significant production and reserves while enhancing shareholder value" he said. (Business Wire, March 23, 2010)

## **PRODUCTION**

### **CANADA : TransAmerican Energy acquires stake in Utica shale properties — UG44-16**

TransAmerican Energy Inc. announced recently that it has entered into a Letter of Intent to acquire a 100% interest in 10 Utica shale oil and gas properties comprising 136,000 acres located in Quebec. Questerre Energy Corp. reported that it believes the entire Quebec Utica shale region could hold potentially up to 20 trillion cubic feet of gas with initial production rates of up to 12 MMCF per day with the typical decline rates for tight gas reservoirs. From 2006 through 2009 24 wells, both vertical and horizontal, were drilled to test the Utica. Positive gas flow test results have been reported, although none of the wells had been put on production at the end of 2009.

The Utica shale play focuses on an area south of the St. Lawrence River between Montreal and Quebec City. Interest has grown in the region since Forest Oil Corp. announced a significant discovery there after testing two vertical wells. Forest Oil reported that said its Quebec assets may hold as much as four trillion cubic feet of gas reserves, and that the Utica shale has similar rock properties to the Barnett shale in Texas. TransAmerican believes that the Lacasse Property is in a very favourable and strategic position with lands bordering the St-Lawrence Gulf and River. (Earth Times, March 15, 2010)

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### **UNITED STATES : Statoil strengthens its position in the Marcellus Shale — UG44-17**

Statoil signed recently an agreement with Chesapeake which will add approximately 59000 net acres to Statoil's current 600000 net acre positions in the Marcellus Shale.

As part of Statoil's joint venture agreement with Chesapeake in 2008, Statoil has the right to periodically acquire its share of leasehold that Chesapeake continues to acquire in the Marcellus Shale.

Statoil expects to continue to grow its Marcellus position together with Chesapeake. Andy Winkle, VP for the Marcellus Asset, said "We were an early mover into the Marcellus and we will continue to build a long term position in what we expect will become a legacy asset and reach our goal of 50000 boepd production by 2012". (The Norway Post, March 31, 2010)

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### **UNITED STATES : CNX Gas reports record production from a new Marcellus Shale well — UG44-18**

CNX Gas Corporation announced recently production results from its latest horizontal well targeting the Marcellus Shale, the GH2BCV well in central Greene County, PA. This well has been producing for 16 days, at an average production rate of 4.9 MMcf per day. The peak daily production rate was 5.7 MMcf, and the current daily

production rate is 5.5 MMcf. The previous highest producing well was the CNX 3 well, which came on line in October 2008. That well had cumulative production of 1 Bcf through February 2010. CNX Gas's current daily net Marcellus Shale production is 21 MMcf from 16 horizontal wells. (PRNewswire, March 22, 2010)

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### **UNITED STATES : Environmental Protection Agency to launch study on fracturation effect on drinking water — UG44-19**

The Environmental Protection Agency announced recently that it will launch a \$1.9 million study into how drinking-water supplies are affected by hydraulic fracturing. Paul T. Anastas, assistant administrator for the EPA's Office of Research and Development, said EPA "research will be designed to answer questions about the potential impact of hydraulic fracturing on human health and the environment". Natural gas companies and environmental advocates said

they welcomed the study. William F. Whitsitt, executive vice president for public affairs at Devon Energy Corp., which engages in hydraulic fracturing, said he hoped that the EPA would reach out to state officials who have overseen the activity. (Washington Post, March 19, 2010)

## ***TIGHT GAS***

### ***EXPLORATION - DISCOVERIES***

#### **TURKEY : TransAtlantic and TPAO target tight gas — UG<sub>44-20</sub>**

TransAtlantic Petroleum entered recently into an agreement with Turkiye Petrolleri Anonim Ortakligi (TPAO). In the initial phase of the agreement, the Company will participate in two licenses, one in the Thrace Basin and one in Southeastern Turkey, and will re-enter a total of 4 wells and drill a total of 4 wells over 2011. These wells will target tight sand and shale formations. Mr. Mitchell, the Company's

Chairman, said "There is the potential for unconventional resources to contribute greatly to Turkey's energy needs. But it bears noting that the success in the development of unconventional resources will, I believe, improve over time as techniques are refined and knowledge of these particular reservoirs increases". (Rigzone, April 12, 2010)

### ***PRODUCTION***

#### **CHINA : Shell and CNPC in partnership for tight gas in Sichuan — UG<sub>44-21</sub>**

Shell and China National Petroleum Corporation plan to jointly develop natural gas deposits in China's Sichuan province under a 30-year production sharing agreement. Shell said the tight gas reservoirs were located in the Jinqiu block in Sichuan.

Tight gas is contained in rock that must be fractured or broken before it can flow easily to production wells. Shell and PetroChina are already operating Changbei, a tight gas field in the Ordos Basin in Shaanxi province, which began commercial production in March 2007 and now supplies 3 billion cubic metres per year to Beijing and eastern China.

Shell Chief Executive Peter Voser said recently that the company had the resource potential to more than double production from its North American tight gas fields to over 400,000 barrels of oil equivalent per day by 2020. "As we continue with the appraisal and development programme in tight gas, we are seeing sharp improvements in drilling costs and reduced drilling time. This improves the economics of these developments, and I think there is more to come here" he added. (Upstream Online, March 23, 2010)

#### **Unconventional Gas 2010 27<sup>th</sup> & 28<sup>th</sup> September 2010 Marriott Hotel, Regents Park, London, UK**

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