Week of Feb. 23, 2009/US$10.00

PennWell®

OIL&GAS JOURNAL®

International Petroleum News and Technology / www.ogjonline.com

European Gas Liberalization

Shell exploring Tucumcari Cuervo area after gas find
Screenless frac-packs extend PetroChina well production
Midstream, petchem players face ethane capacity problems
Marine CNG opens alternate production, delivery options

Happy New Year?

Rely on it. ABB Reliability Services.

In this economy, good may not be good enough. "Bad" has no chance. If your plant isn't operating more efficiently than your competitors', the New Year won't be so happy.

Answer these questions: Is your maintenance an uncontrollable cost or a profit contributor? Could your maintenance benefit from a culture makeover? Do you feel there is a better way to maintain your assets?

ABB can help. ABB Full Service® is a partnership where ABB assumes full responsibility for customers' maintenance operations and contractually commits to performance improvements, such as increased Overall Equipment Effectiveness and reduced Total Maintenance Costs.

How can we do this? Because maintenance is a core business for us. We've done it for 20 years, in 27 countries, at more than 150 sites worldwide. Not ready for a strategic maintenance partnership? We also help identify opportunities for plant reliability improvement and close performance gaps; maximize your Enterprise Asset Management software; and reduce maintenance and energy costs by managing your motors.

Contact us today at 877-234-6756 or reliability.services@us.abb.com to learn how you can make 2009 better (and happier) than last year.

ABB Automation & Power World 2009 March 24-26 Orlando, Florida
Collaboration. Learning. Results.
www.abb.com/a&pworld

Power and productivity for a better world™

ABB

OIL&GAS JOURNAL®

Feb. 23, 2009
Volume 107.8

EUROPEAN GAS LIBERALIZATION

REGULAR FEATURES

COVER

European Energy Commissioner Andris Piebalgs unveiled in September 2007 new proposals that the European Commission has suggested to improve gas competition across its 27 member states. But some provisions, such as full ownership unbundling of energy supply and transmission, have not been welcomed by member states, particularly France and Germany. The codecision procedure on a finalized text, involving the commission, council, and parliament is under way, and the pressure is on reaching a compromise before parliament goes for elections in June. OGJ's special report on European Gas Liberalization, beginning on p. 20, looks at the reactions from these institutions and academics to the commission's measures. Photo from EC.

General Interest

Exploration & Development

Drilling & Production

Processing

Transportation

 Oil & Gas Journal (ISSN 0030-1388) is published 47 times per year by PennWell Corporation, 1421 S. Sheridan Rd., Tulsa, Okla., Box 1260, 74101. Periodicals postage paid at Tulsa, Okla., and at additional mailing offices. Oil & Gas Journal and OGJ are registered trademarks of PennWell Corporation. **POSTMASTER:** send address changes, letters about subscription service, or subscription orders to P.O. Box 3497, Northbrook, IL 60065, or telephone (800) 633-1656. Change of address notices should be sent promptly with old as well as new address and with ZIP code or postal zone. Allow 30 days for change of address. Oil & Gas Journal is available for electronic retrieval on Oil & Gas Journal Online (www.ogjonline.com) or the NEXIS® Service, Box 933, Dayton, Ohio 45401, (937) 865-6800. **SUBSCRIPTION RATES** in the US: 1 yr. $89; Latin America and Canada: 1 yr. $94; Russia and republics of the former USSR, 1 yr. 1,500 rubles; all other countries: 1 yr. $129, 1 yr. premium digital $59 worldwide. These rates apply only to individuals holding responsible positions in the petroleum industry. Single copies are $10 each except for 100th Anniversary issue which is $20. Publisher reserves the right to refuse non-qualified subscriptions. Oil & Gas Journal is available on the Internet at http://www.ogjonline.com. (Vol. 107, No. 8) Printed in the US. GST No. 126813153. Publications Mail Agreement Number 602914. Return Undeliverable Canadian Addresses to: P.O. Box 1632, Windsor, ON N9A 7C9.

PennWell, Houston office
1455 West Loop South, Suite 400, Houston, TX 77027
Telephone 713.621.9720/Fax 713.963.6285/Web site www.ogjonline.com
Editor Bob Tippee, bobt@ogjonline.com
Chief Editor-Exploration Alan Petzet, alanp@ogjonline.com
Chief Technology Editor-LNG/Gas Processing Warren R. True, warrent@ogjonline.com
Production Editor Guntis Moritis, guntism@ogjonline.com
Pipeline Editor Christopher E. Smith, chriss@ogjonline.com
Senior Editor-Economics Marilyn Radler, marilynr@ogjonline.com
Senior Editor Steven Poruban, stevenp@ogjonline.com
Senior Associate Editor Judy R. Clark, judyrc@ogjonline.com
Senior Writer Sam Fletcher, samf@ogjonline.com
Senior Staff Writer Paula Dittrick, paulad@ogjonline.com
Survey Editor/News Writer Leena Koottungal, lkoottungal@ogjonline.com
Editorial Assistant Linda Barzar, lbarzar@pennwell.com

Vice-President/Group Publishing Director Paul Westervelt, pwestervelt@pennwell.com
Vice-President/Custom Publishing Roy Markum, roym@pennwell.com

PennWell, Tulsa office
1421 S. Sheridan Rd., Tulsa, OK 74112
PO Box 1260, Tulsa, OK 74101
Telephone 918.835.3161 / Fax 918.832.9290
Presentation/Equipment Editor Jim Stilwell, jims@ogjonline.com
Associate Presentation Editor Michelle Gourd, michelleg@pennwell.com
Statistics Editor Laura Bell, laurab@ogjonline.com
Illustrators Mike Reeder, Kay Wayne
Editorial Assistant Donna Barnett, donnab@ogjonline.com
Production Director Charlie Cole

London
Tel +44 (0)20.8884.4246
International Editor Uchenna Izundu, uchennai@pennwell.com

Washington
Tel 703.533.1552
Washington Editor Nick Snow, nicks@pennwell.com

Los Angeles
Tel 310.595.5657
Oil Diplomacy Editor Eric Watkins, hippalus@yahoo.com

OGJ News
Please submit press releases via e-mail to: news@ogjonline.com

Subscriber Service
P.O. Box 2002, Tulsa OK 74101
Tel 1.800.633.1656 / 918.831.9423 / Fax 918.831.9482
E-mail ogjsub@pennwell.com
Circulation Manager Tommie Grigg, tommieg@pennwell.com

PennWell Corporate Headquarters
1421 S. Sheridan Rd., Tulsa, OK 74112

P.C. Lauinger, 1900-1988
Chairman Frank T. Lauinger
President/Chief Executive Officer Robert F. Biolchini

Member Audit Bureau of Circulations & American Business Media

OGJ Newsletter

Feb. 23, 2009

International news for oil and gas professionals
For up-to-the-minute news, visit www.ogjonline.com

General Interest — Quick Takes

Eni sets production growth target of 3.5%/year

Eni SPA plans to increase its production by 3.5%/year over the next 3 years despite the uncertainty surrounding the economic downturn and energy markets.

It will invest €48.8 billion in 2009-12, slightly less than in its 2008-11 plan; exploration and production will cost €34 billion.

The company said it would aim for a reserves replacement ratio of 130% during 2009-12 and after that would maintain an average production growth of 3%/year to 2015 by stepping up activities in Africa, OECD countries, and Central Asia-Russia.

"More than 90% of production and investments to 2012 will be concentrated in these areas," Eni said.

The company is confident it can achieve these figures because of the quality of its portfolio in low-cost production areas with large projects that have economy of scale benefits.

Paolo Scaroni, chief executive of Eni, told investors in London that this year its production is expected to be above 1.8 million boe/d, based on an oil price of $43/bbl. In 2012, this will exceed 2 million boe/d, based on a $55/bbl scenario.

In the next 4 years, more than 500,000 boe/d of new production will start, 85% of which is related to projects that will be profitable even if oil prices are below $45/bbl.

By 2012 the company expects to have international gas sales of 124 billion cu m with an average growth of 7% a year, thanks also to the contribution of Distrigas.

Coal-fired plants produce more carbon than LNG

Coal-fired power plants produce 161% more greenhouse gas emissions through their life cycles than plants fueled by LNG, an independent study found.

The study, by PACE Global Energy Services for the Center on Liquefied Natural Gas, also found that two cleaner coal technologies, integrated gasification combined cycle (IGCC) and advanced ultrasupercritical coal (SCPC), produce 70% more GHG emissions than LNG.

"Replacing just one coal plant with LNG-fueled power generation for one year would equate to removing 557,000 cars off the roads. LNG will clearly play a crucial role in helping meet the substantial increase for clean burning natural gas once climate change legislation becomes a reality," said CLNG Pres. Bill Cooper.

He said the PACE study provides an "apples to apples" comparison by using a representative average of typical US coal and LNG operations for generating electricity. These included a gas-fired power plant supplied with LNG, a coal-fired plant, and plants using the IGCC and SCPC technologies, which are not yet available in the US.

Rockies refiners settle air pollution charges

Two Rocky Mountain refiners agreed to pay more than $141 million to settle federal air pollution charges, the US Environmental Protection Agency and Department of Justice said.

Frontier Oil Corp. agreed to pay a $1.23 million fine and spend $127 million on pollution control upgrades at its Cheyenne, Wyo., and El Dorado, Kan., refineries. Wyoming Refining Co. agreed in a separate settlement to pay a $150,000 fine and spend $14 million on similar upgrades at its Newcastle, Wyo., plant.

The settlements will reduce harmful air emissions by 7,000 tons annually, EPA and DOJ said. They said the agreements require installation of advanced control technologies, which will reduce yearly emissions of sulfur dioxide by some 3,775 tons, nitrogen oxide by some 2,100 tons, and other pollutants by some 1,200 tons. The three refineries' combined production capacity is 168,000 b/d.

Each refinery also will upgrade leak detection and repair practices to reduce harmful emissions from pumps and valves, implement programs to minimize the number and severity of flaring events, and implement new strategies to ensure continued compliance with the federal Clean Air Act's benzene waste requirements, according to EPA and DOJ.

As part of its settlement, Frontier agreed to install dome covers on refinery storage tanks at its two plants to reduce volatile organic compound emissions. The company also agreed to correct deficiencies in the refineries' risk management program, which were identified in a 2006 EPA inspection, including overdue inspections and tests of storage vessels containing toxic and flammable substances.

EPA said that under CAA, facilities that handle large amounts of chemicals are required to develop a risk management program to assess hazards associated with dangerous chemicals. The program must include an accident prevention program and an emergency response plan to deal with accidental releases, the federal agency said. ✦

Exploration & Development — Quick Takes

Total appeals Tempa Rossa delay order

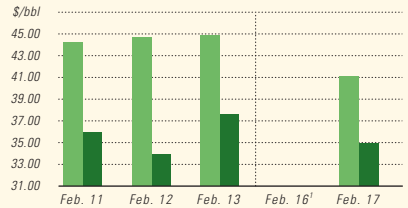
Total SA has decided to appeal a decision by an attorney of Italy's law courts to suspend for a year the development concession on Tempa Rossa oil field in southern Italy, a measure prompted by a preliminary investigation that revealed "corruption" and "faked" bids involving some €10 million.

Total expressed indignation over what it described as a "serious and prejudicial decision" at "a very preliminary stage" of the investigations.

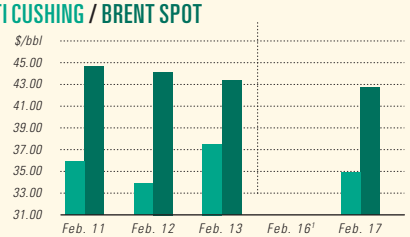
The head of Total Italia, Lionel Lheva, and two other execu-

Industry Scoreboard

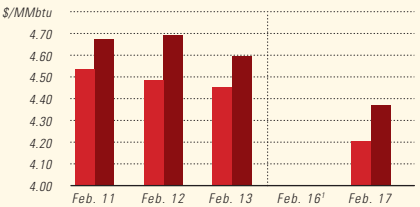
IPE BRENT / NYMEX LIGHT SWEET CRUDE



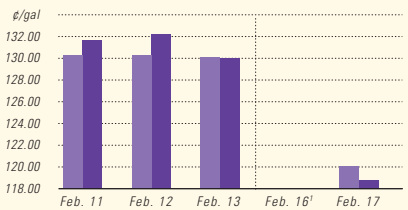
WTI CUSHING / BRENT SPOT



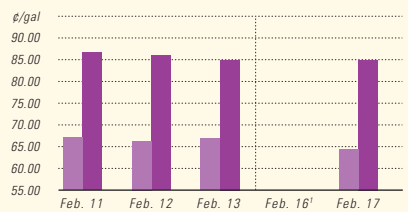
NYMEX NATURAL GAS / SPOT GAS - HENRY HUB



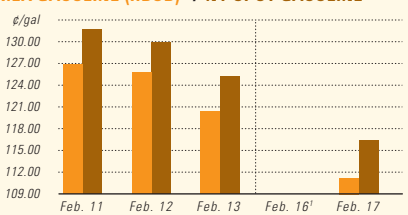
IPE GAS OIL / NYMEX HEATING OIL



PROPANE - MT. BELVIEU / BUTANE - MT. BELVIEU



NYMEX GASOLINE (RBOB)[2] / NY SPOT GASOLINE[3]



[1]Not available [2]Reformulated gasoline blendstock for oxygen blending.
[3]Nonoxygenated regular unleaded.

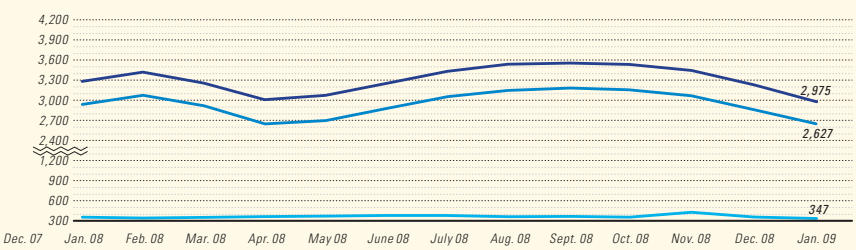
US INDUSTRY SCOREBOARD — 2/23

Latest week 2/6	4 wk. average	4 wk. avg. year ago[1]	Change, %	YTD average[1]	YTD avg. year ago[1]	Change, %
Demand, 1,000 b/d						
Motor gasoline	8,828	8,819	0.1	8,843	8,828	0.2
Distillate	4,169	4,217	–1.1	4,108	4,209	–2.4
Jet fuel	1,311	1,545	–15.1	1,345	1,546	–13.0
Residual	689	651	5.8	670	672	–0.3
Other products	4,807	4,823	–0.3	4,650	4,736	–1.8
TOTAL DEMAND	19,804	20,055	–1.3	19,615	19,991	–1.9
Supply, 1,000 b/d						
Crude production	5,165	5,097	1.3	5,085	5,103	–0.3
NGL production[2]	2,009	2,138	–6.0	2,228	2,164	3.0
Crude imports	9,816	9,930	–1.1	9,913	9,810	1.1
Product imports	3,394	3,404	–0.3	3,298	3,253	1.4
Other supply[3]	1,695	1,490	13.8	1,458	1,012	44.1
TOTAL SUPPLY	22,079	22,059	0.1	21,983	21,341	3.0
Refining, 1,000 b/d						
Crude runs to stills	14,310	14,658	–2.4	14,310	14,715	–2.8
Input to crude stills	14,699	15,057	–2.4	14,699	15,018	–2.1
% utilization	83.4	85.6	—	83.4	85.4	—

Latest week 2/6	Latest week	Previous week[1]	Change	Same week year ago[1]	Change	Change, %
Stocks, 1,000 bbl						
Crude oil	350,768	346,051	4,717	301,070	49,698	16.5
Motor gasoline	217,559	220,221	–2,662	229,236	–11,677	–5.1
Distillate	141,565	142,591	–1,026	126,973	14,592	11.5
Jet fuel–kerosine	41,000	39,478	1,522	41,093	–93	–0.2
Residual	35,050	34,569	481	36,893	–1,843	–5.0
Stock cover (days)[4]			Change, %		Change, %	
Crude	24.7	24.2	2.1	20.6	19.9	
Motor gasoline	24.6	25.1	–2.0	25.6	–3.9	
Distillate	34.0	35.2	–3.4	30.0	13.3	
Propane	26.2	26.9	–2.6	21.7	20.7	
Futures prices[5] **2/13**			**Change**		**Change**	**%**
Light sweet crude ($/bbl)	36.91	40.50	–3.59	89.09	–52.18	–58.6
Natural gas, $/MMbtu	4.56	4.62	–0.05	8.04	–3.48	–43.2

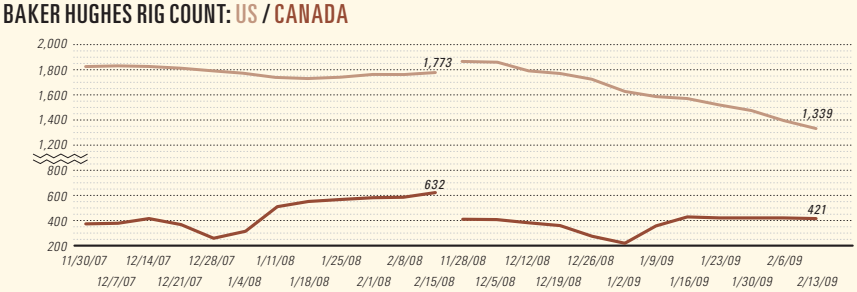
[1]Based on revised figures. [2]Includes adjustments for fuel ethanol and motor gasoline blending components. [3]Includes other hydrocarbons and alcohol, refinery processing gain, and unaccounted for crude oil. [4]Stocks divided by average daily product supplied for the prior 4 weeks. [5]Weekly average of daily closing futures prices.
Sources: Energy Information Administration, Wall Street Journal

BAKER HUGHES INTERNATIONAL RIG COUNT: TOTAL WORLD / TOTAL ONSHORE / TOTAL OFFSHORE

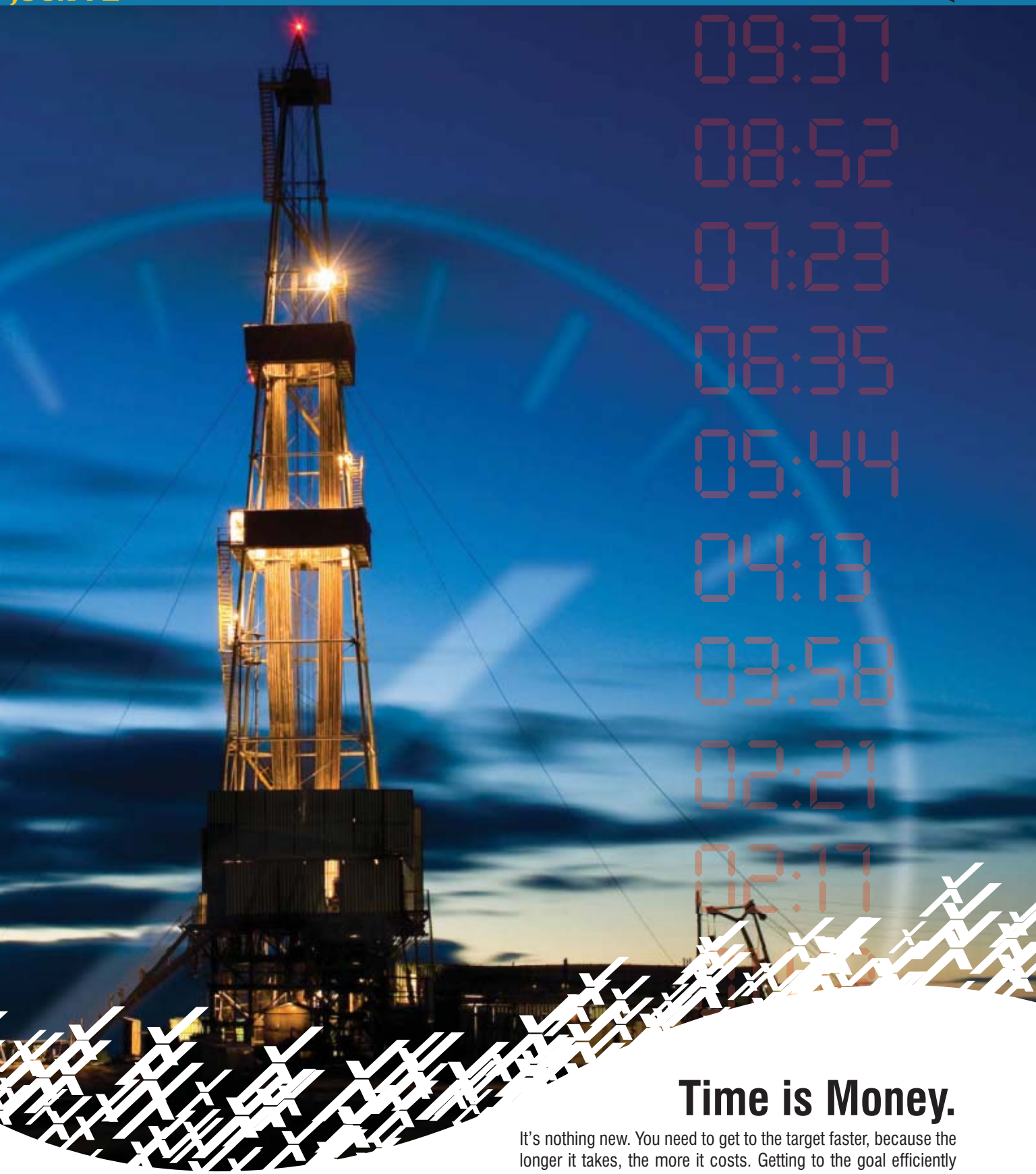


Note: Monthly average count

BAKER HUGHES RIG COUNT: US / CANADA



Note: End of week average count



Time is Money.

It's nothing new. You need to get to the target faster, because the longer it takes, the more it costs. Getting to the goal efficiently requires information, accurate, reliable information. That's where we come in, with the original Survey on Connection™ MWD tools, Extreme Engineering will get you there, faster.

EXTREME™ ENGINEERING

24/7 SUPPORT 1-888-MWD-0-24/7
[1.888.693.0247]

Home of the Most Advanced Unmanned Wellbore Monitoring Systems

XPULSE™ XEM™

www.ExtremeEng.com

tives of the company were put under house arrest last December. Another Total executive who doesn't live in Italy, was also considered implicated. A total of 15 people, including a Democratic Party deputy, are involved.

Tempa Rossa oil field was discovered by an Italian company in the late 1980s. The development concession was awarded to Total in 2002. It is scheduled to be on stream in 2011 with production estimated at 50,000 b/d.

Nexen discovers oil in UK North Sea

Nexen Inc. said its Hobby exploration well in the UK North Sea discovered oil on Block 20/1N near the Golden Eagle discovery.

Future appraisal is pending in the Golden Eagle area, which includes discoveries at Golden Eagle, Pink, and now Hobby.

The Pink discovery well encountered 57 ft of net oil pay and was followed up with a sidetrack delineation well that encountered 134 ft of net oil pay.

Pink might be codeveloped with Golden Eagle. Nexen has a 34% operated interest in Golden Eagle and a 46% operated working interest in Pink.

It operates Hobby with 34% interest. Other partners are Maersk Oil North Sea UK Ltd. 36% interest, Petro-Canada 25% interest, and Edinburgh Oil & Gas 5% interest.

Nexen strengthens position in Northeast BC

Nexen Inc., Calgary, has 100% interest in 126,000 acres in Northeast British Columbia in an emerging Devonian shale gas play that could become one of North America's most significant shale gas plays.

The land position includes 88,000 acres in the Dilly Creek area of the Horn River basin.

Nexen spent $180 million in 2008 to drill, complete, and test wells and build infrastructure. One horizontal well was completed and tied in last winter and is producing at rates in line with expectations and competitor wells. Nexen plans to complete and tie in two wells later this winter. It is building all-season roads.

The company in 2009 plans to enhance its understanding of optimal drilling and fracturing techniques, including by drilling and testing multiple wells from a single pad. Three of the wells are to be drilled and completed by midyear and on production before winter. The other wells will be drilled later subject to favorable economic and financial conditions.

Nexen previously estimated that the Dilly Creek lands contain 3-6 tcf of recoverable contingent resource. Further appraisal activity is required before it can finalize these estimates, establish commerciality, and book reserves.

Equatorial Guinea's Douala gets another find

Noble Energy Inc., Houston, said its Carmen exploration well near the southeast corner of Block O in the Douala basin off Equatorial Guinea is an oil and gas discovery.

The well, drilled to 11,550 ft in 150 ft of water, cut 26 ft of net oil pay and 13 ft of net gas pay. It was drilled to test a Lower Miocene reservoir and won't be flow-tested for now, Noble Energy said.

The 10th successful well on the acreage, Carmen is the first oil discovery on Block O, which also contains the Belinda and Felicita gas-condensate discoveries. Carmen confirmed that the oil sourcing extends from Block I, where the company has the Diega and Benita oil discoveries.

Noble Energy plans to recalibrate seismic to identify other similar opportunities while it plans for first production in 2012. ✦

Drilling & Production — *Quick Takes*

TNK-BP starts production from Siberian fields

Anglo-Russian oil joint venture TNK-BP Holding reported it has started commercial production at Urna and Ust-Tegus fields in the Uvat area of the Tyumen region in Siberia, feeding crude into the 264-km pipeline that connects the fields with the OAO Transneft pipeline system.

Urna and Ust-Tegus, which lie in the eastern part of Uvat, hold an estimated 300 million tonnes of oil in place, including 100 million tonnes of reserves. Plans call for the production of some 1.5 million tonnes of crude from the fields in 2009.

At the same time, TNK-BP expects to spend some $500 million on the Uvat project, including the drilling of development wells and construction of other necessary field facilities.

TNK-BP said it has invested $925 million in field development and construction at the fields.

In 2008, TNK-BP increased its oil production over 2007's by 2.6% to 601 million boe, the company said.

Nexus enters into negotiations for FPSO

Nexus Energy Ltd., Melbourne, has entered negotiations with Single Buoy Moorings (SBM) for the supply of a floating production, storage, and offloading vessel for its Crux liquids project in the Browse basin off Western Australia.

The negotiations center on the integrated construction, supply, and operation of an FPSO.

SBM has already been involved in the engineering and design of the gas processing, liquids extraction, and compressions facilities for the project.

Nexus says it also has finalized a settlement with FPSO supplier Viking Oil & Gas International and Viking Shipping following the termination of a memorandum of understanding signed in 2007 for the project. Nexus will pay Viking $12 million by the end of May. A further contingent payment of $5 million is to be made later in 2009 if certain unstated major divestment and liquidity events occur.

Petrobras, Mitsubishi plan $830 million drillship

Brazil's Petroleo Brasileiro SA (Petrobras) and Mitsubishi Corp. have agreed to form a 50-50 joint venture to construct and operate a drillship having the capacity to drill in water 10,000 ft deep.

The firms said the ship, which is to be completed and delivered in June 2010, will cost $830 million. The two firms said they will cover 10-15% of the cost of the vessel, with the new joint venture to procure the rest of the funds itself.

On delivery, the joint venture will charter out the vessel to an affiliate of Schahin Engenharia SA, a leading drillship operator in Brazil. The Brazilian firm will provide drilling services for the exploration and development of Petrobras's deepwater oil and gas fields in Brazil and overseas.

The announcement follows reports last December that Petrobras obtained $750 million in financing from a group of Japanese banks, including Sumitomo Mitsui Banking Corp., Mizuho Corporate Bank, and Banco de Tokyo-Mitsubishi UFJ Ltd.

Petrobras said the money would be used to finance its investment program, including expansion of a refinery based in Sao Jose dos Campos, Sao Paulo.

The Brazilian firm, which said the loans will have a maturity of 10 years, did not immediately reveal the financing cost or other details as the contract has a confidentiality clause. However, Petrobras's Chief Financial Officer Almir Barbassa said the conditions of the loan were "pretty reasonable" and "attractive," although "not as good as a year ago."

PDVSA pays due bills for Mariscal Sucre drillship

Neptune Marine & Drilling Ltd., a subsidiary of Singapore-based Jasper Holdings, said Venezuela's state-owned Petroleos de Venezuela SA (PDVSA) has paid $25.95 million to settle overdue bills in connection with its Mariscal Sucre natural gas project.

The payments cover, among others, all day rate invoices for drilling services provided to PDVSA from Oct. 1 to Dec 18, 2008, Neptune said, adding that it "continues to operate under the drilling contract with PDVSA."

With the payments from PDVSA, Neptune said, "certain breaches in the loan agreement entered into between another subsidiary, Neptune Marine Invests AS and certain banks have also been cured."

Last June, PDVSA took delivery of the drillship Neptune Discoverer under a $785 million contract with Neptune for the drilling of 21 wells at the offshore Mariscal Sucre natural gas project.

Since then, the Mariscal Sucre project has seen several key developments, including a 2,500-sq-km, 3D seismic survey conducted over the block in September by Norway's SCAN Geophysical.

"The first processing steps are very promising and show very good data quality, which will allow PDVSA further to refine its development in this area," PDVSA said of the survey.

Then, in November, Atlantida Socotherm, a subsidiary of Socotherm, was awarded a contract for the concrete weight coating of the 115-km Dragon-Cigma pipeline that will be installed as part of the Mariscal Sucre LNG project.

The project is one of three major developments being developed by PDVSA, each of which will consist of a separate liquefaction train at the Gran Mariscal de Ayacucho (Cigma) natural gas complex in Guiria.

The first train will source gas from the Plataforma Deltana project, with exports estimated at 4.7 million tonnes/year. PDVSA's foreign partners include Galp, Chevron, Qatar Petroleum, Mitsubishi, and Mitsui.

The second train will source gas from the Mariscal Sucre project, also exporting an estimated 4.7 million tonnes/year. PDVSA's foreign partners for this project include Galp, Enarsa, Itochu, Mitsubishi, and Mitsui.

The third train will source an as-yet undetermined amount of gas from Blanquilla-Tortuga fields. PDVSA's foreign partners include Gazprom, Petronas, Eni, and Energias de Portugal.

According to PDVSA, the total investment in the three LNG projects could reach $20 billion, with first exports expected by 2013. ✦

Processing — *Quick Takes*

Eni lets refinery contract to GE Oil & Gas

Eni SPA has let a contract to GE Oil & Gas for the largest refinery reactors of their type ever to be manufactured. The reactors will be a critical part of Eni refining and marketing division's project to boost production at its refinery in Sannazzaro, Italy.

The reactors, which will weigh 2,000 tons each, will be the centerpiece of a new process technology designed to enable Eni to produce more middle distillates from each barrel of feedstock.

The refinery will highlight a proprietary Eni process called Eni slurry technology that enables increased efficiency in unconventional oils, heavy oils, and residues distillation. Unlike other heavy oil cracking processes, the process produces no residues.

The two reactors are scheduled for delivery to the Eni refinery in first quarter 2011, with commercial operation expected in 2012.

Eni mulls over downstream asset divestitures

Italy's Eni SPA has said its capital spending on refining and marketing will be slashed by 30% to €2.8 billion under its strategic plan because of the weak global economic outlook. It also will reduce its workforce in this area by 6% in Italy.

Therefore, the company is pondering selling some of its downstream assets in Italy, including its 84,000 b/d Livorno refinery on the Tuscan coast in northern Italy.

Angelo Caridi, head of refining and marketing at Eni, said at a briefing in London that falling global demand, increasing energy efficiency, and the growth of biofuels were behind the poor outlook.

The amount of high value middle distillates, such as diesel fuel, will rise to 45% of refining output in 2012 compared with 40% in 2008.

"In refining, Eni plans to increase the complexity and the yield in medium distillates, exploiting proprietary technologies," it said.

This year, Eni plans to start up three hydrocracking units and in 2012, a new plant at its Sannazzaro refinery, which would account for the majority of investments in this area under the plan.

The company saved more than €1 billion at the end of 2008 through its efficiency program. This figure is expected to be doubled by 2012, both in real terms and versus the 2005 baseline.

Indonesia outlines refinery, upgrade plans

Indonesia's state-owned PT Pertamina, aiming to reduce fuel

imports by boosting domestic supply, plans to construct two new refineries and upgrade an existing facility.

"We still import fuels in a large volume," said Indonesian President Bambang Susilo Yudhoyono, adding that, as a matter of economic efficiency, Pertamina "will build three refineries within 3-5 years."

Pertamina Corp. Sec. Toharso said two of the planned refineries would be new: one in Bojonegara, Banten, and another in Tuban, East Java. The third project, meanwhile, will be an expansion of the existing refinery at Balongan in West Java.

The total capacity of the three planned refineries will be 400,000 b/d, Toharso said, adding that Pertamina is looking for partners for oil supplies as well as for financing of the new facilities.

"We're considering an Iranian company to become our crude oil supplier," Toharso said. "But the process is progressing slowly and we're trying to expedite this."

The decision to construct new refineries comes as Indonesia's domestic demand has far outstripped Pertamina's production.

In 2008, Pertamina produced 227.2 million bbl of fuels and imported 142.1 million bbl. In 2007, Pertamina produced 226.1 million bbl of fuels and imported 138.7 million bbl.

However, despite the need for new refining capacity, officials earlier this week said that Pertamina has no plan to import diesel oil and kerosine this year under the firm's public service obligation (PSO) as production by its own refineries would be sufficient.

On Feb. 11, the director general of oil and gas of the ministry of energy and mineral resources, Evita Legowo, told a meeting of the Energy Commission of the House of Representatives that Pertamina would import only premium gasoline this year.

She said that premium gasoline consumption under the PSO this year had been set at 123.856 million bbl, while the refineries could produce only 68.35 million bbl, leaving Pertamina to import 55.506 million bbl. ✦

Transportation — *Quick Takes*

Japan welcomes LNG supplies from Sakhalin-2

Japanese Prime Minister Taro Aso and Russian President Dmitry Medvedev are scheduled to attend a ceremony Feb. 18 on Sakhalin Island to mark the onset of operations at the Sakhalin-2 LNG liquefaction plant at Prigorodnoye.

Under the Sakhalin-2 project, natural gas will be transported from offshore fields to the Prigorodnoye liquefaction plant for the production of 9.6 million tonnes/year (tpy) of LNG, with 60% of it bound for Japan.

Under contracts of as long as 20 years, Russian LNG will account for 7% of Japan's total LNG imports, allowing the Asian nation to diversify its sources of energy supply.

At their Feb. 18 meeting, the Russian and Japanese leaders also will discuss possible funding for future LNG projects, such as Sakhalin-3, according to Eiichi Sasaki, energy representative for the Japan Bank for International Cooperation (JBIC).

In fact, Sasaki told delegates at the Russian Shelf 2009 conference that JBIC "is prepared to support Sakhalin-3 if Japanese companies are involved." He added that JBIC is primarily interested in projects in the Far East and Sakhalin that are focused on energy supply to Japan.

The Sakhalin-3 project includes the Veninsky block being developed by Russia's state-owned OAO Rosneft and China's Sinopec, and the Kirinsky, East Odoptinsky, and Ayashsky blocks, which have yet to be assigned.

Sakhalin-3 is expected to come on stream in 2017-20, according to Russia's draft Gas Industry Development Strategy, with peak production reaching as much as 28.6 billion cu m/year of gas.

The onset of supplies of LNG from Sakhalin-2 coincided with reports that a consortium of Japanese utility firms has agreed to a drastic cut in supplies from Indonesia, falling to 2-3 million tpy from 12 million tpy.

Raden Priyono, chairman of Indonesia's upstream oil and gas regulating body BPMigas, said that under the new agreement, the Japanese consortium will buy 3 million tpy of LNG during 2011-15, and 2 million tpy during 2016-20.

The consortium, comprised of Kansai Electric Power Co., Osaka Gas Co., Chubu Electric Power Co., Kyushu Electric Power Co., Toho Gas Co., and Nippon Steel Corp., will buy a total of 25 million tonnes of gas from Bontang LNG plants in East Kalimantan.

Priyono, who said that Japanese buyers have agreed to waive any penalties for undelivered LNG, added that the new contract price will be "much higher" than the price under previous contracts.

Libya takes delivery of two oil tankers

Libya's state-owned General National Maritime Transport Co. (GNMTC) has taken delivery of two 115,000-dwt oil tankers, the Al-Qadisiyah and Al-Jala, from Cido Shipping of Japan.

The Al-Qadisiyah, built in 2008 and formerly called the Pacific Fantasy, holds 835,000 bbl of oil, while the Al-Jala, built in 2007 and formerly called the Pacific Light, holds 825,000 bbl of oil.

The two deliveries are part of a six-ship deal GNMTC brokered last December which also included four Aframaxes of around 115,000 dwt each, which the Libyan firm bought from Turkey's Geden Lines.

The complete six-ship purchase, with a total transport capacity of some 5 million bbl, enabled Libya to expand its oil shipping capacity to 11.8 million bbl, according to state media.

State news agency Jana quoted GNMTC's development department chief Tarek Youssef as saying the recent purchases bring GNMTC's total fleet to 18 tankers. Of these, 13 are crude carriers, 3 are oil products carriers, and 2 are LPG carriers.

In making the purchases, Jana said, "The company took advantage of the current global crisis to acquire the tankers at prices 20% lower than in normal circumstances."

Jana credited Libyan leader Muammar Gadhafi's son Hannibal Gadhafi, who is the manager of GNMTC, for the business strategy of buying ships during a global economic downturn, which had adversely affected the shipping industry.

Jana quoted the younger Qadhafi as saying the price paid for each ship was $67-68 million, which compared favorably with an earlier asking price of $85-90 million. ✦

Letters

Fission for hydrogen

In a response to Duncan Macleod's article "Oil industry ramps up for hydrogen vehicles," Thomas Wyman argues that hydrogen will never be more than a "boutique fuel" (OGJ, Dec. 8, 2008, p. 26; Jan. 19, 2009, p. 14). I would say that Mr. Wyman is correct if and only if we live in a world void from the laws of physics that Albert Einstein discovered.

It is a simple and undisputable fact that the energy from the fission of one atom of uranium emits about 10,000,000 times the energy one gets from burning one atom of coal. This observation is leading the US and other countries in the world that comprise the Generation IV International Forum (GIF) to utilize the waste heat from very high-temperature nuclear reactors to economically make hydrogen from water. These "very high-temperature" nuclear reactors are called Gen-IV for being the fourth generation of nuclear reactor design. Of course the advantage to creating energy by consuming hydrogen in an oxygen environment is that your waste product is water.

I do not mean to imply that this Gen-IV technology can be utilized either tomorrow or even in 10 years. However, if the US and world will commit the required resources, this technology can be fully developed to not only safely generate electricity but also simultaneously and economically make hydrogen from water plus also desalinate brackish waters. This hydrogen could first be used to make synthetic hydrocarbons to fuel our existing internal combustion engines until the hydrogen fuel cell economy is fully established.

As Americans, let's stop living in the dark ages and open our eyes to the possibilities that available technologies can provide.

James F. Wright, PhD
Director, HT³R Project
University of Texas of the Permian Basin
Odessa, Tex.

Calendar

✦ Denotes new listing or a change in previously published information.

OIL&GAS JOURNAL online

Additional information on upcoming seminars and conferences is available through OGJ Online, Oil & Gas Journal's Internet-based electronic information source at http://www.ogjonline.com.

2009

FEBRUARY

ASEG/PESA International Geophysical Conference & Exhibition, Adelaide, +61 8 8352 7099, +61 8 8352 7088 (fax), e-mail: ASEG2009@sapro.com.au, website: www.sapro.com.au/aseg.htm. 22-25.

Laurance Reid Gas Conditioning Conference, Norman, Okla., (405) 325-2248, (405) 325-7164 (fax), e-mail: bettyk@ou.edu, website: www.engr.outreach.ou.edu. 22-25.

Nitrogen + Syngas International Conference and Exhibition, Rome, +44 20 7903 2167, +44 20 7903 2432 (fax), e-mail: conferences@crugroup.com, website: http://crugroup.com. 22-25.

CERI Natural Gas Conference, Calgary, (403) 282-1231, (403) 284-4181 (fax), e-mail: conference@ceri.ca, website: www.ceri.ca. 23-24.

International Pump Users Symposium, Houston, (979) 845-7417, (979) 847-9500 (fax), e-mail: inquiry@turbo-lab.tamu.edu, website: http://turbolab.tamu.edu. 23-26.

MARCH

EAGE North African/Mediterranean Petroleum and Geosciences Conference & Exhibition, Tunis, +31 88 995 5055, +31 30 6343524 (fax), e-mail: eage@eage.org, website: www.eage.org. 2-4.

SPE Research & Development Conference, Lisbon, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 3-4.

APPEX Prospect and Property Expo, London, (918) 560-2616, (918) 560-2684 (fax), e-mail: convene@aapg.org, website: www.aapg.org. 3-5.

Subsea Tieback Forum & Exhibition, San Antonio, (918) 831-9160, (918) 831-9161 (fax), e-mail: registration@pennwell.com, website: www.subseatiebackforum.com. 3-5.

GPA Annual Convention, San Antonio, (918) 493-3872, (918) 493-3875 (fax), e-mail: pmirkin@gasprocessors.com, website: www.gasprocessors.com. 8-11.

Doha Natural Gas Conference & Exhibition, Doha, e-mail: gascon@qp.com.qa, website: www.dohagascon.com.qa. 9-12.

ARTC Annual Meeting, Kuala Lumpur, +44 1737 365100, +44 1737 365101 (fax), e-mail: events@gtforum.com, website: www.gtforum.com. 10-12.

European Fuels Conference, Paris, +44 (0) 1242 529 090. +44 (0) 1242 529 060 (fax), e-mail: wra@theenergyexchange.co.uk, website: www.wraconferences.com. 10-12.

Turkish International Oil & Gas Conference & Showcase (TUROGE), Ankara, +44 (0) 207 596 5233, +44 (0) 207 596 5106 (fax), e-mail: oilgas@ite-exhibitions.com, website: www.oilgas-events.com. 10-12.

Middle East Oil & Gas Show & Conference (MEOS), Manama, +973 17 550033, +973 17 553288 (fax), e-mail: aeminfo@batelco.com.bh, website: www.allworldexhibitions.com/oil. 15-18.

Purvin & Gertz Annual International LPG Seminar, The Woodlands, Tex., (281) 367-9797, website: www.purvingertz.com. 16-19.

Gas Asia, Kuala Lumpur, +44 (0) 1242 529 090, +44 (0) 1242 529 060 (fax), e-mail: wra@theenergyexchange.co.uk, website: www.theenergyexchange.co.uk. 17-18.

SPE/IADC Drilling Conference & Exhibition, Amsterdam, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 17-19.

Latin American Meeting on Energy Economics, Santiago, 56 2 3541411, 56 2 5521608 (fax), e-mail: info@elaee.org, website: www.elaee.org. 22-24.

NPRA Annual Meeting, San Antonio, (202) 457-0480, (202) 457-0486 (fax), e-mail: info@npra.org, website: www.npra.org. 22-24.

ACS Spring National Meeting & Exposition, Salt Lake City, (202) 872-4600, e-mail: service@acs.org, website: www.acs.org. 22-26.

NACE Corrosion Conference & Expo, Atlanta, (281) 228-6200, (281) 228-6300 (fax), website: www.nace.org/c2009. 22-26.

SPE Americas E&P Environmental and Safety Conference, San Antonio, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 23-25.

API Spring Petroleum Measurement Standards Meeting, Dallas, (202) 682-8000, (202) 682-8222 (fax), website: www.api.org. 23-26.

Asian Biofuels Roundtable, Kuala Lumpur, +44 (0) 207 067 1800, +44 207 430 0552 (fax), e-mail: a.ward@theenergyexchange.co.uk, website: www.wraconferences.com/FS1/AB1register.html. 24-25.

SPE Western Regional Meeting, San Jose, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 24-26.

Offshore Mediterranean Conference & Exhibition (OMC), Ravenna, +39 0544 219418, +39 0544 39347 (fax), e-mail: conference@omc.it, website: www.omc2009.it. 25-27.

NPRA International Petrochemical Conference, San Antonio, (202) 457-0480, (202) 457-0486 (fax), e-mail: info@npra.org, website: www.npra.org. 29-31.

Petroleum Geology Conference, London, +44 (0)20 7434 9944, +44 (0)20 7494 0579 (fax), e-mail: georgina.worrall@geolsoc.org.uk, website: www.geolsoc.org.uk. Mar. 30-Apr. 2.

SPE/ICoTA Coiled Tubing & Well Intervention Conference & Exhibition, The Woodlands, Tex., (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. Mar. 31-Apr. 1.

Offshore Asia/Multiphase Pumping & Technologies Conference & Exhibition, Bangkok, 918) 831-9160, (918) 831-9161 (fax), e-mail: attendingOA@pennwell.com, website: www.offshoreasiaevent.com. Mar. 31-Apr. 2.

APRIL

Georgian International Oil, Gas, Energy and Infrastructure Conference & Showcase (GIOGIE), Tbilisi, +44 (0) 207 596 5233, +44 (0) 207 596 5106 (fax), e-mail: oilgas@ite-exhibitions.com, website: www.oilgas-events.com. 2-3.

SPE Production and Operations Symposium, Oklahoma City, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 4-8.

SPE Digital Energy Conference, Houston, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 7-8.

ATYRAU Regional Oil & Gas Exhibition & OilTech Kazakhstan Petroleum Technology Conference, Atyrau, +44 (0) 207 596 5233, +44 (0) 207 596 5106 (fax), e-mail: oilgas@ite-exhibitions.com, website: www.oilgas-events.com. 7-9.

Rocky Mountain Unconventional Resources Conference & Exhibition, Denver, (918) 831-9160, (918) 831-9161 (fax), e-mail: registration@pennwell.com, website: www.RMURconference.com. 14-16.

GPA Mid-continent Annual Meeting, Oklahoma City, (918) 493-3872, (918) 493-3875 (fax), website: www.gasprocessors.com. 16.

Middle East Petroleum & Gas Conference, Dubai, 65 6338 0064, 65 6338 4090 (fax), e-mail: info@cconnection.org, website: www.cconnection.org. 19-21.

ERTC Coking & Gasification Conference, Budapest, 44 1737 365100, +44 1737 365101 (fax), e-mail: events@gtforum.com, website: www.gtforum.com. 20-22.

Hannover Messe Pipeline Technology Conference, Hannover, +49 511 89 31240, +49 511 89 32626 (fax), website: www.hannovermesse.de. 20-24.

IADC Drilling HSE Middle East Conference & Exhibition, Abu Dhabi, (713) 292-1945, (713) 292-1946 (fax), e-mail: conferences@iadc.org, website: www.iadc.org. 21-22.

API Pipeline Conference, Fort Worth, Tex., (202) 682-8000, (202) 682-8222 (fax), website: www.api.org. 21-22.

Pipeline Transport Conference & Exhibition, Moscow, +43 1 230 85 35 33, website: www.expopipeline.com. 21-23.

Base Oils and Lubricants in Russia & CIS Conference, Moscow, +44 (0) 1242 529 090, +44 (0) 1242 529 060 (fax), e-mail: wra@theenergyexchange.co.uk, website: www.wraconferences.com. 22-23.

Instrumentation Systems Automation Show & Conference, (ISA), Calgary, Alta., (403) 209-3555, (403) 245-8649 (fax), website: www.petroleumshow.com. 22-23.

Calendar

CPS/SEG International Geophysical Conference & Exposition, Beijing, (918) 497-5500, (918) 497-5557 (fax), e-mail: semery@seg.org, website: www.seg.org. 24-27.

AIChE Spring National Meeting, Tampa, (203) 702-7660, (203) 775-5177 (fax), website: www.aiche.org. 26-30.

API Spring Refining and Equipment Standards Meeting, Denver, (202) 682-8000, (202) 682-8222 (fax), website: www.api.org. 27-29.

EAGE European Symposium on Improved Oil Recovery, Paris, +31 88 995 5055, +31 30 6343524 (fax), e-mail: eage@eage.org, website: www.eage.org. 27-29.

ENTELEC Conference & Expo, Houston, (972) 929-3169, (972) 915-6040 (fax), e-mail: blaine@entelec.org, website: www.entelec.org. Apr. 29-May 1.

MAY

EAGE International Petroleum Conference & Exhibition, Shiraz, +31 88 995 5055, +31 30 6343524 (fax), e-mail: eage@eage.org, website: www.eage.org. 4-6.

Offshore Technology Conference (OTC), Houston, (972) 952-9494, (972) 952-9435 (fax), e-mail: service@otcnet.org, website: www.otcnet.org. 4-7.

GPA Permian Basin Annual Meeting, Austin, (918) 493-3872, (918) 493-3875 (fax), website: www.gasprocessors.com. 5.

Interstate Oil and Gas Compact Commission Midyear Meeting (IOGCC), Anchorage, (405) 525-3556, (405) 525-3592 (fax), e-mail: iogcc@iogcc.state.ok.us, website: www.iogcc.state.ok.us. 10-12.

ERTC Asset Maximisation Conference, Prague, 44 1737 365100, +44 1737 365101 (fax), e-mail: events@gtforum.com, website: www.gtforum.com. 11-13.

ACHEMA International Exhibition Congress, Frankfurt, +1 5 168690220, +1 5 168690325 (fax), e-mail: amorris77@optonline.net, website: http://achemaworldwide.dechema.de. 11-15.

IADC Environmental Conference & Exhibition, Stavanger, (713) 292-1945, (713) 292-1946 (fax), e-mail: conferences@iadc.org, website: www.iadc.org. 12-13.

North American Unconventional Oil & Gas Conference & Exposition, Denver, (403) 209-3555, (403) 245-8649 (fax), website: www.petroleumshow.com. 12-13.

NPRA National Safety Conference, Grapevine, Tex., (202) 457-0480, (202) 457-0486 (fax), e-mail: info@npra.org, website: www.npra.org. 12-13.

International School of Hydrocarbon Measurement, Norman, Okla., (405) 325-1217, (405) 325-1388 (fax), e-mail: lcrowley@ou.edu. Website: www.ishm.info. 12-14.

Uzbekistan International Oil & Gas Exhibition & Conference, Tashkent, +44 (0) 207 596 5233, +44 (0) 207 596 5106 (fax), e-mail: oilgas@ite-exhibitions.com, website: www.oilgas-events.com. 12-14.

NPRA Reliability & Maintenance Conference, Grapevine, Tex., (202) 457-0480, (202) 457-0486 (fax), e-mail: info@npra.org, website: www.npra.org. 19-22.

IADC Drilling Onshore Conference & Exhibition, Houston, (713) 292-1945, (713) 292-1946 (fax), e-mail: conferences@iadc.org, website: www.iadc.org. 21.

Gastech International Conference & Exhibition, Abu Dhabi, +44 (0) 1737 855000, +44 (0) 1737 855482 (fax), website: www.gastech.co.uk. 25-28.

APPEA Conference & Exhibition, Darwin, +61 7 3802 2208, e-mail: jhood@appea.com.au. website: www.appea2009.com.au. May 31-Jun. 3.

SPE Latin American and Caribbean Petroleum Engineering Conference, Cartagena, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. May 31-Jun. 3.

JUNE

Caspian International Oil & Gas/Refining & Petrochemicals Exhibition & Conference, Baku, +44 (0) 207 596 5233, +44 (0) 207 596 5106 (fax), e-mail: oilgas@ite-exhibitions.com, website: www.oilgas-events.com. 2-5.

Asia Oil & Gas Conference, Kuala Lumpur, 65 62220230, 65 62220121 (fax), e-mail: info@cconnection.org, website: www.cconnection.org. 7-9.

AAPG Annual Meeting, Denver, (918) 560-2679, (918) 560-2684 (fax), e-mail: convene@aapg.org, website: www.aapg.org. 7-10.

PIRA Scenario Planning Conference, Houston, (212) 686-6808, (212) 686-6628 (fax), e-mail: sales@pira.com, website: www.pira.com. 8.

ILTA Annual International Operating Conference & Trade Show, Houston, (202) 842-9200, (202) 326-8660 (fax), e-mail: info@ilta.org, website: www.ilta.org. 8-10.

International Oil Shale Symposium, Tallinn, Estonia, +372 71 52859, e-mail: Rikki.Hrenko@energia.ee, website: www.oilshalesymposium.com. 8-11.

SPE EUROPEC/EAGE Conference and Exhibition, Amsterdam, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 8-11.

PIRA Understanding Global Oil Markets Seminar, Houston, (212) 686-6808, (212) 686-6628 (fax), website: www.pira.com. 9-10.

GO-EXPO Gas and Oil Exposition, Calgary, Alta., (403) 209-3555, (403) 245-8649 (fax), website: www.petroleumshow.com. 9-11.

Petro.t.ex Africa Exhibition & Conference, Johannesburg, +27 21 713 3360, +27 21 713 3366 (fax), website: www.fairconsultants.com. 9-11.

Oil and Gas Asia Exhibition (OGA), Kuala Lumpur, +60 (0) 3 4041 0311, +60 (0) 3 4043 7241 (fax), e-mail: oga@oesallworld.com, website: www.allworldexhibitions.com/oil. 10-12.

ASME Turbo Expo, Orlando, (973) 882-1170, (973) 882-1717 (fax), e-mail: infocentral@asme.org, website: www.asme.org. 13-17.

Society of Petroleum Evaluation Engineers (SPEE) Annual Meeting, Santa Fe, NM, (713) 286-5930, (713) 265-8812 (fax), website: www.spee.org. 14-16.

PIRA London Energy Conference, London, (212) 686-6808, (212) 686-6628 (fax), e-mail: sales@pira.com, website: www.pira.com. 15.

IPAA Midyear Meeting, Dana Point, Calif., (202) 857-4722, (202) 857-4799 (fax), website: www.ipaa.org. 15-17.

PIRA Scenario Planning Conference, London, (212) 686-6808, (212) 686-6628 (fax), e-mail: sales@pira.com, website: www.pira.com. 16.

Atlantic Canada Petroleum Show, St. John's, Newfoundland & Labrador, 403) 209-3555, (403) 245-8649 (fax), website: www.petroleumshow.com. 16-17.

IADC World Drilling Conference & Exhibition, Dublin, (713) 292-1945, (713) 292-1946 (fax), e-mail: conferences@iadc.org, website: www.iadc.org. 17-18.

PIRA Understanding Global Oil Markets Seminar, London, 44 1493 751 316, e-mail: miles@pira.com, website: www.pira.com. 17-18.

AAPL Annual Meeting, Clearwater Beach, Fla., (817) 847-7700, (817) 847-7704 (fax). e-mail: aapl@landman.org, website: www.landman.org. 17-20.

IAEE International Conference, San Francisco, (216) 464-2785, (216) 464-2768 (fax), website: www.usaee.org. 21-24.

Society of Professional Well Log Analysts Annual Symposium (SPWLA), The Woodlands, Tex., (713) 947-8727, (713) 947-7181 (fax), website: www.spwla.org. 21-24.

SPWLA Annual Symposium, The Woodlands, Tex., (713) 947-8727, (713) 947-7181 (fax), e-mail: webmaster@spwla.org, website: www.spwla.org. 21-24.

International Offshore and Polar Engineering Conference (ISOPE), Osaka, (650) 254-1871, (650) 254-2038 (fax), e-mail: meetings@isope.org, website: www.isope.org. 21-26.

Asia LPG Seminar, Singapore, (713) 331-4000. (713) 236-8490 (fax), website: www.purvingertz.com. 22-25.

API Exploration & Production Standards Oilfield Equipment and Materials Conference, Westminister, Colo., (202) 682-8000, (202) 682-8222 (fax), website: www.api.org. 22-26.

Moscow International Oil & Gas Exhibition (MIOGE) & Russian Petroleum & Gas Congress, Moscow, +44 (0) 207 596 5233, +44 (0) 207 596 5106 (fax), e-mail: oilgas@ite-exhibitions.com, website: www.oilgas-events.com. 23-26.

JULY

Rocky Mountain Energy Epicenter Conference, Denver, (303) 228-8000, e-mail: conference@epicenter2008.org, website: www.denverconvention.com. 7-9.

API Offshore Crane Operations and Safety Conference, Houston, (202) 682-8000, (202) 682-8222 (fax), website: www.api.org. 14-15.

Oil Sands and Heavy Oil Technologies Conference & Exhibition, Calgary, Alta., (918) 831-9160, (918) 831-9161 (fax), e-mail: registration@pennwell.com, website: http://oshot09.events.pennnet.com/fl/index.cfm. 14-16.

AUGUST

SPE Asia Pacific Health, Safety, Security and Environment Conference and Exhibition, Jakarta, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 4-6.

SPE Asia Pacific Oil and Gas Conference and Exhibition, Jakarta, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 4-6.

EnerCom's The Oil & Gas Conference, Denver, (303) 296-8834, email: kgrover@enercominc.com, website: www.theoilandgasconference.com. 9-13.

ACS Fall National Meeting & Exposition, Washington, (202) 872-4600, e-mail: service@acs.org, website: www.acs.org. 16-20.

IADC Well Control Conference of the Americas & Exhibition, Denver, (713) 292-1945, (713) 292-1946 (fax), e-mail: conferences@iadc.org, website: www.iadc.org. 25-26.

Summer NAPE, Houston, (817) 847-7700, (817) 847-7704 (fax), e-mail: info@napeexpo.com, website: www.napeonline.com. 27-28.

SEPTEMBER

Oil & Gas Maintenance Technology North America Conference, New Orleans, (918) 831-9160, (918) 831-9161 (fax), e-mail: registration@pennwell.com, website: www.ogmtna.com. 1-3.

EAGE Near Surface European Meeting, Dublin, +31 88 995 5055, +31 30 6343524 (fax), e-mail: eage@eage.org, website: www.eage.org. 7-9.

IAEE European Conference, Vienna, (216) 464-5365, e-mail: iaee@iaee.org, website: www.iaee.org. 7-10.

Offshore Europe Conference, Aberdeen, +44 (0) 20 7299 3300, e-mail: nbradbury@spe.org, website: www.offshore-europe.co.uk. 8-11.

GITA's GIS Annual Oil & Gas Conference, Houston, (303) 337-0513, (303) 337-1001 (fax), e-mail: info@gita.org, website: www.gita.org/ogca. 14-16.

Polar Petroleum Potential 3P Conference, Moscow, (918) 584-2555, (918) 560-2665 (fax), website: www.aapg.org. 16-18.

ADC Drilling HSE Europe Conference & Exhibition, Amsterdam, (713) 292-1945, (713) 292-1946 (fax), e-mail: conferences@iadc.org, website: www.iadc.org. 23-24.

SPE Eastern Regional Meeting, Charleston, W.Va., (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 23-25.

ERTC Sustainable Refining Conference, Brussels, 44 1737 365100, +44 1737 365101 (fax), e-mail: events@gtforum.com, website: www.gtforum.com. 28-30.

DGMK Production and Use of Light Olefins Conference, Dresden, 040 639004 0, 040 639004 50, website: www.dgmk.de. 28-30.

IADC Advanced Rig Technology Conference, Houston, (713) 292-1945, (713) 292-1946 (fax), e-mail: conferences@iadc.org, website: www.iadc.org. 29.

Unconventional Gas International Conference & Exhibition, Fort Worth, Tex., (918) 831-9160, (918) 831-9161 (fax), e-mail: registration@pennwell.com, website: www.unconventionalgas.net. Sept. 29-Oct. 1.

ERTC Biofuels+ Conference, Brussels, 44 1737 365100, +44 1737 365101 (fax), e-mail: events@gtforum.com, website: www.gtforum.com. Sept. 30-Oct. 2.

OCTOBER

Interstate Oil and Gas Compact Commission Annual Meeting (IOGCC), Biloxi, Miss., (405) 525-3556, (405) 525-3592 (fax), e-mail: iogcc@iogcc.state.ok.us, website: www.iogcc.state.ok.us. 4-6.

SPE Annual Technical Conference and Exhibition, New Orleans, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 4-7.

World Gas Conference, Buenos Aires, +54 11 5252 9801, e-mail: registration@wgc2009.com, website: www.wgc2009.com. 5-9.

ISA EXPO, Houston, (919) 549-8411, (919) 549-8288 (fax), e-mail: info@isa.org, website: www.isa.org. 6-8.

Kazakhstan International Oil & Gas Exhibition & Conference (KIOGE), Almaty, +44 (0) 207 596 5233, +44 (0) 207 596 5106 (fax), e-mail: oilgas@ite-exhibitions.com, website: www.oilgas-events.com. 6-9.

NPRA Q&A and Technology Forum, Ft. Worth, Tex., (202) 457-0480, (202) 457-0486 (fax), e-mail: info@npra.org, website: www.npra.org. 11-14.

API Fall Petroleum Measurement Standards Meeting, Calgary, Alta., (202) 682-8000, (202) 682-8222 (fax), website: www.api.org. 12-15.

International Oil & Gas Exploration, Production & Refining Exhibition, Jakarta, +44 (0)20 7840 2100, +44 (0)20 7840 2111 (fax), e-mail: ogti@oesallworld.com, website: www.allworldexhibitions.com. 14-17.

SPE/EAGE Reservoir Characterization and Simulation Conference and Exhibition, Abu Dhabi, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 18-21.

GSA Annual Meeting, Portland, (303) 357-1000, (303) 357-1070 (fax), e-mail: meetings@geosociety.org, website: www.geosociety.org. 18-21.

SEG International Exposition and Annual Meeting, Houston, (918) 497-5500, (918) 497-5557 (fax), e-mail: register@seg.org, website: www.seg.org. 25-30.

SPE/IADC Middle East Drilling Conference & Exhibition, Manama, (972) 952-9393, (972) 952-9435 (fax), e-mail: spedal@spe.org, website: www.spe.org. 26-28.

Louisiana Gulf Coast Oil Exposition (LAGCOE), Lafayette, (337) 235-4055, (337) 237-1030 (fax), e-mail: lynette@lagcoe.com, website: www.lagcoe.com. 27-29.

Offshore Middle East Conference & Exhibition, Manama, (918) 831-9160, (918) 831-9161 (fax), e-mail: registration@pennwell.com, website: www.offshoremiddleeast.com. 27-29.

NOVEMBER

Deep Offshore Technology International Conference & Exhibition, Monte Carlo, (918) 831-9160, (918) 831-9161 (fax), e-mail: registration@pennwell.com, website: www.deepoffshoretechnology.com. 3-5.

Incentive to drill

Marilyn Radler
Senior Editor-Economics

The International Monetary Fund again has lowered its outlook for economic output this year, now seeing 0.5% in economic growth worldwide. This, combined with gloomy unemployment reports and other indicators, has dimmed the outlook for oil and gas supply and demand in the near term.

In a recent research report, Deutsche Bank analyst Adam Sieminski wrote that worldwide oil demand in 2009 will contract 1.5 million b/d from a year earlier. He said slowing investment and steep decline curves in mature basins imply that there will be a decline in non-OPEC oil supply for 2009, with more decline to come in 2010.

Drilling activity has indeed contracted in the past several months, and the investment needed to ensure there's enough supply for the market when demand growth returns is shrinking.

How bad?

An annual survey of oil and gas producers and service companies based in the US sheds light on how views have turned from just a year ago. This month accounting firm Grant Thornton LLP released its 2009 survey of upstream energy companies.

This seventh annual survey, conducted during fourth-quarter 2008, targeted senior executives of US independent oil and gas producers and service companies.

The more than 65 companies that responded to the Grant Thornton survey had average yearend 2008 total assets of $715 million and average 2008 fiscal year revenues of $432 million.

First, the outlook for employment has worsened from the previous survey. Only 35% of those surveyed expect employment levels at their companies to rise, down from 76% a year earlier. On the other hand, only 26% now anticipate difficulties hiring and retaining employees, down sharply from 85% just a year earlier.

With forecasted oil and gas prices the most important factors in capital spending decisions, the survey of company executives found that only 32% anticipated an increase in US capital expenditures in 2009, compared with 65% who anticipated a 2008 spending increase in the year-earlier survey. In addition to this dismal view of US spending, 92% of the respondents expect decreases or no change this year in capital spending outside the US.

This survey also found that the top concern of the respondents is the uncertainty of oil and gas prices, followed by the ability to obtain capital. Further, the respondents believe that incentives for increased US drilling are the best way to reduce energy prices for US consumers.

Incentives

Respondents want to see their corporate and industry leaders focused primarily on more commitment to exploration and production in the US. They also favor more efficiency in drilling through proved technology and would like to see a collaborative public and private energy policy over the next 3-5 years.

Broad Oak Energy Inc. Chairman and Chief Executive Officer David B. Braddock told the survey, "As independent E&P companies, we have no control over the price of the commodities we produce and sell, but we have complete control over the decision to continue drilling in a low-price environment. Our only course as prudent managers is to fight to reduce our [finding and development] costs enough to generate a marginal rate of return necessary to induce investment."

Whether the industry will see more or less incentive to drill in the near term is still in question, and hinges not only on commodity prices, but also on government policies.

On Feb. 10, US Interior Secretary Ken Salazar announced a strategy to develop an offshore energy plan. The strategy, which involves gathering information about conventional and renewable offshore resources and the potential impacts of developing those resources, effectively reinstated the moratorium on oil and gas development off the East Coast and in the eastern Gulf of Mexico.

Salazar said, "This rulemaking will allow us to move from the 'oil and gas only' approach of the previous Administration to the comprehensive energy plan that we need."

Reed Wood, partner-in-charge of Grant Thornton's energy practice, says the move to reinstate the moratorium was no surprise, but he finds that many people are optimistic that some of the previously restricted areas might be opened to oil and gas development.

However, Wood notes that the economy has continued to spiral downward in the few months since the survey of upstream companies was conducted. He says that if the survey were conducted today, the outlook for E&P spending would be even bleaker. ✦

OTC .09

2009 Offshore Technology Conference

4-7 May :: Reliant Park :: Houston, Texas, USA

The Offshore Technology Conference is the world's foremost event for the development of offshore resources in the fields of drilling, exploration, production, and environmental protection.

Plan to attend now!

www.otcnet.org/2009

OFFSHORE TECHNOLOGY CONFERENCE®

Editorial

Backward California

Partly because California officially lives in the past, Americans elsewhere must help the state deal with financial desperation. The $800 billion law Congress passed this month in an effort to stimulate the economy pushes an estimated $26 billion toward California. The state government has a budget deficit expected to reach a staggering $41 billion by the middle of 2010.

The generosity gives American taxpayers dollars-and-cents reasons to ask how a state with extraordinary endowments of personal wealth and natural resources fell to such fiscal despair and whether it has done everything possible to solve its own problems. Answers to these questions should be especially poignant after the recent ascension of liberal Californians to positions of power in Congress, to which President Barack Obama inexplicably delegated writing of the stimulus bill.

Discouraging business

California lost its fiscal health by spending too much and by discouraging business activity with excessive taxation and regulation. People and businesses have been leaving the state for years because they no longer could afford to live and operate there. A state that discourages business activity in these ways cannot be said to be doing all it can for its fiscal health. In no area of business, moreover, does California discourage activity more than in offshore oil and gas work. Here, officialdom and apparently much of the population live in the past.

Fierce resistance to offshore leasing, drilling, and nearly everything else associated with oil and gas has dominated Californian politics since the Santa Barbara Channel spill of 1969. The mishap occurred when pilings of a production platform widened a sea-bottom fissure already contributing to natural seepage. The resulting mess turned out to be neither as extensive nor as long-lasting as initially feared. It nevertheless gave nascent environmentalism a rallying point and froze California's regulatory mood in time.

The technologies of oil and gas drilling and production have advanced far beyond those in use in 1969. The iconic Santa Barbara spill could not recur. Because of attitudes hardened by the Santa Barbara accident, though, California hasn't issued a lease in state waters since 1969, refuses to issue a lease that won't involve any platform construction at all, and wants to broaden its antiquated obstructionism to national scale.

At the end of January, the State Lands Commission rejected a lease sought by Plains Exploration & Production Co. under a plan supported by traditional leasing opponents. The plan, full of aggressive environmental offsets, had been approved by the Santa Barbara County Planning Commission last spring. It was opposed only by ExxonMobil Exploration Co. and Sunset Exploration Inc., which have a competitive proposal, and an individual.

Plains Exploration proposed to use extended-reach drilling from Platform Irene in federal waters to develop the Tranquillon Ridge prospect, which is thought to hold 100 million bbl of recoverable oil. The structure lies in state waters and is being drained by federal production. The plan won support from antioil groups after Plains agreed to halt all production off and in Santa Barbara County by 2022, control emissions of greenhouse gases under careful audit, and fund emissions offsets.

Environmental compromise didn't matter. Lt. Gov. John Garamendi, one of three lands commissioners, said California didn't want to imply support for offshore drilling at any level. "Approving a drilling proposal will undercut congressional efforts to reintroduce a federal moratorium on offshore oil drilling earlier lifted by the Bush administration," he said.

Economic perversions

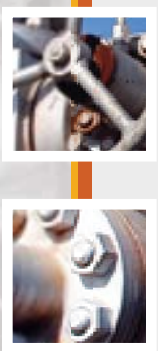
So a broke state has rejected an environmentally buttoned-down project that might have earned it $5 billion. That's bad enough. But it now slurps federal bail-out money while trying to hook the rest of the country into its disastrous economic perversions.

The US looked forward last year when Congress, not just the Bush administration acting alone as Garamendi implied, voted to relax leasing moratoriums with which it had forfeited wealth and domestic energy supply for three decades. The country shouldn't now reward a state's economic self-immolation with taxpayers' money. It certainly shouldn't adopt California's backward-looking approach to oil, gas, technical progress, and consequent contributions to economic health. ✦

CALL FOR ABSTRACTS

EMERGING UNCONVENTIONAL RESOURCES CONFERENCE & EXHIBITION™

December 8 - 10, 2009
Shreveport, Louisiana USA
Shreveport Convention Center
www.EmergingResourcesConference.com



CALL FOR ABSTRACTS

Present your ideas and experiences to a knowledgeable and influential audience. Join PennWell Petroleum Events for this inaugural conference and exhibition by submitting your abstract today.

Submit your abstract by visiting www.EmergingResourcesConference.com and clicking on the Online Abstract Submittal Form.

We are now accepting abstracts in the following technical focus areas:

CONFERENCE FOCUS AREAS

- Reservoir Management
- Well Control
- Drilling Methods
- Field Geology
- Workforce and Demographics
- Market Dynamics
- Field Economics
- Shales
- Transportation and Logistics
- Risk and Reliability
- Regulatory Concerns
- Recovery Methods
- Coal Bed Methane
- Tight Gas Sands
- Field Development
- Frontier Areas
- Sustainability Issues
- Completion Technologies
- Technology Qualification and Implementation
- Well Stimulation
- Project Execution and Management
- Produced Water Handling
- Geological Methods

DEADLINE FOR SUBMITTAL IS APRIL 30, 2009!

For more information, please visit:
www.EmergingResourcesConference.com

Owned & Produced By: PennWell

Flagship Media Sponsors: OIL&GAS JOURNAL | OIL&GAS FINANCIAL JOURNAL | Oil, Gas & Petrochem EQUIPMENT | Offshore

Pressure's on to open EU's energy markets

Uchenna Izundu
International Editor

One of the priorities for the European Union (EU), which now comprises 27 member states, is advancing its gas and electric power liberalization agenda. Adoption of its third energy liberalization package would move the EU closer to that goal, but adoption still faces a number of obstacles.

Protectionism of national monopolies has been at the core of a 10-year battle against opening markets to new participants. However, security of supply is now one of the EU's major energy objectives, and the longer market liberalization is delayed, with companies not investing in a timely manner, the deeper is the risk of endangering supply security.

In 2003, the International Energy Agency projected that during 2001-30, the estimated cumulative gas investments [within the EU-15 countries] would amount to $85-95 billion for distribution, $50-75 billion for transmission, $10-15 billion for storage, and $15-20 billion for LNG regasification.

The EU's other energy policy objectives—competitiveness and sustainability—also complicate the execution of liberalization: They are not always compatible. Choices must be made considering short-term/long-term contract inconsistencies, failures in the market, and public intervention, according to a report by European think tank Bruegel.[1]

Now in an economic downturn, with a tightening of credit markets, operators are even more hesitant to make investment decisions because of regulatory uncertainty. In the early part of this year, negotiations urgently need to be concluded among the European Commission, European Council, and European Parliament over the third energy package, which contains a number of controversial measures, including the suggested mandatory ownership unbundling of vertically integrated energy companies.

European elections for its parliament are scheduled for June, and a new commission is be convened in 2010. New faces and new attitudes could mean the unraveling of all the work on the package to date, prompting a fourth energy package and more passionate debate.

Once a compromise is reached on the sticking points, the revised package will go to the parliament for the second reading on Apr. 21-24, either approving a compromise reached with the council or reintroducing its first-reading amendments, a parliament spokesman told OGJ. Other areas under discussion include conditions for third-party access to natural gas transmission networks and the rules for the internal market on natural gas.

"We are confident that we can reach a compromise on the third energy package," an EC spokesman told OGJ. "All parties have a big interest to reach a compromise; no one wants to be accused of delaying the package."

If the legislation passes this hurdle, the gas industry will focus on submitting comments on how the new regime will be implemented.

But Members of the European Parliament (MEPs) are not as optimistic about brokering an agreement by April. Some have accused the EU's Czech presidency of failing to take the negotiations seriously, despite its being a colegislator with a majority on the energy package.

OAO Gazprom, which provides a quarter of the EU's gas supplies, is also carefully monitoring the trilogue so

it can decide how to proceed with its new export pipelines. A spokesman told OGJ: "We hope that the deliberations between the council and the parliament will lead to an outcome that will encourage cross-border investments from all parties, including those companies from outside the EU that are willing to pursue business opportunities in the EU member states and bring added value to Europe's energy infrastructure."

This special report focuses on some of the more contentious provisions of the commission's draft legislation: ownership unbundling, the Gazprom clause, and the creation of a new European energy regulator.

Opening of liberalized markets across the European union

Electricity and gas markets opened before July 1, 2007	Electricity and gas markets opened on July 1, 2007	Derogations
Austria	Bulgaria	**On electricity market opening**
Belgium	France	Cyprus until 2013[3]
Czech Republic	Greece	Estonia
Denmark	Hungary	Malta[3]
Finland[1]	Luxembourg	
Germany	Northern Ireland	**On gas market opening**
Italy[2]	Poland	Finland
Ireland	Romania	Latvia until 2010
The Netherlands	Slovenia	Lithuania until 2010
Portugal	Slovakia	Portugal until 2010
Spain	**Electricity market opened on July 1, 2007**	
Sweden[1]	Italy	
UK	Latvia	
	Lithuania	
	Gas market opened on July 1, 2007	
	Estonia	
	Sweden	

[1]Electricity only. [2]Gas only. [3]Cyprus and Malta have no gas market for the time being.
Source: European Commission

EC's third package

The third energy package was published in September 2007. These measures aim to bring effective competition to the European market, as previous legislation—the EU Gas Directive of 1998 and the Second Energy Directive of 2003, have not been entirely successful (see box below).

Full unbundling

The EC proposed full ownership unbundling—separation of supply and transport-transmission—so that all companies can have access to the networks. Energy companies would be required to sell their assets because legal unbundling, where companies create separate transportation and supply legal entities under a common parent company or ownership structure, had not been successful.

In its 2006 competition enquiry and in other studies, the EC had found that vertically integrated former monopolies blocked other companies from accessing networks and pipelines. However, investors could retain their interest in the dismantled groups via a share-splitting scheme under this measure, the commission said.

Member states such as France and Germany, which have national champions, believe ownership unbundling is unconstitutional. They contend that selling these assets could endanger energy security and leave consumers with higher prices. Opposing states also feel that it adds another level of bureaucracy, considering that legal unbundling was recently introduced.

Germany's support for the commission's package is critical. With the second largest gas market in Europe, Germany would determine how its neighbors trade.

"Likewise, Germany is geographically located at the heart of the European gas market, where gas from all key sources of European gas (the Netherlands, Norway, Russia, and, to a lesser extent, Algeria) meets," said consultancy IHS Global Insight.

History of gas liberalization legislation

1998 European Gas Directive
- Established minimal bases for deregulation of every national market.
- Permitted a minimum of internal accounts unbundling.
- Negotiated third party access.

2003 European Gas Directive
- Called for full market opening in 2007.
- Provided for legal unbundling of transmission interests to be completed by 2004 and distribution by 2007.
- Harmonized responsibilities of regulatory bodies.
- Provided for third party access exemptions for major new investments.

2007 Third package proposals
- Provide national regulators with greater powers and ensure their independence from political or company influence.
- Promote cross-border collaboration and investment.
- Improve market transparency on network operations and supply, nondiscriminatory access to information, and better price transparency.
- Develop greater solidarity among national energy markets, especially when there are potential threats to supply security.

Vertically integrated companies tend to view networks as strategic assets for their own commercial interests, rather than for serving the overall interest of network customers. "In particular [such companies] underinvest in new networks, fearing that these investments might help competitors to prosper on its national market," said the Committee of Regions (COR), which represents the subnational regions of the EU.

What would be the impact of this policy on Europe's biggest gas exporter? Gazprom has made no secret of expanding its position in Europe through buying stakes in transmission and distribution systems, or developing partnerships with them.

Catherine Locatelli, a researcher at the French think tank LEPPI, warns that the growth of Russian gas production will not be independent of the institutional modifications of the EU, Gazprom's principal export market. The commission's full unbundling policy could push Russia to seek diversification of its exports on a grander scale.

Exporters' views...

Europe's three largest gas exporters are Norway, Russia, and Algeria. The process of liberalization affects them with price and volume risks.

Gas liberalization also has implications for their relationships with the EU on security, diplomacy, and foreign policy. Liberalization results across the EU have been patchy, and countries wish to deal with a single integrated market, rather than 27 different regulatory systems as multiple systems add complexity and increase costs.

Russia's Gazprom provides 25% of the EU's gas supplies, and it feels fundamentally that long-term import contracts are crucial, considering the scale of the investments required for gas projects.

One opportunity arising from liberalization would be driving its spot trading to another level, although supplying gas solely on this basis would be too risky. In 2007, the company's trading arm sold 6.7 billion cu m of gas on the trading floors of the UK, Belgium, Netherlands, and France. This amount exceeded the level of 2006 by 25%.

Although it recognizes the complexity and level of investment for the gas business, the commission is troubled by the nature of long-term contracts, which in effect, distort the concept of competition.

For Algeria, Energy Minister Chakib Khelil has said that long-term contracts put it at a disadvantage because revis-

Independent operator

The commission's second unbundling model for energy companies would be to establish an Independent System Operator (ISO) that would assume operational control of the networks. Companies with energy production and supply assets could keep their networks, but an ISO would be appointed by national governments to decide on the use of the infrastructure and on investment plans. This would stop the transfer of privileged information, discrimination, and bias. This alternative was suggested to stave off hostility about full unbundling, but it wasn't well received by member states, who felt it would infringe upon their property rights.

The disadvantage of this concept is the increased regulatory burden, the commission warned, because it would have to be confident that the designation of the ISO was independent. Furthermore, network owners must work with the national energy regulator to implement its 10-year network investment plan and comply with the ISO's financial investments in transmission capacity.

Another issue is having confidence that the ISO would not be swayed by the major supplier and incumbent transporter, which would be its largest buyer and the provider of all its capabilities. In addition, utility shareholders would suffer a loss of control and privatization of these assets.

Market approaches

According to the commission's suggestions, the same approach on ownership unbundling should be used in both the gas and electricity market. But critics have pointed out that the EU is a major importer of gas from non-EU countries and so the focus should be on security of supply, given its vulnerability to the geopolitical crises of its gas providers.

Clearly the dispute between Russia and Ukraine and its impact on Europe earlier this year was a pertinent example of this point. Russia stopped gas supplies to Ukraine for its own domestic use because it claimed Ukraine failed to pay its debts on time (OGJ Online, Jan. 2, 2009). In turn, Ukraine, which is a transit country to Europe, stopped sending gas.

In its working document published on Jan. 9, 2008, the parliament said that because there were also structural differences between the two markets, "it may be necessary to consider the possibility of opening up the gas market more slowly than the market in electricity."

Council's response

The EU Energy Council, however, took a different approach to ownership unbundling and published its response to the document last October. This model, although similar in objective to the ISO, differs in its internal organization and introduces more bureaucracy to stop vertically integrated energy companies from being unfair and discriminatory in running their

transmission and distribution networks to other entrants. After intense lobbying by member states—led by France and Germany—it said companies could keep their transmission businesses, provided they were monitored by an Independent Transmission Operator (ITO). Effectively the transmission system would be legally unbundled from energy production.

However, to assuage the fears of nations such as Spain that their unbundled companies would be bought by rivals who had more financial clout, these energy producers would be prevented from purchasing the grid businesses of energy companies in European countries where full unbundling had occurred.

In effect, all three models of unbundling could exist side by side across the EU, but it's hard to accept that this would result in a level playing field between transmission system operators and member states.

ing its prices depends on the goodwill of its European customers, and this is sometimes difficult to secure. It is pushing for short-term contracts because prices would be more favorable. Khelil has been critical of the mixed results of gas liberalization across the EU because each member state continues to act in its own interests rather than adopting a common policy. A major risk with liberalization is that it endangers supply guarantees because exporters will focus on those customers who can pay the best price.

Parliament's views

During its first reading of the commission's proposals, the EU parliament rejected the ISO model as the alternative to full unbundling in gas. It is prepared to accept the council's position on the gas industry but is pushing for full unbundling in the electricity market. The key question now during the talks among the commission, council, and parliament is whether they can agree to a compromise on the model for unbundling so the package can secure the 51% vote needed during its second reading in parliament and be adopted in member states.

With the ITO model, parliament has introduced additional measures, such as a supervisory body and compliance program, to ensure that utilities comply.

It also has called for a new regulatory agency to report on the progress of the system within 5 years, and if it finds that this has failed, it possibly could demand complete unbundling.

The parliament also is keen to ensure that consumer protection is a core aspect of the directive, arguing that, with the current lack of transparency in the gas market, customers "do not currently receive full information about the product consumed; energy bills are often indecipherable," it said.

"Consumers must be able to make free, timely, and informed choices in a transparent and competitive market… not subject to external (explicit or implicit) price regulation mechanisms, which undermine price-forming mechanisms and, consequently, the operation of competition."[2]

The 'Gazprom clause'

In the commission's third package it offered a "third country" clause (also known as the "Gazprom clause") wherein reciprocity was key for non-EU companies wanting to snap up distribution and transmission networks in EU member states. They could only do so provided that they granted similar rights to EU companies in their home countries, and the commission and the respective country would sign an agreement to that effect. Furthermore, non-EU companies would have to "demonstrably and unequivocally comply with the same unbundling requirements as EU companies," the commission said.

Unsurprisingly, with Gazprom keen to expand its position in Europe, Russia has not welcomed the commission's move. Gazprom is in dialogue with the EU to ensure reliability of long-term supplies under this clause. Moving downstream gives Gazprom better access to customers and is quite profitable because liberalization alters the distribution of income in the gas chain.

Roman Zyuzev, an academic at Institut Europeen des Hautes Etudes Internationales, describes the clause as "unclear and vague" and says it requires discussions to help flesh out the EU's and Russia's new partnership and cooperation agreement.

The parliament endorsed the commission's clause to protect the EU's energy security. Europe has tried to pave the way for its companies in Russia in the past but has been unsuccessful.

But the council, after strong lobbying by member states who were worried about upsetting Russia—because they import large quantities of its gas—said it wanted a more diluted version of the clause. It has proposed that an EU member state could strike an individual bilateral agreement with a foreign country before its companies could buy the energy pipelines and grids of that EU nation.

EU regulator powers

Under the commission's draft legislation, a new European regulatory agency would be set up to focus solely on the regulatory gap for cross-border transactions in gas and electricity. It found that full development of the market has been impeded by a lack of coherence in the powers of national energy regulators.

The Agency for Coordination Energy Regulators (ACER) will be empowered to review, "on a case-by-case basis," decisions made by national regulators and to facilitate cooperation between network operators.

However, ACER's powers will be strictly limited to cross-border issues. "The agency is not a substitute for national regulators, nor is it a European regulator," the commission said.

Fears about this measure centered on introducing new levels of bureaucracy

and on shifting powers from national regulators to Europe.

New approaches

Regardless, the council supported this idea and decided that within ACER's voting system, all countries will have the same voting weight despite Germany's campaign to give larger countries with bigger energy networks more clout over the agency's decisions.

But parliament's stance, compared with the council's, is tougher on ACER's powers. It is seeking to hold ACER more accountable: Its director should be subject to a vote of approval by parliament and should regularly update that body on the performance of his or her duties.

In its comments, the COR rejected establishing a European energy regulator because it says national regulators can achieve the commission's objectives. It also has called for the European Regulators' Group for Electricity and Gas to be strengthened, particularly for cross-border problems. ✦

References

1. Roller, L.H., "Energy: Choices for Europe." Roller is the former chief economist at the Directorate General for Competition.

2. Committee on Industry, Research and Energy, Jan. 9, 2008. Working document on the proposal for a Directive of the European Parliament and of the council amending Directive 2003/55/EC concerning rules for the internal market in natural gas.

Gabrielli steers Petrobras's $174 billion investment plan

Uchenna Izundu
International editor

Jose Sergio Gabrielli, chief executive and president of Brazil's Petroleo Brasileiro SA (Petrobras), sat in the company's new offices in the West End of London, which was blanketed under 10-in. of snow, and explained why the company would invest $174.4 billion over 5 years despite the turmoil and volatility in the financial and commodity markets.

Investors in the immobilized city were eager to understand how the company—whose innovative technology has catapulted it into an award-winning deepwater company—would proceed with one of the most important finds this century, its Tupi discovery in the Santos basin estimated to hold reserves of 5-8 billion boe.

Gabrielli had just flown in the night before from the World Economic Forum in Switzerland.

"There was a clear divide there about the financial crisis," he said. "The financial world thinks we have come to the end, and the energy industry believes we can recover within the next couple of years."

This is why Petrobras plans to spend an average of $34.9 billion/year, 90% of which will be in Brazil ($157.3 billion) and 10% abroad ($16.8 billion). Its domestic oil production is expected to jump to 2,680,000 b/d in 2013 when $92 billion is to be invested solely in Brazil. Of the total earmarked for E&P, some $29 billion will be allocated to Santos and Campos basin presalt projects alone, including the amounts set aside for the Parque das Baleias off Espirito Santo. By 2013, Petrobras expects to produce 3.6 million boe/d, which will include production from its foreign fields.

So, how confident is Petrobras about financing its business plan, which covers 500 projects in different stages of execution? Gabrielli explained that, based on a Brent crude price of $37/bbl this year, $40/bbl in 2010, and $45 in the future, it can generate $120 billion of cash flow from its operations. "We need $54 billion," he says. "For 2009, we are fully financed because we have $12.5 billion from the national development bank and $5 billion from a syndicate of banks and a bridge loan through which we have 2 years to go back to the market to get long-term finance."

In 2009, Petrobras is already prefinanced to invest $29.8 billion and in 2010 plans to invest the same amount. It has 2 years to raise $8-9 billion/year and expects the money to come from sovereign funds, countries that want long-term guarantees of oil supplies, bonds, export credit agencies, and banks.

"On the other hand we are taking our investments at the current prices and these have been really contaminated at the high price of oil in the last 6 months," he adds. From July, oil has fallen from a peak of $147/bbl to prices hovering at $40/bbl today. Gabrielli is surprised, not about the oil price drop, but at its speed, and this volatility meant that Petrobras delayed publishing its strategic plan several times (OGJ Online, Jan. 14, 2009). He attributes the change to two factors.

"The US economy contracted very fast, and the reduction in gasoline demand was not expected last summer." This coincided with the financial crisis,

POINT OF VIEW

"There was a clear divide [at the World Economic Forum] about the financial crisis. The financial world thinks we have come to the end, and the energy industry believes we can recover within the next couple of years."

—Jose Sergio Gabrielli, Petrobras CEO, president

and there had been a large number of speculative oil traders working the first and second quarters of 2008. "The bubble has exploded," Gabrielli said.

Industry investment

During this economic downturn, oil companies are tightening their capex plans because of the significant decline in commodity prices, constrained cash flow, and tight credit markets. But they realize that their multibillion investment plans are imperative to bringing on future supplies and dampening steep price spikes. Royal Dutch Shell PLC, for example, plans to invest $31-32 billion; BP PLC wants to spend $20-22 billion.

Gabrielli is reluctant to offer a view on when oil prices will recover but stresses that as production declines, investment is crucial, otherwise prices will go up. "How long and how fast, I don't know."

He is determined to capture falling

costs in this recession. About 35% of Petrobras' projects are in the planning stage. Savings can be made in high-pressure and high-temperature projects, the presalt projects, refineries, and pipelines.

"We are going to push very hard for that," he said as the market foresees a 30% variation upwards or downwards for any project that is in its initial study phase.

The company will use standardized designs to help save money and minimize redundancies and flexibilities in project implementation. Rather than having custom-made equipment, Petrobras is prepared to accept those that are "off the shelf."

But research and development is key to the company's innovation, and Gabrielli insists that it won't cut this budget. Petrobras is expanding its Cenpes research center in Rio de Janeiro, which will be finished in early 2010.

"This is a very strategic investment," he said. "Wherever we can have standardized equipment in these small parts of projects, we'll do so."

Another way to save money would be to insert clauses in contracts that are more in line with market behaviors; when contracts require detailed specifications, the cost increases, Gabrielli said.

The third method of cutting costs would be to restructure the contracts with its suppliers. Typically Petrobras uses large engineering, procurement, and construction (EPC) contracts to deliver projects, but Gabrielli told OGJ that it would now want to break up its EPCs into smaller units to increase competitiveness, with its internal engineering department coordinating these. He declined to say how much he hopes the company will save using this method.

"The maximum as possible," he laughs. "If I give you a target number, the contractors will come with that figure."

Tupi oil development

Petrobras and its partners will start its extended well test on Tupi with results expected within the next 12 weeks, and the early production system will start at the end of 2010. BG Group has sanctioned Tupi's first phase at $3.7.

"We also anticipate two early production systems for Iara and Guara in 2012 and 2013," Gabrielli said.

Petrobras will drill a second well on Tupi for 16-18 months after the extended well, and the information will help it to minimize the need to drill wells in the development phase. "Minimizing drilling is a very important cost reduction for the presalt," he said. "We need to optimize the number of wells and the set of logistics that we have for 350 km from the coast."

The production system in the Santos basin will be a traditional floating, production, storage, and offloading vessel with horizontal wells and subsea systems. The second phase will involve the addition of subsea and floating subsea systems, using new technologies after 2017, and separation units on the bottom of the sea. This will depend very much on the data gathered after the extended well test.

Brazilian gas law

Clearly this intense interest in the subsalt layer has prompted debate about the government having a greater stake in oil and natural gas production. This is one of the proposals under Brazil's new oil and gas law, which the government has said wouldn't affect previous contracts.

The amendments also envisage the creation of a second state oil company that would oversee development of the reserves, as well as production-sharing agreements.

Asked when the law would be introduced, Gabrielli said "Soon. It's not dependent on me; I'm a member of the committee, and the president of Brazil will decide when he is going to release it." However, Gabrielli believes it will be unveiled by yearend.

Aberu e Lima refinery

The 200,000 b/d Aberu e Lima refinery in Brazil's northeast Pernambuco state being built in conjunction with Venezuela's Petroleos de Venezuela SA is on track to start operations in 2010-11, Gabrielli said. But the companies have disagreed on the price of

Career highlights

Employment

Jose Sergio Gabrielli is chief executive and president of Brazil's Petroleo Brasileiro SA (Petrobras), where he has run the company since July 2005. Prior to becoming leader of Petrobras, Gabrielli was the company's chief financial officer and director of investor relations, a position he assumed in January 2003.

Gabrielli has received a number of awards for his financial roles: In 2004 he was named Equilibrist of the Year by the Brazilian Institute of Finance Executives and was the designated Finance honoree at the 20th ANEFAC Professionals of the Year Awards ceremony. In 2005 he was named Latin America's Best Finance Executive by the International Stevie Business Awards, and in 2007 was honored as Energy Executive of the Year by the Petroleum Economist Awards in London.

Education

Gabrielli holds a PhD in economics from Boston University. Before Petrobras, Gabrielli held several academic positions, including visiting researcher at the London School of Economics and Political Science. Gabrielli is a full professor on leave from the Federal University of Bahia.

the heavy Venezuelan crude that would supply the refinery (OGJ Online, Jan. 27, 2009). "We haven't finished our discussion yet with our partner," Gabrielli told OGJ. "We are discussing the supply contract." He said he did not expect it to impact upon the project, and talks must be completed before production starts.

"We are going to have 100,000 b/d from Brazil and 100,000 b/d from Venezuela; if we don't get this agreement on the supply, we'll have to think about what we will do." Another five refineries are under development.

Finding staff

The global oil industry has struggled to attract technical talent and develop its challenging projects following the massive layoffs during the last recession in the 1990s. Students are reluctant to study engineering at the university level because the sciences are not perceived as "sexy" subjects with lucrative career prospects, studies have said.

Gabrielli said that Petrobras cannot afford to cut jobs during this downturn, unlike BP and ConocoPhillips, which have under way cost-cutting programs, which have resulted in job losses. Pointing to the production target of 5.7 million b/d in 2020, he said that 60% of its employees have more than 18 years of experience, and 40% have less than 8 years. "Between [those groups] we don't have anybody so we have to hire people to substitute for those retiring."

When asked if he has any plans to retire, Gabrielli jokes that he "is the most outsourced person in Petrobras."

But retirement for Gabrielli won't come any time soon. It appears that during this period, the depth of his economical understanding and contacts in the financial world will be key to implementing the company's $174.4 billion plan. ✦

Iraq battles terrorists, criminals to secure pipelines

Eric Watkins
Oil Diplomacy Editor

Most of Iraq's 7,000-km domestic oil pipeline network has been wrecked by attacks by terrorists and criminals, according to a senior government official.

Hashem Abid Al Ghafoor, director-general of the state-owned Iraqi Pipeline Co., told delegates at a natural gas conference in Cairo that 80% of Iraq's pipelines linked to refineries and industrial and power plants has suffered "between 50-100% total destruction."

The oil ministry has, for years, been working "under great difficulty" to rebuild the country's dilapidated oil infrastructure, Al Ghafoor said, adding that over the past 3 months, the company has dealt with 2,000 explosions on lines.

According to Al Ghafoor, thieves have stripped some oil facilities down to their walls, severely impairing the country's efforts to boost production to 6 million b/d from the current 2-2.4 million b/d.

Still, he said the government's 6 million b/d target is "realistic and ambitious" since the security situation has improved. "The areas that we couldn't reach (before), we are now able to reach. It's an obvious improvement," he said.

That's largely because the Oil Police Directorate last year transitioned its 10 battalions to the ministry of interior and has since worked with the ministry of defense's infrastructure battalions to protect the nation's pipeline system.

"These additional security forces accounted for a 90% decrease in smuggling and transgression activities along the oil pipelines since 2007," said the Multi-National Force-Iraq. "An additional seven battalions are planned to be formed in 2009, with a total of 22 bat-

talions planned for fielding by 2012."

In an October meeting with Multi-National Security Transition Command-Iraq commander Lieutenant General Frank Helmick, Oil Police Commander Major General Hamid outlined the short, medium, and long-term plans for taking over protection of the country's oil pipelines and said, "Financial allocations are the biggest challenge."

Meanwhile, the MNF-I said the general directorate of the oil police is being assisted by the ministry of interior transition team in planning for Iraq to assume security for oil facilities.

According to one MNF-I member, "There are challenges ahead, but it is obvious the oil police directorate and the MOI are in sync with each other and dedicated to approving the security situation in Iraq."

Last month, Iraqi Oil Minister Hussein al-Shahristani and the Syrian ambassador to Iraq, Nawaf Aboud al-Shaikh Faris, held talks on how to facilitate the construction of a gas export pipeline from Iraq's Akkas field to Syria.

Additionally, the two men discussed ways to repair the heavily damaged—and long-disused—crude pipeline between northern Iraq and Syria's Mediterranean port of Banias. ✦

ExxonMobil shrugs off latest Qadhafi remarks

Eric Watkins
Oil Diplomacy Editor

ExxonMobil Corp., dismissing the latest statements by Libyan leader Moammar Gadhafi, said it is not concerned about remarks threatening to nationalize the Arab country's oil industry.

Russell Bellis, ExxonMobil exploration director for Europe, the Middle East, and North Africa, said he had no concerns over the threats and that the US firm could begin drilling for oil and gas in Libya this year.

In March 2008, Libya's National Oil Corp. signed an exploration and

Japan's bow to diplomacy

Japanese Prime Minister Taro Aso views the Sakhalin-2 oil and gas project as an example of mutually advantageous cooperation, giving Russia new technologies and access to the Asian market, while granting Japan new sources of hydrocarbons.

Aso said as much in an interview with Russian state media last week ahead of his Feb. 18 visit to Sakhalin Island, where he met with Russian President Dmitry Medvedev and took part in the opening ceremony of the Sakhalin-2 project.

"Japan has a long record of participation in oil and gas developments on Sakhalin, which dates back to the beginning of the 20th century," he said, noting that the onset of production "after overcoming numerous difficulties is a memorable and very happy event for Japan and Russia."

Aso was diplomatic in side-stepping details of the so-called "numerous difficulties." In fact, the project has been fraught with difficulties, not least the fact that Russia at one point withdrew approval for the development, citing environmental concerns.

Moscow's grip

At the time, many thought the real reason was Moscow's desire to tighten its grip on energy resources, and the fiasco was settled only when it was agreed that Russia's OAO Gazprom would acquire a majority interest in the project.

As a result, Gazprom acquired a 50%-plus-one-share stake, while Royal Dutch Shell PLC holds a 27.5%-minus-one-share stake, Mitsui & Co. holds 12.5%, and Mitsubishi Corp. holds 10%.

While Aso was diplomatic in his refusal to discuss such problems, doing business on Sakhalin Island continues to be risky.

In October it was reported that the ExxonMobil Corp.-led Sakhalin-1 project, in which Itochu Corp. and Marubeni Corp. have stakes, was barred from exporting gas to China, due to pressure from Moscow and Gazprom. In fact, the Sakhalin 1 developers have proposed exporting the majority of the gas to China, with Gazprom a wholesaler for only a portion. But Gazprom is looking to obtain exclusive rights to purchase all the gas from Sakhalin-1.

Problems emerge

Not least, Gazprom is proposing a relatively low price in its negotiations to purchase the gas produced by Sakhalin-1. Not surprisingly, problems have begun to emerge for the project. Two weeks ago the Sakhalin-1 consortium started to suspend future phases of the project, citing Moscow's failure to give timely approval for its budget plans.

A spokeswoman for ExxonMobil affiliate ENL said the Authorized State Body had not given its approval for 2009 plans and budgets, as well as for additions to 2008 plans for the future phase of Odoptu and Arkutun-Dagi developments.

"ENL has begun to demobilize the Odoptu work sites and will defer the advancement of engineering work and contracting opportunities," she said, adding that ENL will continue to seek approval for the budgets and was committed to the project.

Aso was indeed diplomatic, preferring to focus on the positive and say nothing of Russian perfidy. ✦

production-sharing agreement with ExxonMobil for offshore Area 21. Under the agreement, ExxonMobil is committed to shooting 4,000 km of 2D seismic, 2,000 sq km of 3D seismic, and the drilling of one exploration well.

Gadhafi's remarks were broadcast Feb. 14 by the state-run Great Jamahiriyah TV, which aired a recording of a meeting between the Libyan leader along with secretaries and members of Libyan peoples' committees.

Among other views concerning the redistribution of wealth in his country, Qadhafi discussed oil revenue, saying it needed to be looked after carefully, being the country's only resource.

He said oil is the property of the people of Libya and Algeria, while in other oil-producing countries, the oil is owned by the kings and other leaders, who took most of the revenue, giving very little back to the people.

Qadhafi added that the increase of oil prices "made me think that oil revenue should be given to the people." However, he said, "As soon as we began to think about this, oil prices plummeted to as little as $30/bbl.

Avoiding corruption

The Libyan leader went on to discuss corruption, where some people received more money than others, when all should have had equal amounts of money as all income came from oil revenue.

He said in Libya on the other hand, oil revenue was in the hands of its people, and he invited anyone in the world to come to Libya and check for themselves whether that was true or not.

He also discussed possible systems for distributing oil wealth among the people, whether each person would get a specific amount of money regardless of the price of oil, or whether they should receive more money when prices go up and less when they go down.

Qadhafi then read out some possible suggestions for ways to redistribute oil revenue.

In one example, he said, people could receive 3,000 Libyan dinars/month (around $2,300), but then would be responsible for everything in their lives, paying higher bills with no government subsidies, with no free health care or education.

These comments echoed earlier remarks by the Libyan leader during a televised address at Georgetown University in Washington, DC. "Oil-exporting countries may look to nationalization because of the rapidly declining prices," the Libyan leader said (OGJ Online, Feb. 2, 2009). ✦

Rahall: Expired moratoriums probably can't be reimposed

Nick Snow
Washington Editor

US Outer Continental Shelf moratoriums that expired last September probably can't be reimposed, House Natural Resources Committee Chairman Nick J. Rahall (D-W.Va.) said on Feb. 10.

"I can understand your desire to see the moratoriums reinstated. However, the ship may have already sailed and the political reality may be that they can't be reimposed," he told the first two witnesses testifying at the first of the committee's three scheduled hearings on OCS oil and gas leasing policies. Two more will be held on Feb. 24 and 25.

But movie and television actor Ted Danson, representing the Oceana environmental organization, and Philippe Cousteau, chief executive of Earth Eco International and grandson of undersea explorer Jacques Yves Cousteau, said that bans on oil and gas activity are still needed.

"My hope would be you would sail the ship back into port. We're flirting with disaster by drilling offshore. Our fisheries around the world are an $80 billion/year landed industry. One-third of them have totally collapsed. By adding acidification to the ocean, you make it impossible for creatures there to survive. The added insults could have an impact on our lifetimes and our children's lifetimes," Danson said.

"Reinstating the moratorium is critical to the health of the ocean. But if there must be new drilling, its impacts must be minimized. It's absolutely critical that studies be conducted before any leasing occurs. Contrary to popular belief, all oceans aren't the same. The current process does not recognize this," said Cousteau, who testified on behalf of the Ocean Conservancy.

He and Danson also said that Arctic oil and gas leasing should be stopped because of its ice floe impacts, and a comprehensive strategy should be developed to manage and protect ocean resources. Cousteau also suggested that an ocean investment fund should be created to use offshore revenue for more ocean research and development.

'You will have spills'

Several committee members were sympathetic. "You start putting these oil rigs off the coast of New Jersey, people aren't going to come even if there aren't spills. And you will have spills. This notion that no rigs caused spills and there was no damage from Katrina and Rita is contrary to what I understand," said Frank Pallone (D-NJ).

Others were critical. "I think your efforts are misplaced. You have not talked about an orderly process to get us off fossil fuels. We're going to have to continue, for the near-term I believe, the extraction of oil and gas not just off our coasts but around the world," said Jim Costa (D-Calif.), who chairs the committee's Energy and Mineral Resources Subcommittee.

But Cousteau and Danson both said that continued reliance on offshore oil

Pennsylvania eyes severance tax

If anyone wonders whether the general economic recession will affect the oil and gas industry, they need look at Pennsylvania where Gov. Edward G. Rendell proposed a natural gas severance tax on Feb. 4 in his annual budget message.

He seeks the levy as the Keystone State faces a current projected budget deficit of $2.3 billion. Interest in producing gas from the Marcellus shale has created what he termed "a Pennsylvania gold rush," Rendell told legislators.

He proposed a tax of 5% at the wellhead, plus 4.7¢/Mcf, an approach identical to neighboring West Virginia's. State officials project that it would raise about $1.82 billion over 5 years, starting with $107.2 million in 2009-10 and climbing to $631.9 million in 2013-14.

Tax could hurt

State oil and gas industry associations warn that the tax could hurt existing producers who also would have to pay it. "Conventional wells in Pennsylvania are low-yielding and marginally economic. Only with careful cost control and minimal operating expense can these wells attract any investment," said Lou D'Amico, executive director of the Independent Oil and Gas Association of Pennsylvania Feb. 5.

Stephen W. Rhoads, president of the Pennsylvania Oil and Gas Association (POGAM), said the proposed tax has a 6.25% effective rate. The volumetric component makes it very regressive: When gas prices fall below $2, the effective tax rate is about 7.5%. When prices are $7.50-8, it's below 6%, he told me in a Feb. 13 telephone conversation.

POGAM also tried to determine the proposed levy's bottom line impact over a typical shallow well's 20-year lifetime. "When you put an effective 6.25% tax against the gross income to the working interest, drilling costs and operating expenses, it takes about 30-35% of the net income away," Rhoads said.

He said Pennsylvania faces a difficult budget year, and the governor wants to fill holes. Rhoads said Rendell also welcoms alternative proposals, and that POGAM has one.

Alternative

"We think it would be more practical to lease state forest lands which lie within the Marcellus Shale fairway for production and development. The Department of Conservation and Natural Resources earned, on average, about $2,500/acre or about $90 million when it held a lease sale in September for just this purpose," he said.

"If you assume Marcellus production rates based on what's going on in other shale plays, a lease sale of 100,000 acres annually for 4 years and lease signing bonuses similar to last year, we believe the governor could raise $1 billion from the lease sales and royalties, based on the department's standard 16.5% rate, in the $800 million range over 5 years," Rhoads said.

That would be close to the $1.82 billion the state projects to receive from the proposed tax, while giving Pennsylvania a chance to determine what's actually within its part of the Marcellus, he noted. ✦

has impacts beyond production platforms. "I don't think you can just look at the drilling of oil. You have to talk about burning it. On every level, we create more jobs with green energy. To imply we're losing jobs by not drilling offshore seems ingenuous," Danson said.

"I believe we need to embrace an alternative energy approach that is worthy of this country's potential. Any new drilling on the OCS is not going to reduce drilling elsewhere or meaningfully reduce the number of tankers bringing oil to our country," Cousteau maintained.

He said that he considered siting important in considering any offshore energy production. "It has to be appropriate. The thing about wind that's different than oil is that wind doesn't produce a caustic substance," he said.

"It's clear that we need order in the ocean just as surely as we need it on land. We need comprehensive ocean planning, with conservation as a central deciding factor, so that the many competing uses work together in a way that is sustainable for our shared ocean future," Cousteau said.

Revenue and jobs

Committee members from producing states cited the offshore oil and gas industry's economic contributions. "In Louisiana, we have 21,000 producing company jobs related to oil and gas just on the OCS with an average annual salary around $60,000 per employee," said John Fleming (R-La.).

"Oil and gas is the second-largest contributor of income for our federal government, after income taxes. Most of the folks in the oil and gas industry want to protect the environment. I support responsible energy development because I think it's a big part of our economy," said Dan Boren (D-Okla.).

"The problem is we have hundreds of groups and government agencies that throw up roadblocks any time anyone wants to drill an oil and gas well. That destroys jobs, which hurts the poor people of this country. You're putting

the final nail in the coffin of many rural areas because their citizens have to drive great distances to jobs and they can't afford to pay higher prices. We can't base the entire economy of our country on tourism, particular in a tough economic time," said John R. Duncan Jr. (R-Tenn.)

But other committee members were skeptical that offshore oil and gas resources can be produced with minimal environmental impacts. "We definitely have heard a lot from the industry about how things have changed and technology is better. Just this past December, a small hole the size of a quarter developed in a pipe that sends oil from the very same platform which spilled oil off Santa Barbara and sent thousands of gallons of oil into the water. It's not just the platforms. It's the pipelines, the barges and the other infrastructure that are also at risk," said Lois Capps (D-Calif.)

Jay Inslee (D-Wash.) went further. "Despite the improvements in oil drilling technologies, 100% of the oil that's produced spills because the carbon in that oil comes back down as carbon dioxide. We need to talk about the inevitability of this kind of oil spill from every onshore and offshore well if we continue on this course. I think we should consider an international moratorium on drilling for oil in those parts of the planet which have been destroyed by oil use," he said.

A second panel of witnesses included Carolyn McCormick, managing director of the Outer Banks Visitors Bureau in North Carolina; D.T. Minich, president of the St. Petersburg-Clearwater Area Convention & Visitors Bureau in Florida; Zeke Grader, executive director of the Pacific Coast Federation of Fisherman's Associations; Bruce Allen, cofounder of Stop Oil Seeps California; and Jefferson Angers, president of the Center for Coastal Conservation. ✦

Global LNG supply on rise; project costs falling

Warren R. True
Chief Technology Editor-LNG/Gas Processing

Global LNG supply by 2013 will jump as nearly 100 million tonnes/year (tpy) of liquefaction projects currently near start-up or under construction come on line. In a global market that for the first time faces an abundance of LNG supply, vessels, and regasification, prices will move toward convergence.

For new projects, debt financing will be available, even as the world's financial markets struggle to recover from collapse. Project developers, however, may have to accept more onerous terms and offer lower risk to participating banks. At the same time, projects costs, which in late 2008 began to move lower, will continue to back away from the unsustainable levels of last year.

Natural gas demand, currently contracting in the global recession, will inevitably recover, providing larger and newer markets for the widened global gas trade. These were some of the views offered by speakers Feb. 11, CERAWeek 2009's Gas Day, in Houston.

LNG supply, pricing

Daniel Muthmann, vice-president for global LNG supply at E.On Ruhrgas AG, noted the "tidal wave" of LNG supply on the horizon and said that, as a result, the commodity is moving "toward [global] price convergence" in the long term. At the same time, LNG supply is becoming more flexible, able to move more readily among the world's three regional markets.

Ahmed al-Khulaifi, chief operating officer for Qatar Liquefied Gas Co. Ltd., shared this view, saying that before yearend QatarGas alone will bring online as much as 24 million tpy of additional capacity. He said globally there was as much as 84 million tpy under construction over the next few years.

"All available LNG will be produced and delivered," he said; "the only question is to which market." The current downturn that is depressing demand will last "for only a short time; history tells us gas demand will turn around."

Supporting this viewpoint in the same session, Pat Blough, Chevron Global Gas vice-president for gas commercialization, stated: "Long-term fundamentals support investment."

Blough noted Chevron is perhaps unique among international operating companies in that it will make financial investment decisions on several large and expensive LNG liquefaction projects in the next 5 years. "LNG investments," he said, "require a very long view."

CERA Director John Harris cited the figure of 100 million tpy due on stream by 2013 and added that "as much as 300 million tonnes of proposed LNG projects are in front-end engineering and design, a step before final investment decisions. And, he added, "we are seeing a major drop in raw material prices" and a consequent reduction in project costs. Harris sees LNG as viable, especially in Atlantic Basin markets, even with natural gas prices bumping near $4.80/MMbtu. "Below a certain level, LNG will displace a great amount of coal-fired [electric power] generation," he said.

Shale influence

The 800-lb gorilla in the room for CERA's LNG discussions, however, was US shale gas. Chesapeake Energy's Chairman and CEO Aubrey McClendon conveyed the scale of the shale gas threat to the economics of LNG in North America. For starters, he repeated Chesapeake's estimates for possible reserves for the four major US shale plays: Barnett, the oldest: 75 tcf; Fayetteville: also 75 tcf; Haynesville: 500-700 tcf; and Marcellus: 1.5 quadrillion cu ft.

He noted that shale gas, which burst onto the US natural gas scene only recently, now comprises as much as 40%

of supply and is "largely responsible for the current oversupply" of natural gas.

That overhang, he said, is being quickly reduced as gas drilling rigs leave those basins. In 2008, he said, "it took 1,500 rigs to replace 25% of depleted reserves and to add about 7%. By year-end 2009, natural gas [reserve] growth in the US will decline by about 10%."

He said, "We will see a two-thirds reduction in [the drilling rig] fleet," spurred not only by reduced demand but also by "reduced access to capital."

For McClendon, the "single reality that will guide future planning is the abundance of natural gas," whereas it has been its scarcity that has dominated past plans. ✦

Gazprom prioritizes projects in economic downturn

Uchenna Izundu
International Editor

OAO Gazprom is prioritizing gas projects, determining which projects it will proceed with, because of decreasing gas demand and challenging financing issues amid the economic downturn.

Speaking through an interpreter, Chief Financial Officer Andrey Kruglov told reporters in London that the company had not yet confirmed its list. "We have also been prioritizing projects in our investment program—and this will allow us to see which projects will be financed and which projects are going ahead," he said. Its key Yamal Peninsula project is expected to go ahead.

Gazprom management came to London Feb. 10 to give a strategy and budget update to investors.

Kruglov said the company would wait until it determines this year's first quarter results before assessing how the global and Russian financial situation would impact its budget. "But we have started developing different scenarios which depend on oil price levels," he said.

Last December, the company approved a draft investment program of 920.44 billion rubles, another 699.88 billion rubles in capital investments, and 220.56 billion rubles for long-term financial investments. He said these investment figures remain unchanged.

The company will focus on improving efficiency and better handling of its liquidity. It intends to keep a tight reign on costs by cutting back on sponsorships, social activities, and personnel by 10%. It also has launched an advanced payment system to ensure that its customers don't fall behind on their bills. This applies to 1-year contracts and primarily Russian customers.

Priorities

Gazprom said its major Shtokman gas condensate project in the Barents Sea is on track, and the shareholders, including Total SA and StatoilHydro, are to make a final investment decision in first-quarter 2010, said Alexander Medvedev, deputy chief executive of Gazprom.

The partners expect to run up high costs before they make the decision whether to execute it, which is unusual, Medvedev added, pointing out that this demonstrated how confident they were about it. Shtokman is scheduled to export gas by pipeline in 2013 and the 7.5 million tonnes/year liquefaction plant would start in 2014.

Other major Gazprom projects include predevelopment work in Bovanenkovo and Prirazlomnoye fields; the Apt-Albian deposits in the Nyda area of Medvezhye gas and condensate field; the Zapadno-Pestsovaya area of Urengoy oil and gas condensate field; the Kharvutinskaya area of Yamburg gas and condensate field; and other fields.

Gas transportation priorities include construction of the Bovanenkovo-to-Ukhta and Ukhta-to-Torzhok trunkline systems; the Gryazovets-to-Vyborg, Pochinki-to-Gryazovets, and Murmansk-to-Volkhov gas pipelines; and the SRTO-to-Torzhok gas trunkline.

Gazprom's presence in London reignited rumors that it was interested in buying Centrica PLC. "We are not in talks with either the shareholders or the management of Centrica," Medvedev said. ✦

Cromarty Firth celebrates good start to 2009

The Cromarty Firth Port Authority is enjoying a busy start to 2009 with the arrival of the Hutton tension-leg platform to Cromarty Firth. The Hutton TLP's visit marks a return to its birthplace.

Constructed at Ardersier and Nigg in 1984, the Hutton TLP was a cutting-edge structure in its day. It ceased production in 2002, and its topsides were removed in Russia in 2003. Last year, the legs were purchased for converting it into a drilling rig, and it prepared to be towed to a Spanish shipyard for conversion. Before reaching the Cromarty Firth, the Spanish yard, due to commercial difficulties, was unable to undertake the work, and the tow was diverted to the Firth. The Hutton TLP weighs 31,000 tonnes and stands 45 m. The recent fall in oil prices has led to an increased demand for the anchoring of rigs. Photo from CFPA.

Shell exploring Tucumcari Cuervo area after gas find

Field reports indicate that Shell Western Exploration & Production LP, Houston, has been spearheading a play for gas in northeastern New Mexico's nonproducing Tucumcari basin.

The company tested gas from an indicated discovery well in Guadalupe County after it assumed operation from an independent. Shell has drilled two more wells to about 13,000 ft on its own, is preparing to spud a third, and has reportedly completed a 3D seismic survey of as much as 80 sq miles.

Shell filed reports with the New Mexico Oil Conservation Division in late 2008 on stimulation and testing of the discovery well (CB Webb No. 1), on a fee lease in 25-11n-23e, in the Cuervo subbasin 20 miles northeast of Santa Rosa (see map, OGJ, Sept. 17, 2001, p. 36).

Shell assumed operation of the well from Cuervo Exploration LLC, a group of private independents comprised of Inter-American Corp., Dallas, Ceja Corp., Tulsa, and Gunn Oil Co., Wichita Falls, Tex.

Cuervo Exploration drilled and cased the CB Webb well in 2006 but didn't perforate due to internal disagreements among the partners about completion procedures and economic viability.

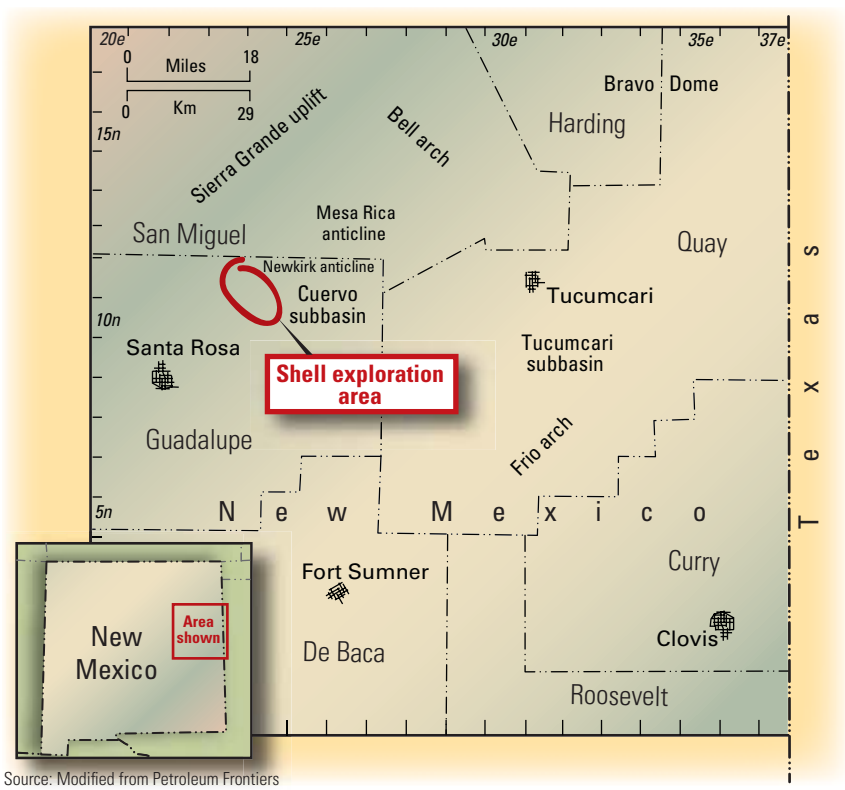
Upon taking over from Cuervo, Shell conducted multiday flow tests between August 2007 and January 2008. Shell also reported a flow rate of 1.74 MMcfd of gas and 47 b/d of water from Pennsylvanian Strawn sandstones of low permeability and high thermal maturity, at casing pressures of up to 800 psi.

Shell also reported having perforated the well in 10 intervals between 7,950 ft and 10,783 ft (all Pennsylvanian-aged) and reported a multiple completion in the 10 zones. The total depth on the discovery well was 10,927 ft, and the well is plugged back to 10,814 ft. There was no indication when Shell might be capable of starting gas production. Low commodity prices have led the company to rethink participation in some new projects (OGJ, Feb. 2, 2009, p. 43).

Other acreage holders in the greater Tucumcari area include Ceja, David Petroleum Corp., Roswell, NM, Inter-American, Hyperion Exploration, Dallas, and Yates Petroleum Corp., Artesia, NM. Ceja, Inter-American, and Yates are believed to each hold 100,000 acres or more.

Ronald F. Broadhead, geologist at the New Mexico Bureau of Geology and Mineral Resources at Socorro, published a positive assessment of the potential of Cuervo and other so-called "elevator basins" or troughs of eastern New Mexico in Oil & Gas Journal (OGJ, Jan. 8, 15, and 22, 2001). The current prospectors regard these studies as the prime catalyst for activity in the basin. ✦

Geologic environs of Tucumcari area



Source: Modified from Petroleum Frontiers

Reserves booked in remote US, Canada plays

GeoMet Inc., Houston, booked proved reserves at the end of 2008 in remote gas plays in Alabama and British Columbia, the company reported.

Total company proved reserves were 320 bcf, down 8.6% when calculated at $5.71/MMbtu last year vs. $7.46/MMbtu the prior year.

The proved reserves are 100% from unconventional reservoirs, 99% from coalbed methane, and 77% are proved developed.

Consulting engineers also estimated companywide probable reserves at 177 bcf.

GeoMet replaced almost three times its 2008 production. Downward revisions totaled 42 bcf, of which 13 bcf resulted from lower gas prices. The other downward revisions were mainly due to production performance issues in parts of Gurnee CBM field in Alabama.

The company's 2008 yearend proved reserves are 57% in Gurnee field and 41% in Pond Creek and Lasher fields in West Virginia and Virginia (OGJ Online, Jan. 29, 2009).

The company booked 4 bcf of proved reserves at Peace River, the first commercial CBM project in British Columbia, and consulting engineers estimated a further 22 bcf of probable reserves for the project. GeoMet also booked 2 bcf of proved reserves at Garden City, the first commercial Chattanooga shale project in Alabama (OGJ Online, Jan. 9, 2009). ✦

Brazil independent gears up for exploration

OGX Petroleo e Gas Participacoes SA, Brazil's largest independent company in terms of offshore exploration acreage, plans to drill or participate in 51 wells the next 4 years in Brazilian land and offshore basins.

The company, which holds 1.7 million acres of offshore rights on 22 blocks in four basins, has chartered four semisubmersibles. OGX is capitalized at $8.5 billion. It plans to start drilling with operator Maersk Oil in the Santos basin. Two wells in the Campos basin will follow in September. Another Santos well should spud in November, and two more Campos wells will follow around the end of 2009.

OGX completed 3D seismic surveys in the Campos and Para-Maranhao basins in December 2008. Seismic acquisition in the Espirito Santo basin blocks is well under way and 7 months ahead of the original timetable. Existing Santos basin 3D seismic has been reprocessed and made available to OGX's interpretation team.

Data interpretation will be complete by mid-2009 for the Campos, Santos, and Para-Maranhao blocks, and Espirito Santo will be ready by December 2009.

OGX has built a state-of-the-art 3D seismic visualization center at the Rio de Janeiro headquarters. ✦

Total signs agreement on Libyan blocks

Total SA will convert its petroleum agreements with Libya's National Oil Corp. (NOC) to exploration and production sharing agreements (EPSA) for Blocks C17 and C137 in Libya.

The parties signed a memorandum of understanding underscoring the move to the EPSA IV (exploration and production-sharing agreement) format.

The acreage is respectively located in the Sirte basin and the offshore Sabratha basin 100 km from the Libyan coast.

Mabruk Oil Operations, a subsidiary of Total, operates the blocks.

The shareholders in Block C17 are NOC with 50%, Total with 25%, and StatoilHydro with 25%. Partners in Block C137 are NOC with 50%, Total with 25%, and Wintershall with 25%.

In addition to production from the offshore Al Jurf field on Block C137 and from the Mabruk field on Block C17 in the Sirte basin, Total operates other exploration licenses in Libya.

Last year, Total's equity production, which also includes its interests in nonoperated blocks, averaged around 75,000 b/d in Libya. ✦

China

TerraWest Energy Corp., Vancouver, BC, is analyzing results from coalbed methane wells drilled to 800 m and 1,500 m on the 255 sq mile Liuhuanggou area bordering the city of Urumqi in northwest China's Xinjiang Province.

Both wells penetrated Jurassic J2X coals, and the deeper well intersected other targeted formations with multiple coal seams, all of which were sampled.

Interests are TWE 47% and China United Coalbed Methane Corp. 53%. The PSC is on a PetroChina Co. Ltd. oil and gas lease.

Urumqi has built gas mains for residential use and has the capacity to take more gas. China's second west-east gas pipeline under construction runs through the PSC, and the Chinese government gives CBM producers preferential pipeline access over conventional gas, a price subsidy, tax rate reduction and rebate, and corporate tax exemption, TerraWest noted.

Petromin Resources Ltd. is a major shareholder in TWE.

California

Venoco Inc., Denver, plans to drill 70 wells and rework 100 others in 2009 in northern California's Sacramento basin.

The basin's Cretaceous Forbes gas

wells generate a 25% rate of return at $4/Mcf for gas, not counting hedges, the company said. Venoco hopes to cut well costs 10% from $850,000 recently and $1.1 million in 2008. It has hiked production to 60 MMcfd from 8 MMcfd in 2004.

Venoco plans to try horizontal drilling and staged fracs in the Guinda formation, just below the Forbes. The company, which has 20 vertical Guinda penetrations, fract out of the formation in the last quarter of 2008. Guinda flows 20-50 Mcfd of gas unstimulated.

Royale Energy Inc., San Diego, said its Lonestar East well flowed at the rate of 1.45 MMcfd of gas and no water from the lower 10 ft of Cretaceous Forbes. It is on line at 600 Mcfd.

The vertical Colusa County well, which tested a 3D seismic amplitude anomaly at 6,100 ft in Forbes, cut 24 ft of potential pay in that formation. The anomaly is almost 1,400 ft deeper than wells in Lonestar field to the west. TD is 6,400 ft.

Royale also identified shallower zones at 4,700 ft, 5,160 ft, and 5,820 ft that may have future gas potential. The 4,700-ft interval correlates with a shallow zone that has gas in the Parks 9-2 well, whereas the 5,820-ft zone correlates with a good gas show encountered in the nearby Gobel 21-1 well.

New Mexico

Concho Resources Inc., Midland, Tex., has deferred drilling in the Permian Lower Abo horizontal oil play due to lower commodity prices but continues to lease and now holds 22,079 net acres.

Various operators have staked 175 locations, including 33 by Concho Resources, in Eddy, Chaves, and Lea counties. The play has 30 producing wells.

Concho Resources, which began drilling in 2007, has participated in 14 Lower Abo horizontal wells, eight of them operated, of which 12 are producing and two await completion.

Concho Resources operated with 43.75% working interest the Comet 22 Federal Com No. 4 well, completed in December, which averaged 1,294 b/d of oil equivalent in its first 21 days on production.

Oklahoma

Cimarex Energy Co., Denver, booked 58 bcfe of proved reserves at the end of 2008 in the Anadarko basin Woodford shale play in western Oklahoma.

Yet to be classified as proved are 400-500 potential 160-acre drilling locations associated with Cimarex's 88,000 net acre position in the play. The estimated net risked potential of these locations is 2-3 tcfe. The position includes 38,000 net acres acquired in the last quarter of 2008 for $180 million.

Cimarex has drilled or participated in a total of 22 gross, 10 net, wells last year (OGJ, Nov. 17, 2008, p. 38). Year-end 2008 production was more than 50 MMcfed gross.

Initial 30-day production rates on recent operated wells include Golden 1-3H 6.5 MMcfd, Holman Farms 2-32H 6.1 MMcfd, and Hebert 1-14H 4.3 MMcfd.

Energy Libraries Online Inc., Oklahoma City, is attempting to raise funds to digitize Midcontinent well logs, strip logs, scout tickets, and other documents that are in danger of loss and deterioration. The nonprofit, charitable organization plans to establish a digital online library for permanent access by members, said Tim O. Brown, executive director.

Initial goal is to create a website and then scan and index 750,000 of the more than 6 million hard-copy documents archived in the Oklahoma City Geological Society Well Log Library, the Oklahoma Well Log Library, the Ardmore Cut & Sample Library, and the Oklahoma Geological Survey.

Texas

Gulf Coast

Evolution Petroleum Corp., Houston, completed two Giddings field reentries at initial gross rates more than double the initial rate averaged on the first seven wells placed on production in fiscal 2009.

The Hilton-Yegua-1RE in Burleson County averaged 3 MMcfd of gas and 146 b/d of oil and condensate in its first 8 days on line. It has a 3,000-ft leg in Austin chalk and a new vertical section from 3,000 ft to 10,500 ft.

The Pearson-1RE, in Grimes County near six development locations under lease, maintained 1.25 MMcfd and 48 b/d in its first 8 days on production. It has a 3,500-ft leg in Georgetown.

Evolution has 100% working interest and 78-80% net revenue interest in the wells.

North

Parallel Petroleum Corp,. Midland, farmed out its approximate 35% interest in its Fort Worth basin Barnett shale interests to Chesapeake Energy Corp., Oklahoma City.

Parallel estimated that its Barnett Shale leasehold operated by Chesapeake and subject to the farmout is 25,600 gross (9,300 net) acres. Parallel anticipates that 61 gross (10 net) wells will have been drilled from Nov. 1, 2008, through Dec. 31, 2009.

Parallel will assign its interest to Chesapeake as each well is spudded, and Chesapeake will fund all of Parallel's drilling, completing, and operating costs until Chesapeake recovers 150% of its costs. At 150% payout per project, 50% of the assigned interest will revert to Parallel.

For all wells drilled after Jan. 1, 2017, Parallel will pay all costs and receive all revenue attributable to its 50% reversionary interest.

As a result of the farmout and decreases in planned activity in its other basins, Parallel cut its 2008 capital budget 76% to $29.1 million.

Screenless frac-packs extend PetroChina well production

Chang Xue Jun
Chen Ren Bao
China National Petroleum Corp.
Tang Hai, China

Deng Hui
Halliburton
Tang Hai, China

Wirdansyah Lubis
Philip Nguyen
Halliburton
Duncan, Okla.

During field trials, PetroChina successfully installed screenless frac-pack completions to control proppant flowback, thereby extending the life of marginally producing wells in Jidong oil fields.

Previous completions with premium screens and high-rate water packs required, on average, a workover every 2-3 months to clean out proppant, formation sand, and fines that greatly reduced production. Sand production also caused erosion damage to sand-control screens and surface equipment and plugging of electric submersible pumps (ESPs).[1]

The operator, therefore, considered screenless frac-pack completions using a tip screen-out design and a newly developed curable resin for controlling flow-back of formation sand and proppant.

Field results of these screenless frac-packs indicate that on-the-fly resin coating treatment effectively stopped the proppant and formation sand from producing back while maintaining the production rates as designed. The jobs have decreased substantially the number of workovers compared to wells left untreated.

The key to PetroChina's success is a liquid resin system (LRS) that is 100% curable, unlike the resin applied to resin-precoated proppants (RPP). The use of liquid resin provides high cohesion strength between the resin-treated particulates so that they can withstand the drag forces created by high production flow rates.

The operator has determined that the technique provides an attractive alternative to conventional frac-pack completions in wells with marginal reserves, eliminating the need for sand-control screens and providing access to other intervals when needed without wellbore restrictions.

Jidong field

Jidong field consists of several smaller fields near Tang Hai in eastern Hebei province, which borders on the Bohai Bay in the North China Sea.

Geologically the fields have four principal producing zones (Minghuazhen, Guantao, DongYing, and Shahejie). The Pliocene Minghuazhen and Miocene Guantao sandstone formations are widespread on Liu Nan, Nan Pu, Gao, Gao Xie, and Miao fields.

The sand grain size of the Pliocene Minghuanzhen (Nm) formation is between 0.04 and 0.35 mm, whereas the size of Miocene Guantao (Ng) formation grains are between 0.04 and 0.85 mm.

The screenless frac-pack completions focused on Minghuazhen and Guantao formations, which have permeabilities ranging from 9.6 md to 2.4 darcy. The Minghuazhen formation has higher permeability and porosity. The formation also is less consolidated compared to the Guantao formation.

Bottomhole static temperatures of the wells range from 145° to 200° F. The oil has 0.71 to 0.74 gravity and 1.19-2.10 cp viscosity at bottomhole conditions.[1]

The Minghuazhen and Guantao formation sands have calcareous or siliceous minerals that bond the grains together. These bonds are soluble in water and brines, depending on the amount of calcareous minerals acting as cementing materials and the amount and salinity of the water contacting the bonds.

These bonds have the same characteristics when the siliceous minerals act as the primary cementing material. This characteristic can be detrimental in weakly consolidated sandstone formations.

Possibly the most severe damage can occur when the cementing materials are soft clay or silt. These materials quickly disperse or dissolve with introduction of small amounts of foreign aqueous

fluid. These fluids can be drilling mud filtrates, cement filtrates, or completion fluids. The sands in both formations vary between good clean sand to interbedded or laminated sand-shale layers, with high water saturation.

Previous technology applied

There are various methods and materials to minimize or prevent production of proppant and formation sand during production, as follows:

- *Forced closure.* The fracture is closed rapidly to maximize closure stress as a means of holding proppant in place. Test results, however, indicate that closure stress may actually contribute to flow-back.[2]
- *Resin precoated proppants* (RPP). RPPs were among the first solutions to the problem of proppant flow-back.[3,4] The resin coatings around each grain react with one another, allowing the grains to bond. This reaction creates a mass of permeable, consolidated proppant. The bonded grains, however, do not always have adequate strength to prevent flow-back.
- *Fibers and deformable particulates.* Fibrous materials and deformable particulates have been used to control proppant flow-back. These solid materials mixed with the proppant become part of the proppant pack and form a network between the proppant and the fibrous strands. Although these materials reduce proppant flow-back, they do not eliminate the problem entirely and usually will greatly decrease fracture conductivity.[5]
- *Surface modification agents.* Surface modification agents (SMAs) are water and oil-insoluble, resinous materials that provide cohesion between proppant grains and do not harden or cure under reservoir conditions. These liquid additives applied to proppant during a fracturing treatment make the proppant grains very tacky (sticky). These materials help enhance fracture conductivity by creating proppant packs having up to 30% increased porosity and permeability.[6,7]

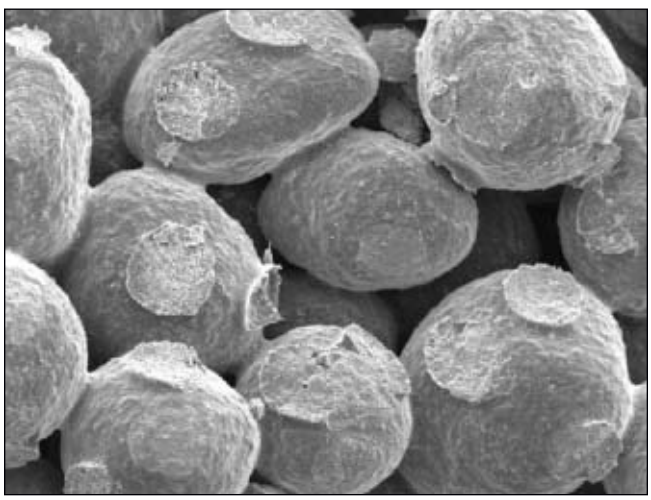
Flow-back studies conducted with SMA-coated proppants indicate that the coating makes proppant significantly more resistant to production; however, sufficient fluid-flow rates can initiate proppant flow-back.

- *Mechanical screens.* The primary function of screens is to provide mechanical support to prevent the proppant-gravel placed in the screen-wellbore annulus from flowing back into the wellbore. The gravel-proppant acts as the primary filter to prevent formation sand and fines production. The screens may become damaged from fines plugging, scale buildup, corrosion, or erosion caused by producing formation fines and sand.[8,9] Installation of sand screens will restrict the wellbore diameter.
- *Frac-pack completions.* Frac-pack completions access reservoirs with high-permeability formations by combining propped fractures and gravel packs to bypass near-wellbore damage and to retain formation sand, respectively.

Tip screenouts help generate short and thick proppant-packed fractures near the wellbore. A tip screenout occurs when proppant at the leading edge of the fracture stops moving and therefore prevents further fracture extension. The technique tightly packs the annulus between the wellbore wall and sand screen to maximize connectivity with propped fractures and to prevent development of void spaces.

Continued injection of the fracture fluid increases the width of the fracture and provides more proppant packing inside the fracture.

There have been successful frac-pack treatments with sand-control screens. Screens in these applications, however, increase well completion costs and are known to fail with time.[8]



Resin footprints show how capillary pressure between grains pulls the liquid resin to the contact points rather than filling the pore spaces. This results in improved proppant pack conductivity (Fig. 1).

Liquid resin systems

Liquid resin systems (LRS) minimize interaction between the resin and the carrier fluid system and minimize logistical problems on location.

Unlike resin-precoated proppants, the liquid resin is 100% curable. The system includes a proprietary additive to help with the removal of crosslinked gel coating on the proppant to enhance contact between proppant grains, thus increasing consolidation of the proppant pack even without applied closure stress.

As a result, even under low or no-closure stress conditions, the jobs can develop high consolidation strength of the coated proppant pack. In addition to the capability to provide consolidation strength, this resin's formulation provides elasticity, which helps to manage the repeated stress-strain cycles that occur during normal production operations.

Capillary pressure between grains pulls liquid resin to the contact points (Fig. 1), thus helping prevent resin from occupying the pore spaces, a property that actually increases proppant pack conductivity.

Conductivity testing shows that coating LRS on the proppant actually improves the conductivity of the proppant pack (Fig. 2). Several factors

LONGFORZA CORPORATION

You need rigs. Not risks.

In a tight rig market, you don't have time to second-guess your supplier. That's a good reason to work with LongForza Corporation.

Straight-talking and no-nonsense, LongForza is a direct distributor of oilfield equipment from premium global manufacturers. And now, you have access to LongForza-supplied onshore drilling rigs in 1000-, 1500- and 2000-HP configurations.

With competitive pricing, aggressive timelines and turnkey services from crew leasing to financing, LongForza has what you need in today's market, including the most important thing – integrity.

Want to know more?

Contact Randy Hall

Blackberry/Email: ranhall@hotmail.com | P: 713-499-6330

Standards

Our manufacturers adhere to API, ASTM, ANSI, ISO and MilSpec and others.

Services

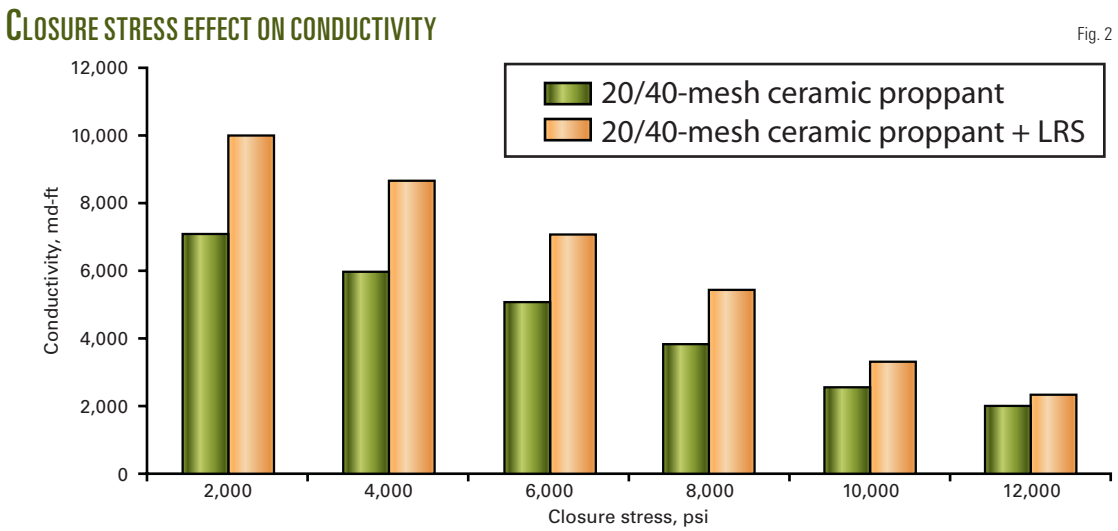
On-site rig-up training and testing are included in our competitive pricing.

Transparency

Who we represent and the warranties we offer – it's all on the table for our customers.

LONGFORZA CORPORATION

www.longforza.com



contribute to this increase in conductivity. The tackiness of LRS coating alters the proppant pack density by increasing inter-grain friction, thus providing higher porosity within the pack.

LRS not only bonds the proppant grains to each other, but also bonds to the fracture faces. This bonding distributes the point-source load of proppant across the formation face, thus reducing the spalling effect and the amount of formation fines intruding into the proppant pack.

Since all the PetroChina wells were perforated at five shots/ft with 90° phasing, more than one half of the generated perforations did not align with the propped fractures.

Without sand-control mechanisms, these perforations could become primary sources for formation sand and fines production. Therefore, it was important that these perforations were cleaned out completely during wellbore cleanup as part of the wellbore preparation before the screenless frac-pack treatment so that they can be completely filled with LRS-coated proppant.

Once the LRS-coated proppant filled up the nonaligned perforations with the propped fractures, the permeable consolidated proppant pack will help lock the formation in place and prevent formation sand and fines from producing back along with production fluid.

Field implementation

PetroChina decided that it was uneconomical to recomplete problem wells with a conventional frac-pack approach because:

- The field had marginal reserves.
- The wells have 5½-in. casing and limited downhole equipment.
- The jobs would require removal of existing sand control assemblies if producing from a lower, previously unproduced interval was considered.

As a result, PetroChina selected the screenless frac-pack option.

The well treatments following hydraulic-fracturing procedures with tip screenout and squeeze pack designs similar to conventional frac-pack techniques, except that the jobs did not install sand screens in the wellbores. The objectives of the screenless frac-pack treatments included:

- Locking proppant in place, preventing these particulates from producing back to maintain fracture conductivity.
- Minimizing formation sand and fines intrusion into the proppant pack and resulting conductivity damage.
- Preventing formation sand and fines production from perforations that were not aligned with propped fractures.
- Bypassing near-wellbore damage and enhancing wellbore communication with as many pay intervals as possible.
- Increasing or maintaining well productivity.

All recompleted wells in this study had had at least one other sand-control job completed previously.

Before the screenless completion, a workover rig prepared the wells by:

- Pulling out previously installed sand screens and packers.
- Washing out solids (gravels and formation particulates) from the wellbore.
- In some cases, reperforating a new interval usually located slightly above the original interval and cementing off the previously perforated interval to plug and fill the voids behind the casing.
- Setting tubing and packers.

The study involved 10 rigless hydraulic fracture treatments in 9 wells, in two series. All treatments succeeded as designed, without premature screenout. The fracturing treatments were through 3½-in. tubing.

The fracturing fluid had a 140-200° F. design temperature. The low gel loading required helped minimize gel residue and maximize conductivity in the proppant pack. The average pad size for the wells was about 5,400 gal, or between 76-82% of total volume.

The fluid system was a 25-lb/1,000 gal guar polymer with a delayed borate crosslinker. Average pumping rate was 18 bbl/min. The proppant was a 20/40-mesh intermediate-strength ceramic pumped with a concentration ramp-up starting from 1 and ramping up to 6-8 ppg.

The last proppant stage was often maintained for 4-5 min to maximize packing and conductivity of the

propped fractures near the wellbore. The average planned proppant amount was 25,000 lb/well.

Production from the nine wells before treatment was 1,073 bo/d; after treatment production was 1,345 bo/d. ✦

References

1. Chang Xue, et al., "Screenless Frac-Pack Completions—Case Studies from Jidong Fields, China," Paper No. SPE 108909, SPE Asia Pacific Oil & Gas Conference and Exhibition, Jakarta, Indonesia, Oct. 30-Nov. 1, 2007.
2. Ely, J.W., "Experience Proves Forced Fracture Closure Works, " World Oil, January 1996, pp. 37-41.
3. Graham, J.W., et al., Method for Treating Subterranean Formation, US Patent No. 3,929,191, 1975.
4. Norman, L.R., Terracina, J.M., McCabe, M.A., and Nguyen, P.D., "Application of Curable Resin-coated Proppants," Paper No. SPE20640, SPE Production Engineering, November 1992, pp 343-49.
5. Al-Ghurairi, F., et al., "Results From a Field Trial Using New Additives for Fracture Conductivity Enhancement in a High-Gas Screenless Completion in the Jauf Reservoir, Saudi Arabia," Paper No. SPE 98088, SPE International Symposium on Formation Damage Control, Lafayette, La., Feb. 15-17, 2006.
6. Nguyen, P.D., et al.: "Enhancing Fracture Conductivity through Surface Modification of Proppant," Paper No. SPE 39428, SPE Formation Damage Control Conference, Lafayette, La., Feb. 18-19, 1998.
7. Weaver, J., et al., "Application of Surface-Modification Agent in Wells with High Flow Rates," Paper No. SPE 53923, Latin American and Caribbean Petroleum Engineering Conference, Caracas, Apr. 21-23, 1999.
8. Asadi, M., and Penny, G.S., "Sand Control Screen Plugging and Cleanup," Paper No. SPE 64413, Asia Pacific Oil & Gas Conference and Exhibition, Brisbane, Australia, Oct. 16-18, 2000.
9. Stanley, F.O., et al., "Matrix Acidizing Horizontal Gravel-Packed Wells for Fines Damage Removal," Paper No. SPE 65519, SPE-Petroleum Society of CIM International Conference on Horizontal Well Technology, Calgary, Nov. 6-8, 2000.

The authors

Xue Jun Chang is deputy executive manager and professional senior engineer in Jidong Oilfield of China National Petroleum Corp. His current work focuses on research, development, and management of oil and gas field. Xue Jun Chang holds an MS in engineering from the Beijing Exploration and Development Research Institute and a PhD in mineral resource prospecting and exploration from the China University of Mining and Technology. He is an SPE member.

Ren Bao Chen is deputy chief engineer in Jidong oil field of China National Petroleum Corp. His current work focuses on research, development, and field applications of oil recovery and surface engineering. Chen holds a PhD in geology engineering from the China University of Geosciences.

Deng Hui was a technical professional in completions with Halliburton in China. He has more than 10 years with the oil and gas industry. Hui holds a BS in petroleum engineering from the Jianghan Petroleum University.

Wirdansyah Lubis is a technical advisor at the Halliburton Technology Center, Duncan, Okla. His current work focuses on the technical supports and services for sand control. Lubis holds a BS in mining engineering from the UNISBA, Indonesia.

Philip D. Nguyen is a senior technical advisor in technology at the Halliburton Technology Center, Duncan, Okla. His current work focuses on research, development, and field applications of curable and noncurable resins for hydraulic fracturing and sand control. Nguyen holds a PhD in chemical engineering from the University of Oklahoma.

Gulf of Mexico insurance availability is tightening

Paula Dittrick
Senior Staff Writer

Oil and gas companies need to very precise this year regarding their insurance needs for Gulf of Mexico operations because insurance providers report that their own financial returns are severely squeezed after a number of hurricanes in recent years.

"This has really tested insurers and resulted in unprecedented uncertainty in the insurance market," said Paul Dawson, energy underwriter at specialist insurer Beazley Group PLC of London. "Insurers at the moment are very nervous."

A series of exceptional insurance losses started with Hurricanes Ivan in 2004 and Hurricanes Katrina and Rita in 2005. Hurricanes Gustav and Ike in 2008 caused still more losses.

The withdrawal of some insurance players combined with a reduced risk appetite from remaining underwriters means reduced overall underwriting capacity is available for oil and gas companies trying to renew or initiate new insurance policies this year. Higher insurance premiums are coming at a time when oil and gas prices are falling.

Ike's storm surge put in motion about 50% more water than the 2005 storms, and Ike alone cost energy insurers more than $4 billion, Dawson said of estimates based upon information from Lloyd's of London.

Lloyd's is an insurance market where multiple financial backers come together to pool and spread risk.

Reinsurers provide insurance to insurance companies; reinsurance is arranged early in the year.

Various insurance markets exist worldwide for oil and gas companies, although Lloyd's historically has been a key market for upstream insurance, Dawson said. Another source of insurance for offshore operators is Oil Insurance Ltd. (OIL), a mutual insurance company that includes Chevron and Royal Dutch Shell among its members.

OIL reported its estimated losses for the various storms at $895 million for Ike, $1.5 billion for Rita, and $2.1 billion for Katrina.

"Ultimate settlements will depend on the final adjustments of all the losses, a process we expect to take quite some time," OIL said.

Beazley's Dawson said none of the hurricanes in recent years is "the worst that we will ever see." Difficulty in predicting hurricane frequency and scale has resulted in some insurers withdrawing from Lloyd's, which insures 60% of the world's upstream oil and gas risks with an overall premium approaching $1.8 billion.

Dawson believes coverage is available at a reasonable price for oil and gas companies whose risk managers are prepared and willing to help insurance underwriters reduce uncertainty over potential liabilities

Underwriting collaboration rising

Generally oil and gas risks are shared among a number of energy insurers through a process known as syndication. This allows insurers to spread risk better in their portfolios.

The ability to efficiently build insurance capacity through a syndicated process allows insured companies to obtain coverage for large and complex risks.

In 2009, it will be more difficult to achieve consensus among multiple insurers to complete a policy placement together. Insurers may set individual terms governing their participation. While this process might solve the short-term problem of building capacity, it adds considerable administrative complexity and is likely to complicate claims negotiations, Dawson said.

"Communication is very important" for underwriters trying to understand their exposure and trying to align the coverage they offer with oil and gas companies' future economic interest in specific projects, he said.

As insurers put their own reinsurance programs in place this year, oil and gas companies will find insurers requiring more details about which oil company assets are to be insured, where, and at what value.

"Oil and gas companies themselves have to be very explicit in the risk that they wish to transfer," Dawson said.

Insurers require certain information before they are prepared to underwrite the risk.

Risk managers at oil companies need to review the resulting documentation carefully and ask questions to understand better how coverage will work in practice, Dawson said.

Assessing likely loss value

If a production platform is damaged or destroyed, it is reasonably straightforward for an underwriter to assess loss value, Dawson said. But potential claims values are harder to determine with damage or loss of wells.

A "control-of-well" policy, which insures against the consequences of losing control of a well, typically estimates exposure based upon the number and depth of wells. This assumes that all

wells have equal status and are worth salvaging.

Typically, older platforms have a number of unproductive wells that would need to be abandoned if the production platform were damaged severely. Storm-related abandonment costs can be 10 times higher than the costs that would have been incurred before the storm because of the increased complexity.

Dawson said underwriters trying to understand their exposure to wells will need oil companies to outline which wells are scheduled for abandonment and the expected abandonment costs.

Likewise, operators may have a number of producing wells, but the value of the estimated remaining reserves is relatively low. Underwriters will need to know what plans companies have to reenter or replace wells if the platform were lost.

Insurers might want to provide only limited coverage for wells that the company would not replace, Dawson said.

Typical detail scenario

Energy companies own around 3,800 platforms in the Gulf of Mexico. The cost of abandoning these wells once they are no longer economic rises tenfold if storm damage has so destabilized them that access becomes problematic and repair processes much more complex.

Because of exposure to the inflated costs of redrilling or capping off storm-damaged platforms wells, insurers operating through Lloyd's of London will need the following data as standard:

- Asset name.
- US Minerals Management System complex identification.
- Gulf of Mexico block and area name.
- Deck height and water depth.
- Number of well slots.
- For assets not in federal lease blocks, latitude and longitude.
- For pipelines, block number start and end points. ✦

US ETHANE OUTLOOK
—Conclusion

Midstream, petchem players must face problems of increased ethane capacity

Peter Fasullo
*En*Vantage Inc.*
Houston

This conclusion to a two-part series on the outlook for US ethane analyzes changes occurring in the US ethylene industry and whether that industry can consume more ethane supplies that are poised to come onto the market. This part also examines the magnitude of the ethane extraction overhang and its implications for gas producers, gas processors, and ethylene producers.

Part 1 (OGJ, Feb. 16, 2009, p. 44) described the fundamentals that drive US ethane balances, detailed the market forces driving the expansion of US gas processing capacity, and forecast how these expansions will increase the ability to extract ethane in the US

US ethane demand

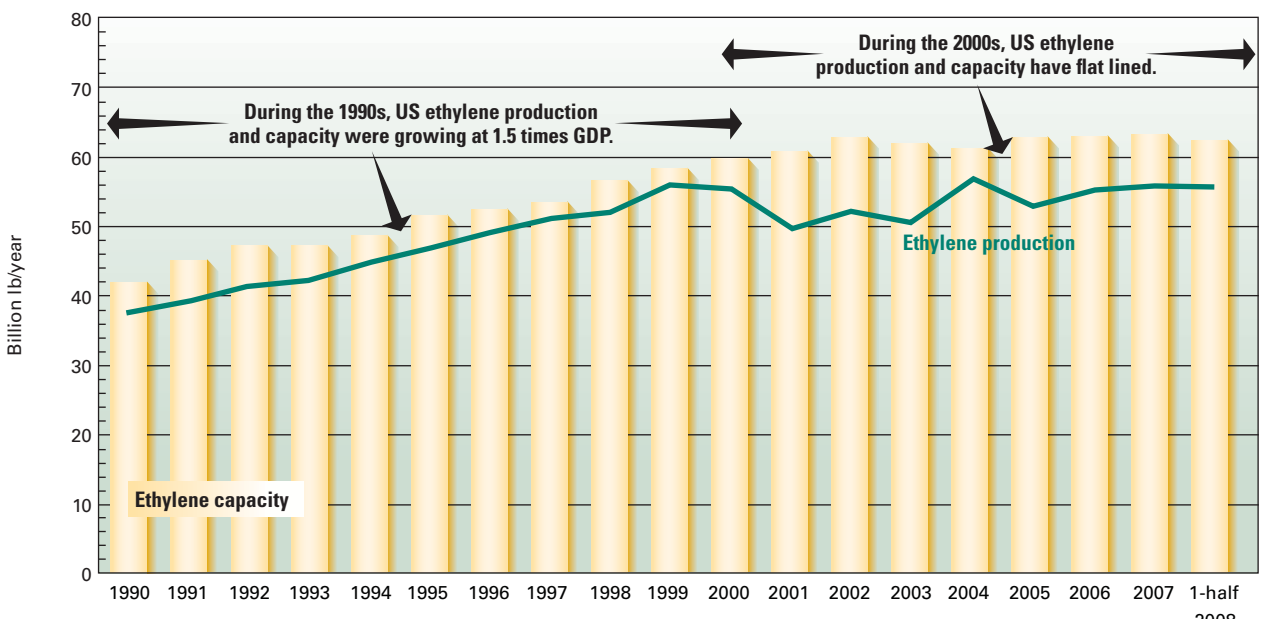
The US ethylene industry consumes more than 50% of the US NGL supply. And, because ethylene production is the only end-use market for ethane in the US, it is important for any NGL midstream company to pay close attention to the health of the US ethylene industry and the actions of ethylene producers with regard to feedstock selection.

The 20-month period January 2007 to August 2008 was a fairly good one for US ethylene producers for several reasons:

- Low gas-to-crude price ratios in the US made US ethylene producers more competitive globally.
- The US ethylene industry's ability to shift to ethane and ethane-propane mix gave it a competitive edge over heavy feedstock crackers in Europe and Asia. Those US ethylene producers leveraged to heavy feedstocks, however, suffered in the high crude price environment during first and second-quarter 2008.
- Although the US economy was slowing, the low US dollar created an export market for US petrochemicals.
- US ethylene production remained

US ETHYLENE CAPACITY, PRODUCTION: 1990-2008

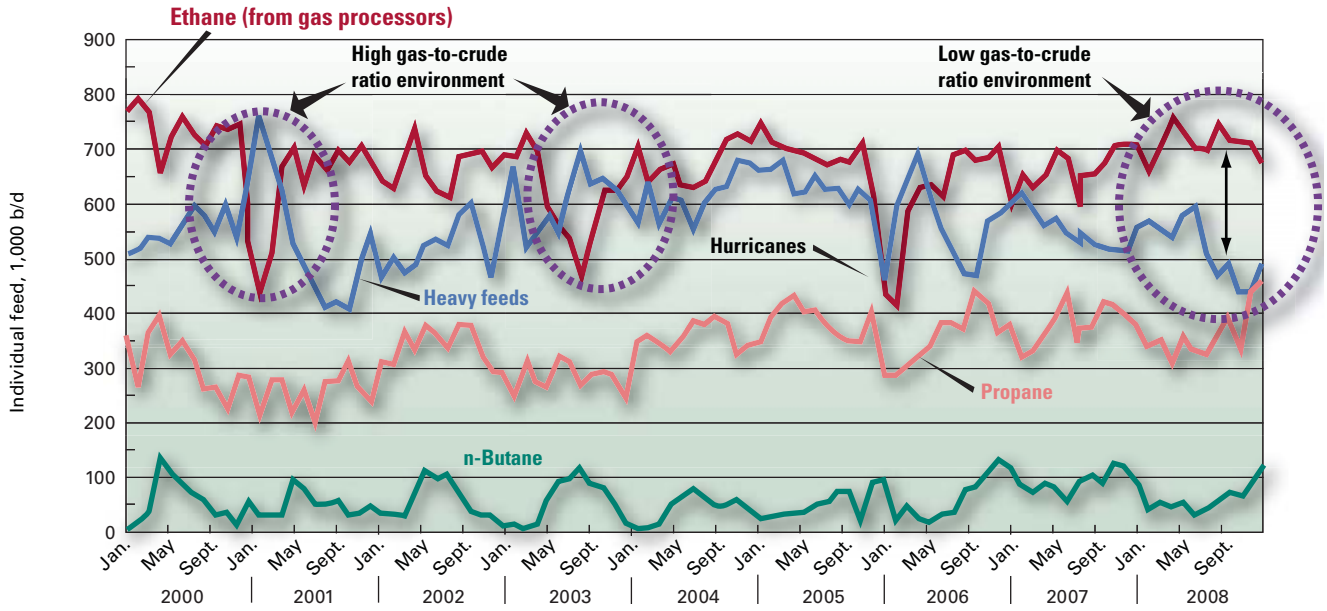
Fig. 1



Source: En*Vantage, CMAI, and Hodson reports

US ETHYLENE FEEDSTOCK CONSUMPTION

Fig. 2



Source: Hodson reports and En*Vantage

steady at around 55.1 billion lb/year (88% operating rate).

For gas processors building and announcing new cryogenic plant capacity, it appeared the ethylene industry was healthy, and those processors assumed that ethylene producers could handle additional ethane volumes coming onto the market. Yet, an assessment of the US ethylene industry over the past 18 years revealed several signs that the US industry was maturing and shifting in ways that would make it difficult for ethylene producers to crack much more ethane.

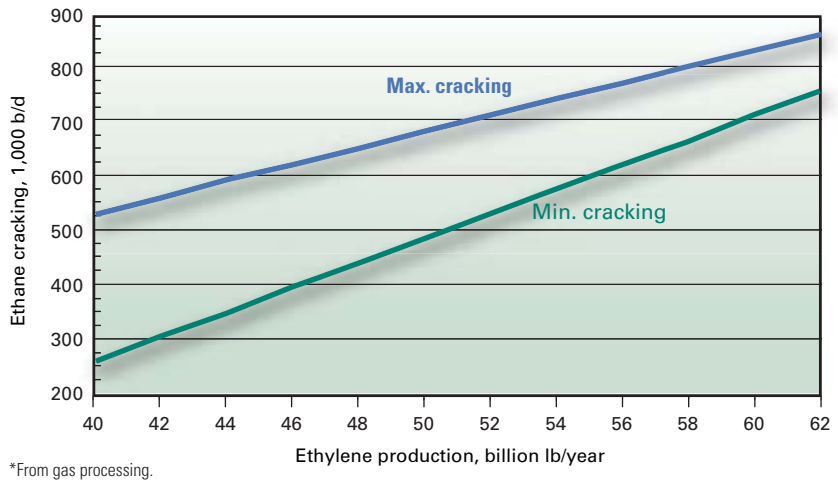
First, US ethylene capacity has stagnated and ethylene production has moved within a fairly narrowed range between 50 billion and 55 billion lb/year since 2000 (Fig. 1). This pattern contrasts to the growth period in the 1990s when ethylene capacity and production were expanding at 1.5 times that of US economic growth, based on calculations using information from Houston-based CMAI (www.cmaiglobal.com), Hodson Report ethylene production and capacity numbers (www.paceconsultants.com), and US gross domestic product growth from US Federal Reserve (www.federalreserve.gov).

US exports of ethylene derivatives were one of the major drivers for ethylene growth during the 1990s. After 2000, US demand for ethylene stalled due to slower US economic growth and reduced demand for petrochemical exports as ethylene capacity expanded overseas.

Second, spikes in natural gas prices relative to crude oil prices that occurred in winter 2000-01 and throughout most of the 2003 caused light feedstocks (ethane and propane) to be uneconomical for ethylene producers to crack and left the industry skeptical of the long-term availability of natural gas in the US. Consequently, ethylene producers shifted capacity away from cracking light feedstocks and increased their ability to crack a wide range of feedstocks and heavier feedstocks, such as naphthas and gas oils. By the end of 2007, light feedstock crackers constituted only 35% of US ethylene capac-

ETHANE CRACKING,* ETHYLENE PRODUCTION TRENDS

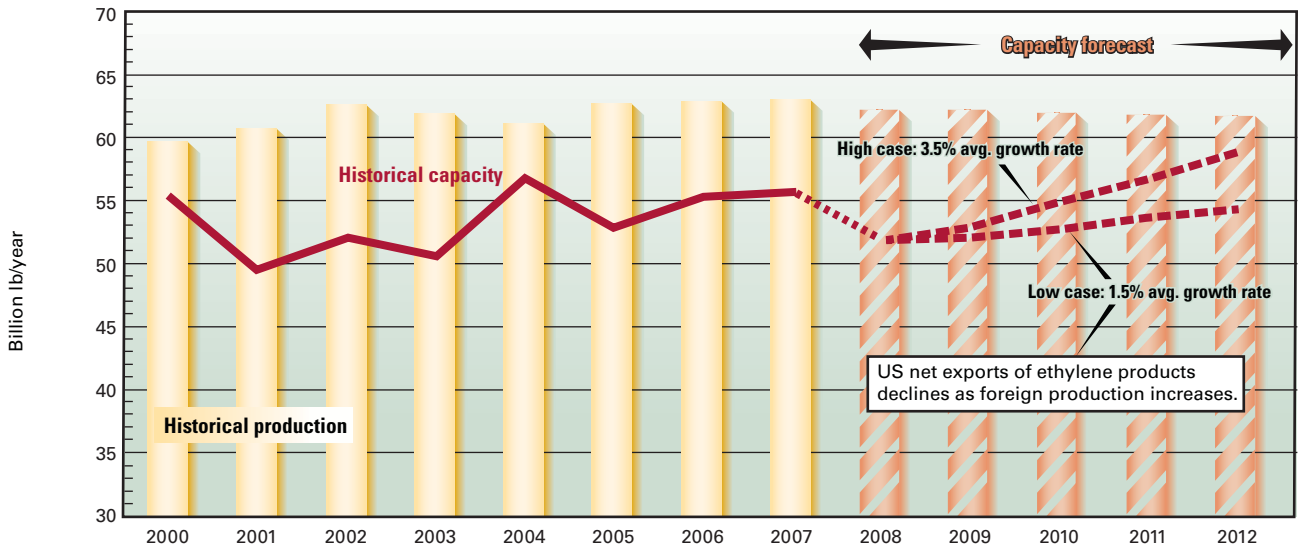
Fig. 3



*From gas processing.

US ETHYLENE CAPACITY, PRODUCTION: 2000-12

Fig. 4



Source: Historical data: CMAI, Hodson reports; forecast: En*Vantage

ity, compared with 50% in 2000 (see accompanying table). In addition, 21% of US ethylene plant capacity is aging (35 years and older), and this capacity represents 33% of total ethane consumption.

Relatively stagnant ethylene production and the shift to more flexi and heavy feed crackers have kept the demand for ethane from gas processing well below 800,000 b/d for the past 8 years (Fig. 2). Just as important is the US ethylene industry's current wide range of flexibility to swing off and on ethane when feedstock economics warrant. Back in winter 2000-01 and again in 2003 when gas-to-crude price ratios were well above historical averages, the ethylene industry was able to drop ethane cracking by 200,000 to 300,000 b/d in a matter of a few weeks. Conversely, in 2007 and through first-half 2008, when gas-to-crude ratios were low, the ethylene industry was able to maximize ethane and propane cracking and minimize heavy feedstocks.

The US ethylene industry's ability quickly to swing feedstocks is largely responsible for the volatility seen in ethane consumption. Adding to this volatility, according to En*Vantage research, is that the US ethylene industry cannot maximize or minimize ethane for a period greater than 3-4 months without disturbing the supply-demand balance for ethylene coproducts such as propylene, C_4 olefins, and pyrolysis gasoline. These ethylene coproducts are valuable building blocks in producing other petrochemical products. And, because ethane cracking produces few coproducts, ethylene producers must balance their need to optimize profits when ethane is the preferred feedstock vs. keeping the coproduct market adequately supplied.

At any given production level for ethylene, ethane demand can vary, depending on whether the ethylene industry is minimizing or maximizing ethane cracking. The key to predicting ethane demand is to understand how ethane cracking can vary at a given level of ethylene production.

Over the past several years En*Vantage has analyzed ethane cracking data vs. US ethylene production levels and has modeled the current configuration of the US ethylene industry to determine minimum and maximum levels of ethane cracking. Fig. 3 shows the results.

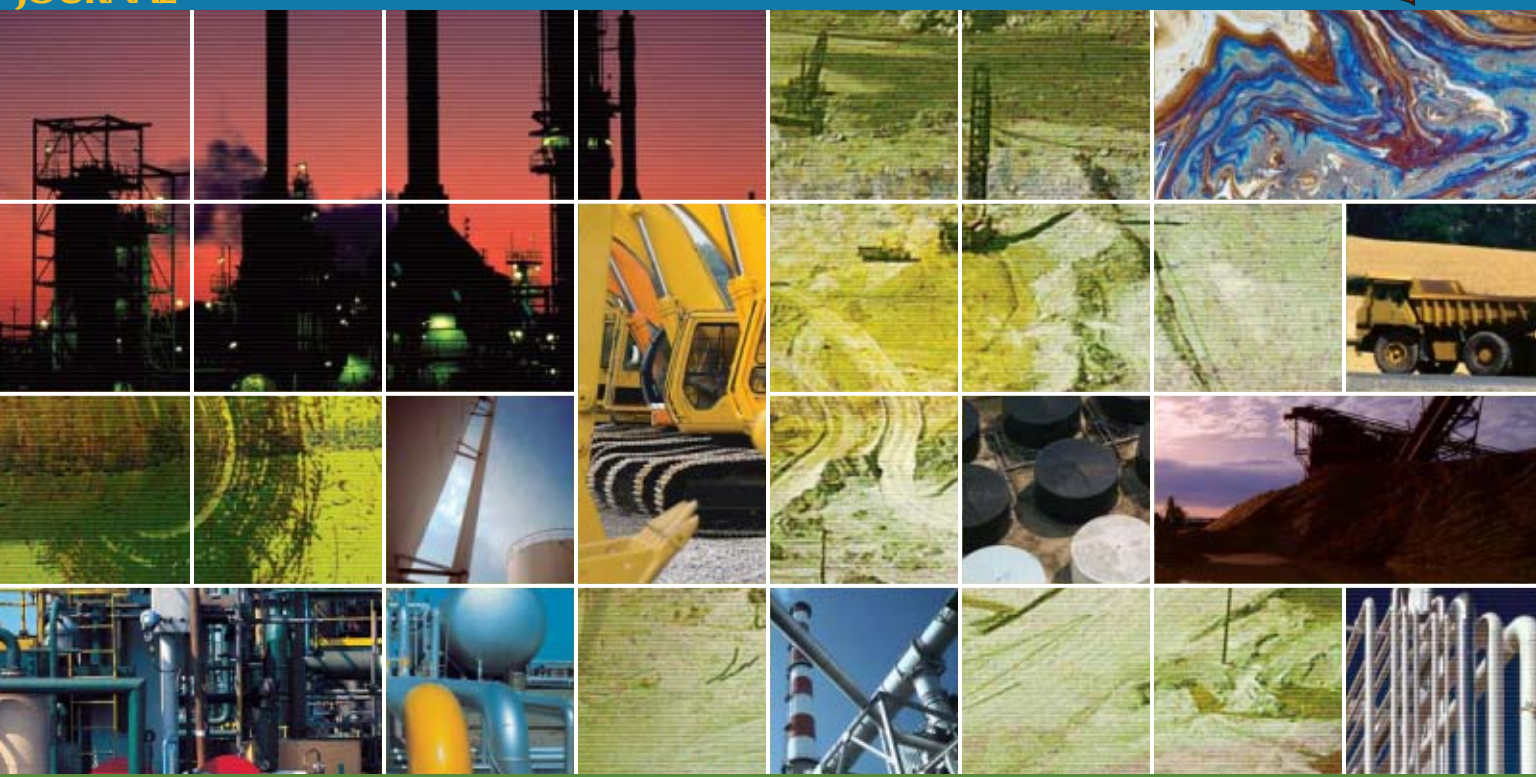
Two major trends appeared from our analysis:

1. As ethylene production increases the need for ethane cracking increases. That is, when the ethylene industry requires that next incremental pound of ethylene, it turns to ethane because ethane is the feedstock that provides the highest ethylene yield.

SHIFT IN US ETHYLENE CAPACITY

Basic types of ethylene plants	Effective capacity* 2007 Billion lb/year	2007 %	2000 Billion lb/year	2000 %
Purity ethane crackers	4.5	7.2	6.6	22.0
E/P crackers	17.4	28.0	23.2	38.6
Flexifeed crackers	31.4	50.5	27.1	45.1
Heavy feed crackers	8.9	14.4	3.2	5.3
Total effective capacity	**62.2**	**100.0**	**60.1**	**100.0**

*Capacity excludes plants that are mothballed.
Sources: Hodson Report and En*Vantage



OIL SANDS HEAVY OIL TECHNOLOGIES™

Oil Sands and Heavy Oil Technologies Conference & Exhibition
July 14 – 16, 2009
Calgary TELUS Convention Centre, Calgary, Alberta, Canada

Oil for tomorrow

THE PROMISE. THE PRACTICE.

Technologies developed for the oil sands and heavy oil resources of Alberta are vital to more than tomorrow's oil supply. They represent solutions to problems encountered throughout the oil industry.

Problems like managing costs during periods of lower oil prices, dealing with labor shortages, handling sulfur, controlling air emissions, producing oil under difficult conditions, mitigating surface impacts, recycling produced water, capturing and sequestering carbon dioxide, and more.

While it finds solutions to these challenges, the oil sands and heavy oil industry continues to develop unconventional resources that are critical to meeting the world's long-term needs for reliable hydrocarbon supplies.

Continued progress in oil sands and heavy oil producing technologies means progress in ensuring a dependable supply of petroleum products at a time when traditional recovery methods are strained by additional demand from rapidly developing industrial nations.

The Oil Sands and Heavy Oil Technologies Conference & Exhibition is the premier forum for the people who make this innovation and progress possible.

Don't miss this opportunity to present your product or service to a powerful, influential audience. Join the *Oil & Gas Journal* and our conference attendees in Calgary this summer for the third annual Oil Sands and Heavy Oil Technologies Conference and Exhibition.

FOR EXHIBITOR AND SPONSORSHIP SALES INFORMATION PLEASE CONTACT:

Kristin Stavinoha *(Petroleum A - L)*
Ph: +1 713 963 6283
Fax: +1 713 963 6212
Email: kristins@pennwell.com

Peter D. Cantu *(Petroleum M - Z)*
Ph: +1 713 963 6213
Fax: +1 713 963 6212
Email: peterc@pennwell.com

Bob Lewis *(Power)*
Ph: +1 918 832 9225
Fax: +1 918 831 9875
Email: blewis@pennwell.com

Owned & Produced by: PennWell

Flagship Media Sponsors: OIL&GAS JOURNAL, POWER Engineering, OIL&GAS FINANCIAL JOURNAL, Oil, Gas & Petrochem EQUIPMENT, Offshore

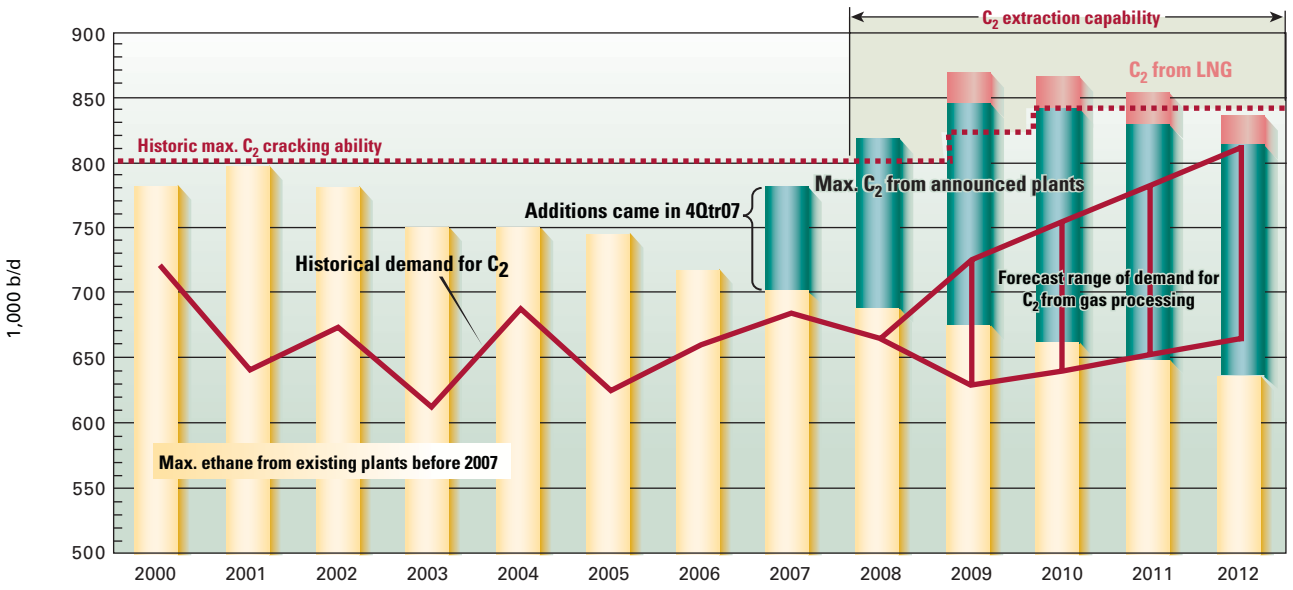
Media Partners: oilsandsreview, oilweek

Sponsors: VEOLIA WATER Solutions & Technologies

www.OilSandsTechnologies.com

ETHANE EXTRACTION CAPABILITY, DEMAND

Fig. 5



Source: Historical data: CMAI, Hodson reports; forecast: En*Vantage

2. When the ethylene industry is operating at low utilization rates, it has more flexibility to swing ethane cracking levels than when it is operating at higher utilization rates. Consequently, the US gas processing industry can be subject to considerable volatility in the demand for its ethane when the ethylene industry is operating at low utilization rates, as when there is an economic recession.

The results shown on Fig. 3 make it possible to predict how ethane demand will trend for the next several years by predicting the level of ethylene that will be produced in the US in the near future. Fig. 4 shows our forecast for ethylene production; our base case is for ethylene production to average less than 55 billion lb/year through 2012 as US net exports of ethylene products decline as foreign petrochemical production increases. Absolute best or high-case scenario for US ethylene production is of 3.5%/year, taking ethylene production near 60 billion lb/year by 2012.

Applying our base and high case forecasts for ethylene production to our regressions for ethane demand indicates that the US gas processing industry should develop a substantial overhang in ethane extraction capability (Fig. 5). Even our most optimistic scenario for ethane demand would require the US ethylene industry as currently configured to maximize ethane cracking continuously, which would be difficult to do and still meet ethylene coproduct requirements.

Implications processors

Even before the current economic downturn, the influx of more ethane on the market from new processing plants coming online in 2007 and 2008 was putting additional pressure on the value of ethane relative to crude oil, which has been in decline since 2003 due to the reduction in light-end crackers (Fig. 6).

With a long-term average near 50%, ethane's value relative to crude started to crater in 2008 into the 30% range, reflecting the rising sensitivity of the market to additional ethane supplies. This sensitivity will only grow as more processing plant capacity comes on stream in 2009 making the ethane market more susceptible to any events that might reduce ethane cracking, such as ethylene plant turnarounds, unexpected cracker outages, or plant shutdowns due to economic reasons.

Over the long haul, devaluation of ethane relative to crude oil can be a double-edged sword for gas processors. Ethane's lower relative value makes it a more preferred ethylene feedstock. Lower ethane-to-crude price ratios, however, expose processors to much lower ethane prices when crude prices decline and to much lower frac spreads when gas prices stabilize or increase relative to crude prices.

Under the current economic recession, ethane demand is off at least 25%. Consequently, ethane frac spreads have plunged into negative territory. A long-term analysis of the ethane frac spread indicates how much of an anomaly the record high frac spreads in 2007 and 2008 were in comparison of the long-term average (Fig. 7). It also demonstrates how fragile ethane frac spreads can be when economic conditions deteriorate, especially when more ethane extraction capability is brought online.

Depending on their risk profile, gas processors are being affected differently by the ethane extraction overhang.

When we first identified the threat of an ethane extraction overhang about 2 years ago, we profiled which processors would be subject to the most economic risk to ethane.

Gas processors with the greatest economic risk to ethane are those processors with most if not all of the following features in their profile:

- "Keep whole" contracts.
- No ability to minimize ethane recoveries without losing propane.
- Little or no integration along the NGL value chain.
- High transportation and fractionation fees.
- High fuel usage and operating costs.
- Little or no gas basis offset.
- Low-value market for ethane.
- Little integration with a gas producer.

Conversely, those processors having most if not all the features below should have a lower risk exposure to ethane:

- Percent-of-proceeds (POP) and fixed-fee processing contracts.
- Ability cleanly to reinject ethane.
- High degree of integration along the NGL value chain.
- Low transportation and fractionating fees.
- Efficient operations.
- Wide gas basis offset.
- High-value market for ethane.
- Integration with a gas producer.

Independent gas processing companies with "keep whole" exposure to ethane and little, if any, integration along the NGL value chain are in the high-risk category and are suffering the most during the current economic recession. But even after the recession passes, independent processors with "keep whole" contracts—especially in the Midcontinent, a low-value ethane market—will continue to be at a competitive disadvantage to the larger integrated midstream players with processing.

Integrated players can operate under variable cost economics for the transportation, fractionation, and storage of their NGLs, which gives them an economic advantage to keep recovering ethane when many independent processors may not have the economics to recover.

Also, those processors with POP contracts have greater staying power to continue to recover ethane when ethane frac spreads are negative. Over the past several years many processors retooled their processing contracts from "keep whole" to POP. During an economic recession when ethane demand is down, more ethane supplies can still come onto the market. Gas processors with POP contracts usually have the economics to recover ethane, further aggravating the oversupply situation for ethane and keeping ethane frac spreads at very marginal levels.

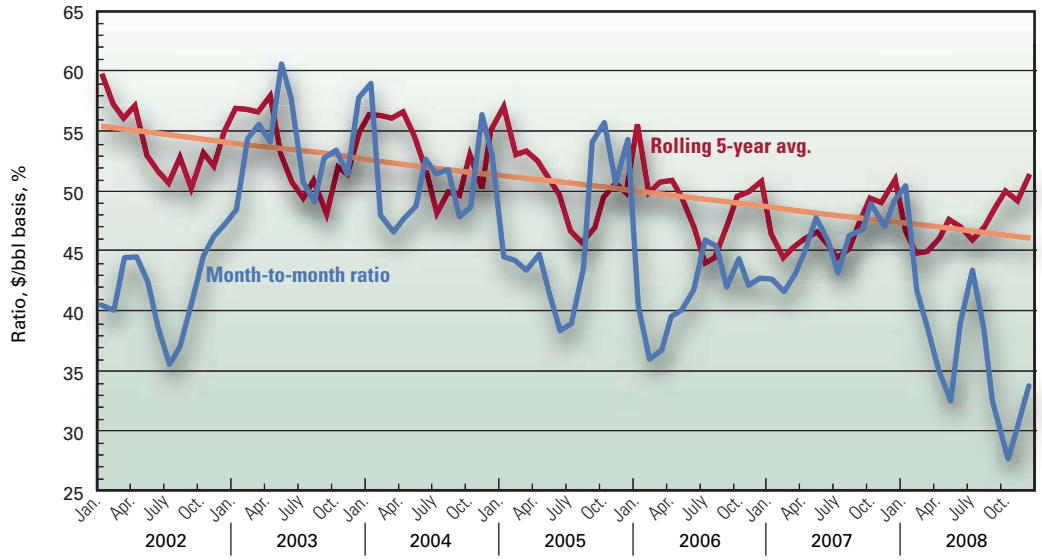
There is always the possibility that reduced drilling due to depressed natural gas and crude oil prices will curtail gas production growth and NGL extraction. This is difficult to quantify, and, besides, the effect on gas production, if it occurs, may be short lived because reserves are present.

Unless the economic recession causes processors to cancel or delay processing plants that are announced to come online, ethane extraction capability is on track to exceed the ability of the ethylene industry to crack ethane.

The ultimate key to "lifting all boats" in the processing industry will depend on efforts by US ethylene producers to increase their capability to crack more ethane at existing plants, because additional ethylene capacity will not be built in the US in the foreseeable future. Obviously the economy needs to improve, but before the economic recession hit, many ethylene producers that were leveraged to heavy liquid feedstocks were examining ways to access and crack more ethane at their facilities.

En*Vantage estimates that the US ethylene industry could increase ethane

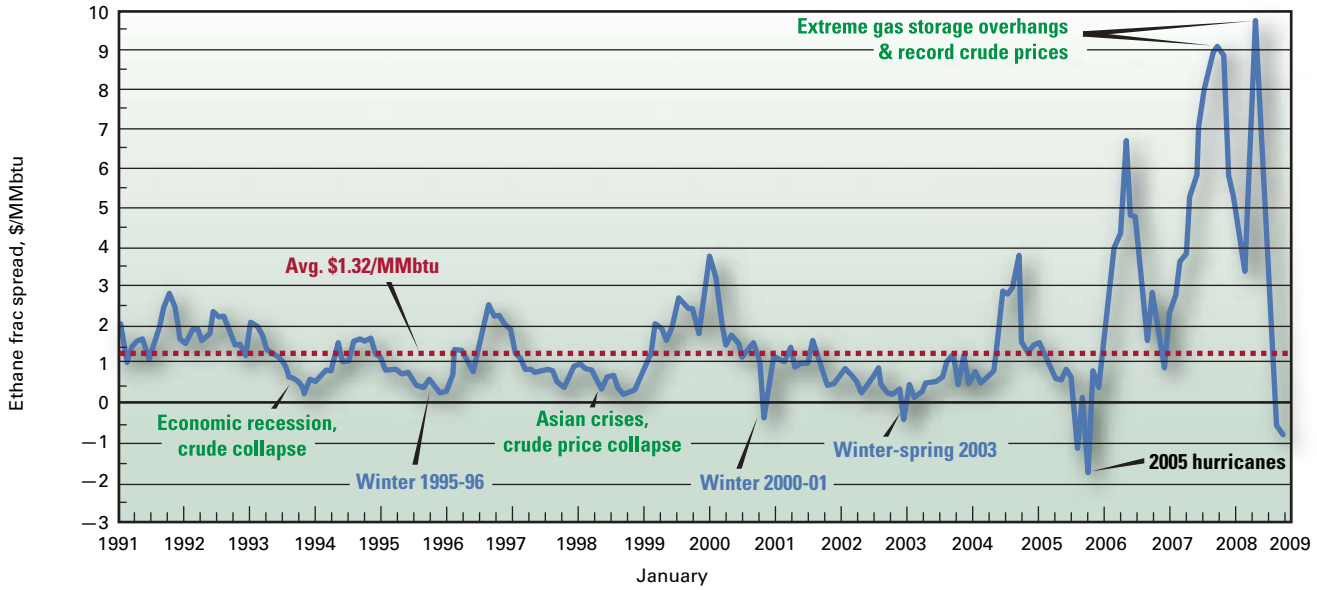
ETHANE, CRUDE-PRICE RATIO* Fig. 6



*At Mont Belvieu.

ETHANE FRAC SPREADS*

Fig. 7



*Mont Belvieu ethane less Henry Hub gas, $/MMbtu.

cracking capability by another 50,000 to 75,000 b/d at existing plants, but several obstacles remain:

• Some heavy-feed crackers are isolated from large ethane distribution systems. Additional ethane distribution pipelines are needed to access these ethylene plants. Midstream companies are reluctant, however, to bear the full risk in building more logistics to handle ethane without the ethylene producer guaranteeing a minimum throughput.

A key point to remember is that ethylene producers will always have the option to crack more or less ethane, depending on feedstock economics at any given time. Gas processors and NGL midstream players, on the other hand, are making the commitment to extract and distribute the ethane.

• Maximizing ethane cracking at some heavy-feed ethylene plants may require investments to retool the plants' process equipment to handle a product stream richer in ethylene and lighter hydrocarbons. There is the problem that if more ethane is cracked, coproduct production could suffer, and petrochemical companies will need to find ways to meet downstream coproduct requirements.

Additionally, the economic slowdown plus more ethylene plants worldwide could dampen a petrochemical company's enthusiasm to make investments to access and handle more ethane.

• Most importantly, ethylene producers need to be convinced that ethane supplies will be reliable over the long-term. Historically, the nation's petrochemical industry has always been skeptical of the long-term viability and competitive pricing of natural gas resources and hence NGLs in the US.

It will take a continuous effort by gas producers, processors, and NGL midstream players to assure the petrochemical industry that natural gas reserves, production, and NGLs are sustainable over the long haul.

Undoubtedly, the severity of the current economic recession is distorting the supply and demand for ethane, but when the recession is over, the prospects for an ethane extraction overhang remain. Gas processors that have made investments in extracting ethane could continue to see marginal returns.

It will require the ethylene industry to make a concerted effort to increase its ethane cracking capability. If the ethylene industry responds, there are unique opportunities for integrated midstream players to expand and grow, which could ultimately help independent processors. More NGLs require more NGL take-away capacity, greater need for full fractionation, particularly in Mont Belvieu, and additional distribution pipelines to deliver ethane to ethylene plants that lack sufficient access to ethane.

Observations

The US gas processing industry has always been focused on serving the natural gas producer either extracting as much value out of the natural gas stream or conditioning the gas. Gas processors have always assumed that NGL markets would be sufficient, and it would have been unusual for a cryogenic processing plant to be built for the sole purpose of serving the petrochemical market for ethane.

The current economic recession has painfully reminded gas producers and gas processors that the economic viability of any processing plant that maximizes ethane recovery is intricately tied to the health and actions of the US

petrochemical industry.

The problem is that the US petrochemical industry is unlikely to expand ethylene capacity in the foreseeable future and the recent recession has actually caused the industry to contract. More gas processing capacity coming online will prolong the ethane extraction overhang, and all participants involved in gas processing and the handling of NGLs will need to prepare for a greater frequency of marginal ethane extraction economics and lower recoveries even when the economy improves.

Gas producers and processors need to take an active role in promoting the long-term availability of natural gas and ethane in the US because greater cooperation and sharing of economic risks between midstream and petrochemical companies are required to increase the capability to crack more ethane at existing ethylene facilities.

For petrochemical companies, this is a unique opportunity to increase feedstock choice by taking advantage of ethane's growing availability and lower valuation relative to competing feedstocks.

In the meantime, individual processors looking to build that next cryogenic processing plant must carefully assess their competitive positions against more integrated midstream players, the market's need for more ethane, and the relative value for the incremental ethane barrel. No longer can the ethane market be taken for granted by the gas processing industry. ✦

Marine CNG opens alternate production, delivery options

Steven Sparling
Daron Threet
Nate Teti
Sutherland Asbill & Brennan LLP
Washington, DC

Recent offshore natural gas opportunities in US waters often share the same obstacle: a lack of pipeline infrastructure to support offshore drilling and transport the gas to shore.

One solution is the use of compressed natural gas vessels to transport gas from production sites to market (Fig. 1). While still in its infancy and working through commercial and regulatory hurdles, the marine CNG industry may ultimately be the key to unlocking large oil and gas reserves in the US and abroad.

This article details the advantages of marine CNG, touching on current developments in the industry.

New production

The expiration of the 26-year-old moratorium on drilling on the US offshore continental shelf could open vast new areas to offshore drilling, including sites along the East and West coasts previously off limits to new exploration and production. Several potentially high-yield natural gas discoveries are also under development in the deepwater Gulf of Mexico, with dozens of other new prospects identified and under evaluation. Many of these opportunities—in both deepwater and in new geographic regions—lack pipelines to transport natural gas to shore.

Pipelines in the Gulf of Mexico often do not extend far enough to reach new deepwater fields. On the East and West coasts the longstanding ban on offshore drilling has even more sharply limited development of pipeline infrastructure. The lack of pipelines to serve new fields forces developers either to build new pipelines or seek other transportation solutions.

Stranded gas

More than one-third of the world's gas reserves cannot currently be developed and are thus considered stranded. Gas can be "stranded" for a number of reasons, including the presence of physical or technical barriers to extraction, such as lying in areas too deep to drill, and economic reasons, such as lying beyond the reach of current pipeline networks. Political considerations, such as the moratorium on OCS drilling and state or local opposition to drilling, can also cause gas to be stranded.

Stranded gas reserves can include deepwater plays, marginal fields historically considered too small to develop, and fields in newly opened regions, such as along the East Coast. Stranded gas can also affect offshore oil production, as natural gas is frequently a by-product of oil drilling operations (associated gas). While associated gas can be rein-

CNG vessels, such as the one pictured here, offer alternatives both for field development and for opening new markets (photo from EnerSea Transport LLC; Fig. 1).

jected into a well to increase output, the US Minerals Management Service restricts reinjection to limited short-term circumstances.

MMS similarly restricts flaring or venting unwanted gas at the wellhead during normal operations. Environmental and resource conservation concerns have also led to increased international restrictions on flaring and venting.

With reinjection, flaring, and venting generally prohibited, operators in the US must find solutions to transport both associated and nonassociated gas to market. The traditional solution is to build out existing pipeline networks, letting gas move to shore through interconnecting pipelines. This solution, however, may not be economical, particularly in remote deepwater locations potentially requiring pipelines to stretch long distances across harsh bottom geology.

In the absence of an alternative solution, extensive parts of the East and West coasts will require construction of new pipelines to accommodate new production. Experience with the siting of offshore LNG terminals suggests new production projects in regions outside the gulf will face regulatory and political hurdles stemming from environmental concerns, among other issues, resulting, at a minimum, in limiting extensive build-outs in some regions.

Excelerate Energy's Gulf Gateway Energy Bridge offshore port began LNG operations off Louisiana in 2005. Similar systems could be used both to load and unload CNG vessels (photo from Excelerate Energy; Fig. 2).

CNG solution

CNG vessels provide an alternative for transporting potentially stranded natural gas from production sites to market.

Marine CNG technology compresses natural gas to pressures of 1,200-3,500 psi to reduce its volume by about 200 times for transportation in dedicated vessels. While liquefying natural gas results in a higher reduction in gas volume (around 600 times), LNG liquefaction equipment, vessels, and regasification facilities involve higher capital expenditures than CNG projects and thus are primarily economical for shipping large volumes over long distances (e.g., more than 2,000 miles). CNG projects are economical over shorter distances (e.g., 500 miles) and in areas where pipeline construction is either not possible or prohibitively expensive.

CNG vessels, both self-propelled and barges, can be used to serve multiple sites, including smaller, marginal fields otherwise not economical to produce. CNG vessels can also be redeployed at the end of a field's production life.

CNG vessel flexibility also integrates well into the operation of floating production, storage, and offloading systems (FPSOs), already used for oil recovery internationally and proposed for use in the Gulf of Mexico. One of the factors currently limiting use of FPSOs in the gulf is the difficulty of transporting associated gas ashore. CNG vessels used in conjunction with FPSOs would give operators an integrated and mobile solution, free of the costs and constraints associated with gas pipelines. CNG vessels could also be used with floating solutions for offshore natural gas development currently under development to shuttle produced gas to market.

Regulatory hurdles

Marine CNG will face regulatory hurdles in the US as federal agencies examine project proposals to issue required approvals. The lead federal agency responsible for regulating CNG vessels supporting production activities on the OCS is the Coast Guard.

A memorandum of agreement last year between the Coast Guard and MMS on regulation of floating OCS structures clarified the Coast Guard's regulatory role over vessels transporting commodities in oil and gas operations.[1] The MOA designated MMS as the lead agency for regulating all activities related to drilling and production and gave the Coast Guard authority over vessel operation, safety, and cargo transfer operations from floating production facilities to carrier or shuttle vessels.

In order to gain regulatory approval, one of the main issues that will need to be addressed is the safety of CNG vessels. To address this issue, the Coast Guard may require studies demonstrating the extent of hazards associated with CNG due to accidental or intentional hull breaches approve its use both in production operations and in transiting near shore and into crowded US ports. Other potential regulatory issues will likely include environmental effects associated with the vessels, such as air and water emissions, and the effect multiple transiting vessels could have on marine mammals.

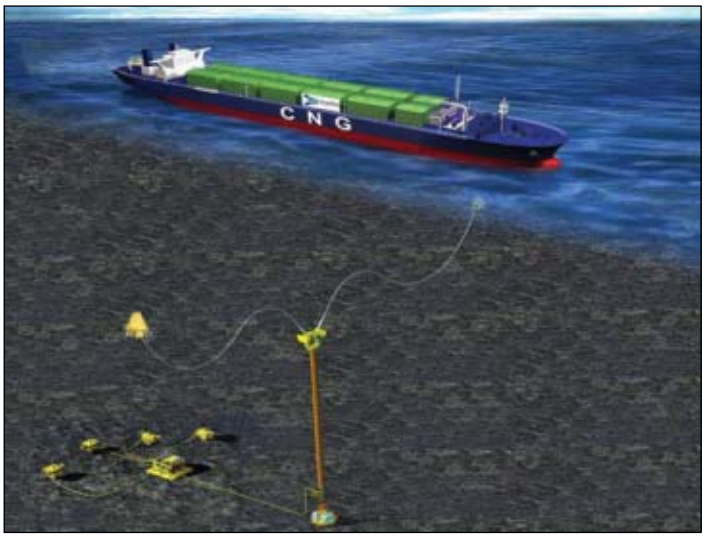
Political hurdles

The longstanding US prohibition on oil and gas leasing off the Atlantic and Pacific coasts has been lifted for the time being. These regions, however, have not traditionally been receptive to offshore production. While some states, such as Virginia, have signaled interest in pursuing offshore drilling, environmental concerns will be a leading factor

determining the extent of future drilling operations in new regions.

A key issue is the build-out of pipelines thought necessary to support production, which could cause environmental harm to marine habitats through dredging, directional drilling, and other construction techniques, will likely key such concerns.

Opposition from local communities and disputes among neighboring states also pose potential hindrances to offshore development. States opposed to offshore production may attempt to block projects by preventing development of pipeline infrastructure. An example of this recently occurred in California, when a state agency blocked an offshore LNG project by denying a land lease for a pipeline crossing state waters.[2] CNG vessels used in lieu of pipeline development could mollify or potentially circumvent local opposition.



This conceptual drawing shows EnerSea's gas production and storage shuttle and related subsea production systems (photo from EnerSea Transport LLC; Fig. 3).

Advanced Productions and Loading AS's submerged buoy is one of the types of equipment used to unload natural gas from ships at offshore ports (photo from Advanced Production and Loading AS; Fig. 4).

Moving forward

Interest in marine CNG is rising, but no projects have moved into the construction or production phases. Developers actively pursing projects include Overseas Shipholding Group, TransCanada, the Artumas Group, Sea NG, and Enersea.

Artumas Group has progressed towards commercializing what may be the world's first marine CNG project off the east coast of Africa. The project would transport gas produced from fields in Mnazi Bay 380 miles to Mombasa, Kenya. Artumas recently received approval from Tanzania to pursue the project, which could serve as a model both from a commercial and regulatory perspective on the international development of marine CNG.

Deepwater option

Depending on distance to market, between four and six CNG vessels may be required in rotation to transport gas from a site such as Mnazi Bay. To reduce transit distances and the number of ships needed, deepwater ports could be used to unload gas and transport it to market by subsea pipeline.

Current turret-buoy deepwater port designs, such as Excelerate Energy's Gulf Gateway Energy Bridge terminal offshore Louisiana, have so far only unloaded and transferred LNG (Fig. 2). The submerged buoy unloading mechanism could not only be used by CNG vessels to unload gas into a deepwater port, but also could potentially load gas into vessels at production sites (Figs. 3-4).

Uploading LNG into a terminal like Gulf Gateway, located 116 miles from shore, could sharply reduce transit distances.

While current deepwater ports have only been used to unload LNG and oil, the Deepwater Port Act—the federal law governing licensing of offshore terminals—applies to all forms of natural gas and would apply to the licensing of an offshore CNG terminal. A CNG deepwater port could also reduce safety and security concerns, as vessels would not transit near shore.

Other applications

Marine CNG vessels have potential applications beyond supporting oil and gas production. CNG vessels could also engage in regional shipping, such as within the Caribbean islands, delivering gas supplies over shorter shipping distances where it may be uneconomical to use LNG carriers. Marine CNG could also be used to transship regasified LNG from a central hub such as a regasification terminal, to multiple local markets either not served or underserved by pipelines. ✦

References

1. Memorandum of Agreement Between the Minerals Management Service-US Department of the Interior

and the US Coast Guard-US Department of Homeland Security, MMS/USCG MOA: OCS-04, Feb. 28, 2008.

2. "Lands Commission rejects LNG terminal," Ventura County Star, Apr. 10, 2007.

The authors

Steven Sparling (steven.sparling@sutherland.com) is a partner in the Washington office of Sutherland Asbill & Brennan LLP. Sparling chairs Sutherland's global LNG group and focuses his practice on LNG, offshore projects, oil spills, and emergency preparedness. Over the past 8 years, he has counseled LNG project developers, negotiated terminal access and supply agreements, and optimized shipping and terminal operations in North America and Europe. He holds a BA (1990) from the University of Pennsylvania and a JD (magna cum laude; 2000) from George Mason University School of Law.

Daron Threet (daron.threet@sutherland.com) is counsel in the Washington office of Sutherland, Asbill & Brennan LLP and a member of the firm's LNG group. Threet focuses his practice on offshore energy project development and government affairs. Before joining the firm, he served as counsel for the deepwater ports program at the US Department of Transportation, Maritime Administration (MARAD) and was secretary of the agency. He holds a BS (cum laude; 1997) from the University of Colorado at Boulder, College of Business and a JD from Notre Dame Law School (2000).

Nate Teti (nathaniel.teti@sutherland.com) is an attorney in the Washington office of Sutherland Asbill & Brennan LLP. Teti focuses his practice on government affairs and regulatory matters regarding natural gas, oil, LNG, and renewable energy. He holds a BA (1996) in policy studies from Dickinson College, an MPA (2000) from George Washington University, and a JD (magna cum laude; 2005) from the Catholic University of America, Columbus School of Law.

Microsoft Corp.,

Redmond, Wash., has announced relocation of the headquarters for its global oil and gas industry business to Dubai. Albrecht Ferling, managing director, worldwide oil and gas industries, previously directed the company's oil and gas unit from Vienna. He cited Dubai's central location in light of growing energy demand from China, India, and the Middle East and the shift of power from consumer to producer in the global energy equation among reasons for the move.

Microsoft, the worldwide leader in software and related services, has oil and gas initiatives in more than 70 countries.

McJunkin Red Man Corp.,

Tulsa, has opened new executive offices in Houston, at 2 Houston Center. Pres. and CEO Andrew Lane cited the company's intent for executive management to focus more time helping its major customers meet their North American pipe, valves, and fittings (PVF) supply chain challenges and assisting them in optimizing their global PVF supply chain needs. In addition, the Houston office expansion will allow MRC management to work more closely with the large concentration of its key suppliers located in Houston. Lane and several MRC senior executives will divide their time between Houston and the company's dual headquarters in Tulsa and Charleston, WVa. Houston is home to MRC's largest distribution center in North America, with a combined 200,000 sq ft of warehouse space, 40,000 sq ft of office space, and 80 acres of pipe yard.

Lane

McJunkin Red Man is the largest North American distributor of PVF and related products and services to the energy industry, based on sales.

Tri Drill Inc.,

Broussard, La., has earned certification from Det Norske Veritas (DNV) to perform nondestructive testing (NDT) on offshore drilling rigs and drilling components, a step that will help enhance Tri Drill's NDT heavy-lift inspection program. After a DNV audit in October 2008, Tri Drill's NDT Level II and III inspectors proved to be in compliance. The DNV certification program ensures suppliers are using appropriate procedures, have qualified and certified personnel, and are using written procedures for training, performance, application, control, verification, and reporting. DNV surveyors also consider whether suppliers are furnishing appropriate equipment and facilities. Tri Drill also is certified according to ASNT guidelines.

Tri Drill performs NDT inspections on drill pipe, tubing, bottom hole assembly tools, heavy-lift components, and handling equipment.

Aker Solutions,

Oslo, has announced the extension of its modification and maintenance support contract with BP PLC for the operator's platform facilities in the Norwegian North Sea. BP declared its option to extend the duration of the existing framework agreement with Aker Solutions by 2 years to Mar. 31, 2011. The value of the contract extension is expected to represent about 1-1.5 billion kroner (Nor.). The original framework agreement was signed with BP in 2005. This is the second option for extension being declared by BP and comprises engineering, procurement prefabrication, offshore installation, commissioning, and documentation. The agreement includes all of BP's current offshore facilities in the Norwegian sector, totaling 12 platforms.

Meanwhile, Aker has entered into an agreement with Total SA for additional work on the Frigg decommissioning project. The scope of work has increased beyond the fixed price contract Aker signed in 2004. The most critical phases of the project have now been completed, and the project is scheduled to be concluded by summer 2010. The agreement removes uncertainties regarding Aker Solutions' future results. The agreement will have a positive cash effect of about 1 billion kroner (Nor.), but will result in an accounting loss for fourth quarter 2008. For the same quarter, Aker Solutions also recognizes losses on the H-6e drilling rig project. The construction of the two H-6e drilling rigs, Aker Spitsbergen and Aker Barents, is in the completion phase. By the current schedule, Aker Drilling was to take delivery in February and second quarter 2009, respectively. The sea trials for Aker Spitsbergen were completed in January with good results. However, some damage to the drilling equipment's heave compensators was discovered, resulting in some components needing to be replaced.

Aker Solutions is a unit of Aker Solutions ASA, a leading global provider of engineering and construction services, technology products, and integrated solutions to the oil and gas, refining and chemicals, mining and metals, and power generation industries.

Saipem America Inc.,

Houston, has announced that the HOS Mystique, the company's new 250-ft, Class II DP ROV support vessel, has completed its first job and is currently mobilized in Fourchon, La., for immediate work. The HOS Mystique completed a pod change on a well located in the Gulf of Mexico Green Canyon area in 2,600 ft of water. Saipem America recently signed a 3-year charter agreement with Hornbeck Offshore Services for the newbuild HOS Mystique. The HOS Mystique is a US-flagged, Class II DP ROV support vessel with 4,354 sq ft of usable deck area and a permanent 70-ton, active heave compensated NOV knuckle-boom crane.

Saipem America is the US unit of Saipem SPA, which provides turnkey EPIC/EPC and drilling services to the worldwide onshore and offshore oil and gas industry.

Global Tubing,

Dayton, Tex., has begun producing coiled tubing at its manufacturing and service complex in Dayton. Global Tubing manufactures the widest selection of coil tubing in the industry. Sizes range from ¾-in. to 5-inch OD, with wall thicknesses ranging from 0.080 to 0.337 in. The company also provides a broad array of testing, repair, and other services to users of coiled tubing. The Dayton complex includes two mill operations buildings, with laboratory facilities to ensure product quality and promote continued innovation, and two service operations and training facilities.

PETROLEUM EVENTS CALENDAR 2009

Subsea Tieback Forum & Exhibition
March 3 – 5, 2009
San Antonio, Texas USA
Website: www.subseatiebackforum.com

Offshore Asia Conference & Exhibition
March 31 – April 2, 2009
Bangkok, Thailand
Website: www.offshoreasiaevent.com

Oil Sands and Heavy Oil Technologies Conference & Exhibition
July 14 – 16, 2009
Calgary, Alberta, Canada
Website: www.oilsandstechnologies.com

Oil & Gas Maintenance Technology North America Conference & Exhibition
September 1 – 3, 2009
New Orleans, Louisiana USA
Website: www.ogmtna.com

Unconventional Gas International Conference & Exhibition
September 29 – October 1, 2009
Ft. Worth, Texas USA
Website: www.unconventionalgas.net

Deepwater Operations Conference & Exhibition
November 10 – 12, 2009
Galveston, Texas USA
Website: www.deepwateroperations.com

Offshore Middle East Conference & Exhibition
October 27 – 29, 2009
Manama, Kingdom of Bahrain
Website: www.offshoremiddleeast.com

Deep Offshore Technology
International Conference and Exhibition
November 3 - 5, 2009
Monte Carlo, Monaco
Website: www.deepoffshoretechnology.com

Emerging Unconventional Resources Conference & Exhibition
December 8 – 10, 2009
Shreveport, Louisiana USA
Website: www.EmergingResourcesConference.com

Oil & Gas Maintenance Technology Conference & Exhibition
Co-located Pipeline Rehabilitation and Maintenance
January 19 – 21, 2010
Cairo, Egypt
Website: www.oilandgasmaintenance.com

Pipeline Rehabilitation & Maintenance
Co-located with Oil & Gas Maintenance Technology
January 19 – 21, 2010
Cairo, Egypt
Website: www.pipeline-rehab.com

Deep Offshore Technology
International Conference and Exhibition
February 2 – 4, 2010
Houston, Texas, USA
Website: www.dotinternational.net

Offshore West Africa Conference & Exhibition
March 23 – 25, 2010
Luanda, Angola
Website: www.offshorewestafrica.com

Rocky Mountain Unconventional Resources Conference & Exhibition
April 6 – 8, 2010
Denver, Colorado USA
Website: www.RMURconference.com

WORLD ENERGY CONGRESS
September 12 – 16, 2010
Montréal, Quebec, Canada
Website: www.wecmontreal2010exhibit.com

Global Tubing was formed in April 2007 to meet growing worldwide demand for coiled tubing products and related services. Global Tubing's majority shareholder is Calgary-based ARC Financial Corp., one of the world's largest energy-focused private equity firms.

CGGVeritas,

Paris, has announced that it was awarded two long-term seismic acquisition contracts by BP PLC to undertake multiple high-end marine 3D, wide-azimuth, and 4D seismic surveys. The first BP contract encompasses an exploration 3D survey in the Canadian Beaufort Sea. This project, with an option to extend for a second season, is expected to commence in summer 2009. The second long-term contract comprises multiple wide-azimuth and 4D reservoir management surveys in the Gulf of Mexico. The gulf program is expected to commence early in 2009, with part of the program being acquired in 2010, and includes options for further extensions. The total value of these new BP contracts, not including optional extensions, is expected to be about $130 million. CGGVeritas has also received a letter of cancellation from Petroleos de Venezuela SA relating to a previously announced, 6-month land 3D seismic survey in Venezuela.

CGGVeritas is a leading international pure-play geophysical company delivering a wide range of technologies, services, and equipment through Sercel, to its broad base of customers mainly throughout the global oil and gas industry.

StealthGas Inc.,

Athens, has announced delivery of the Gas Shuriken, a 2008-built, 5,000-cu m, fully pressurized LPG carrier. The vessel was immediately deployed to an international gas trader under a 2-year time charter that expires in October 2010. The company also recently took delivery of the Gas Natalie, a 1997-built, 3,213 cu m, fully pressurized LPG carrier. Upon her delivery, she continued to be deployed with a major international gas owner/operator, under an existing bareboat charter that expires in September 2011. In addition, StealthGas canceled sale of the Gas Amazon, a 1992-built, 6,526 cu m, fully pressurized LPG carrier, due to buyer nonperformance. The company intends to pursue legal remedies in seeking compensation from the buyer.

StealthGas is a ship-owning company serving primarily the LPG sector. It has a fleet of 39 LPG carriers with a total capacity of 173,499 cu m and two medium-range product tankers.

Subsea 7 Inc.,

Aberdeen, has announced award of a contract by Venture Production PLC to manage the integrity of its subsea assets in the North Sea. Subsea 7 will provide Venture with a team of specialist personnel to support the integrity management contract. The work scope includes data management, system review and development, engineering analysis, and specialist services such as field life extension and feature assessment (the technical assessment of inspection results). The integrity management services contract sits alongside existing contracts that Subsea 7 has with Venture for inspection, repair and maintenance, and engineering, procurement, installation, and commissioning projects. This is the first integrity management services contract that Subsea 7 has won.

Meanwhile, Subsea 7 has been recognized for excellence throughout its business and operations when it was named "Subsea Company of the Year" at the 2009 Subsea UK Business Awards. Finalists in the "Subsea Company of the Year" category were judged on a number of factors, including growth in the last year, national and international profile and reputation, business and technical excellence, commitment to staff training and development, and commitment to safety and the environment.

Subsea UK is the industry body and focal point for the entire UK subsea industry and aims to increase business opportunities at home and abroad for the sector. Its annual business awards ceremony coincides with its flagship annual Aberdeen exhibition and conference, Subsea 09.

Subsea 7 is one of the world's leading subsea engineering and construction companies.

OMNI Energy Services Corp.,

Carencro, La., has announced the award of a significant seismic drilling contract in Louisiana from a leading seismic data acquisition company. The project, expected to commence Mar. 1, 2009, encompasses more than 5,000 holes, 85% of which are in the transition zone in Louisiana, and the balance being highland activity. The contract will generate about $2.5 million in revenue in first half 2009.

OMNI offers a broad range of integrated services to geophysical companies engaged in the acquisition of onshore seismic data and to oil and gas companies operating in the Gulf of Mexico as well as the major oil and gas producing regions of the continental US. OMNI provides seismic drilling services (including drilling, survey, and permitting services), environmental services, equipment leasing, fluid and transportation services, and other services.

Baker Hughes Inc.,

Houston, has opened Phase II of its new Center for Technology Innovation (CTI) in northwest Houston. CTI consists of 209,000 sq ft of research and engineering space. Phase I, comprising research laboratories, extreme high-pressure/high-temperature (xHPHT) test facilities, and advanced machining and rapid prototyping shops, was inaugurated in April 2008. Phase II consists of additional office buildings and research facilities. About 600 scientists, application engineers, and laboratory technicians are conducting research, engineering, development, and testing at the $42 million complex. CTI is the only center of its kind in the oil and gas industry, capable of testing full-size prototypes of the next generation of completion and production equipment in a test environment with gas pressure up to 40,000 psi and temperature up to 700 °F. It is designed to enable Baker Hughes research and engineering teams to achieve breakthroughs in technologies focused on deepwater wells, xHPHT applications, production optimization, and large-diameter completions.

Baker Hughes provides reservoir consulting, drilling, formation evaluation, completion, and production products and services to the worldwide oil and gas industry.

Petrobras gives torpedo pile rights to Louisiana firm

Petroleo Brasileiro SA, Rio de Janeiro, has granted torpedo pile technology rights to InterMoor Inc., Amelia, La., which becomes an exclusive licensee of Petrobras's torpedo pile technology in the US.

Torpedo piles typically range in sizes of 24-98 tonnes. The largest one can provide anchor-holding capacity of as much as 1,000 tonnes. In the past 8 years, Petrobras has successfully installed more than 1,000 torpedo piles—essentially gravity-embedded cylindrically shaped projectiles—to anchor deepwater flowlines and facilities off Brazil.

InterMoor said it looks forward to extending the technology to the Gulf of Mexico and other US waters.

Source: **InterMoor Inc.,** Box 1599, Amelia, LA 70340-1599.

New quarter turn valve actuator

The new Limitorque QX valve actuator has been added to a family of electronic actuators. The QX is a quarter-turn, smart electronic valve actuator designed to enhance safety and reduce downtime through improved diagnostics, built-in self-test features, and LimiGard fault protection capabilities. The QX complements the nonintrusive multiturn Limitorque MX actuator by including a patent-pending absolute encoder, which tracks position without the use of batteries.

The new actuator uses brushless DC motors, which eliminate sparks, reduces mechanical and electrical noise, and dissipates heat better than DC motors with brushes, the firm says. The company adds that its brushless-actuator design lasts longer than conventional motors and allows for more accurate positioning.

Units are available for optional multiturn functionality. Suited for extreme and harsh environments, the actuators are powder-coated in a polyester resin. The actuators are double-sealed, containing any leakage within a separate terminal compartment, and include solid-state components.

The QX features an easy-to-read LCD screen control panel, which can be rotated 180°. Available in 10 languages including English, Spanish, French, Italian, German, Portuguese, Japanese (Katakana), Mandarin, Russian, and Malay, the panel supports diagnostic graphs for clear data analysis and collection.

The company introduced absolute encoder technology for smart actuators in the Limitorque MX. An absolute encoder helps simplify valve automation through configuration and setup, normal operations, diagnostics, and troubleshooting.

The QX encoder employs system-on-chip technology, which uses a pair of contactless magnets that excite Hall-effect devices and provide redundant, 12-bit resolution over 360°.

Source: **Flowserve Corp.,** 5215 N. O'Connor Blvd., Suite 2300, Irving, TX 75039.

Imports of crude and products

	Districts 1–4 2-6 2009	Districts 1–4 1-30 2009	District 5 2-6 2009	District 5 1–30 2009	Total US 2-6 2009	Total US 1–30 2009	Total US *2–8 2008
	1,000 b/d						
Total motor gasoline	1,174	765	144	64	1,318	829	841
Mo. gas. blending comp.	866	579	144	6	1,010	585	453
Distillate	146	171	0	6	146	177	282
Residual	460	524	0	14	460	538	200
Jet fuel–kerosine	111	12	0	4	111	16	157
Propane–propylene	254	205	12	50	266	255	139
Other	(100)	516	(24)	169	(124)	685	1,291
Total products	**2,911**	**2,772**	**276**	**313**	**3,187**	**3,085**	**3,363**
Total crude	**8,682**	**8,656**	**970**	**1,381**	**9,652**	**10,037**	**9,737**
Total imports	**11,593**	**11,428**	**1,246**	**1,694**	**12,839**	**13,122**	**13,100**

*Revised.
Source: US Energy Information Administration
Data available in OGJ Online Research Center.

Purvin & Gertz LNG netbacks—Feb. 13, 2009

Receiving terminal	Liquefaction plant: Algeria	Malaysia	Nigeria	Austr. NW Shelf	Qatar	Trinidad
	$/MMbtu					
Barcelona	11.05	9.07	10.28	8.97	9.61	10.21
Everett	4.61	2.84	4.31	2.95	3.28	4.84
Isle of Grain	7.73	5.35	7.18	5.10	6.31	7.20
Lake Charles	2.54	0.95	2.36	1.10	1.25	3.03
Sodegaura	5.74	7.67	6.00	7.42	6.81	5.22
Zeebrugge	8.27	5.64	7.69	5.44	6.83	7.75

Definitions, see OGJ Apr. 9, 2007, p. 57.
Source: Purvin & Gertz Inc.
Data available in OGJ Online Research Center.

Crude and product stocks

District	Crude oil	Motor gasoline: Total	Motor gasoline: Blending comp.[1]	Jet fuel, kerosine	Fuel oils: Distillate	Fuel oils: Residual	Propane–propylene
	1,000 bbl						
PADD 1	14,484	59,494	38,164	10,652	50,508	12,595	2,303
PADD 2	84,730	53,863	20,144	7,639	35,115	1,051	13,197
PADD 3	181,461	69,995	39,757	12,740	39,763	15,709	26,433
PADD 4	14,419	6,612	2,191	485	3,193	269	[1]1,320
PADD 5	55,674	27,595	22,851	9,484	12,986	5,426	—
Feb. 6, 2009	**350,768**	**217,559**	**123,107**	**41,000**	**141,565**	**35,050**	**43,253**
Jan. 30, 2009	**346,051**	**220,221**	**123,354**	**39,478**	**142,591**	**34,569**	**44,574**
Feb. 8, 2008[2]	**301,070**	**229,236**	**113,555**	**41,093**	**126,973**	**36,893**	**36,813**

[1]Includes PADD 5. [2]Revised.
Source: US Energy Information Administration
Data available in OGJ Online Research Center.

Refinery report—Feb. 6, 2009

District	Refinery operations: Gross inputs	Refinery operations: Crude oil inputs	Refinery output: Total motor gasoline	Refinery output: Jet fuel, kerosine	Refinery output: Fuel oils: Distillate	Refinery output: Fuel oils: Residual	Refinery output: Propane–propylene
	1,000 b/d						
PADD 1	1,307	1,323	2,229	82	410	98	64
PADD 2	3,142	3,110	2,141	198	1,003	44	193
PADD 3	6,802	6,763	2,425	651	2,066	244	645
PADD 4	541	538	313	28	171	10	[1]132
PADD 5	2,578	2,393	1,384	408	492	117	—
Feb. 6, 2009	**14,370**	**14,127**	**8,492**	**1,367**	**4,142**	**513**	**1,034**
Jan.30, 2009	**14,711**	**14,341**	**8,679**	**1,463**	**4,169**	**625**	**1,061**
Feb. 8, 2008[2]	**14,834**	**14,561**	**8,909**	**1,441**	**4,091**	**649**	**1,106**
	17,621 Operable capacity		**81.6% utilization rate**				

[1]Includes PADD 5. [2]Revised.
Source: US Energy Information Administration
Data available in OGJ Online Research Center.

Additional analysis of market trends is available through **OGJ Online**, *Oil & Gas Journal's* electronic information source, at http://www.ogjonline.com.

OGJ crack spread

	*2–13–09	*2–15–08	Change $/bbl	Change, %
SPOT PRICES				
Product value	54.62	103.55	–48.93	–47.2
Brent crude	44.99	96.50	–51.51	–53.4
Crack spread	9.63	7.05	2.59	36.7
FUTURES MARKET PRICES				
One month				
Product value	53.52	105.20	–51.68	–49.1
Light sweet crude	36.91	94.12	–57.21	–60.8
Crack spread	16.62	11.08	5.53	49.9
Six month				
Product value	57.80	107.43	–49.63	–46.2
Light sweet crude	50.69	93.23	–42.54	–45.6
Crack spread	7.11	14.21	–7.10	–50.0

*Average for week ending.
Source: Oil & Gas Journal
Data available in OGJ Online Research Center.

OGJ GASOLINE PRICES

	Price ex tax 2-11-09	Pump price* 2-11-09	Pump price 2-13-08
	¢/gal		
(Approx. prices for self-service unleaded gasoline)			
Atlanta	137.5	184.0	308.0
Baltimore	140.1	182.0	294.5
Boston	138.7	180.6	304.2
Buffalo	125.3	186.2	328.6
Miami	132.0	183.6	322.8
Newark	142.6	175.2	289.6
New York	129.7	190.6	304.2
Norfolk	136.8	175.2	287.0
Philadelphia	138.9	189.6	309.9
Pittsburgh	148.5	199.2	306.1
Wash., DC	161.2	199.6	306.0
PAD I avg	139.2	186.0	305.5
Chicago	150.8	215.2	338.2
Cleveland	152.2	198.6	297.2
Des Moines	150.0	190.4	295.1
Detroit	138.1	197.5	302.9
Indianapolis	137.1	196.5	300.0
Kansas City	148.4	184.4	287.1
Louisville	152.2	193.1	301.9
Memphis	142.7	182.5	287.4
Milwaukee	143.2	194.5	298.1
Minn.-St. Paul	144.4	188.4	294.1
Oklahoma City	137.7	173.1	283.7
Omaha	138.9	184.2	299.5
St. Louis	145.6	181.6	276.8
Tulsa	140.9	176.3	283.3
Wichita	137.1	180.5	281.2
PAD II avg	144.0	189.1	295.1
Albuquerque	146.7	183.1	290.2
Birmingham	141.8	181.1	295.7
Dallas-Fort Worth	139.8	178.2	287.9
Houston	135.6	174.0	291.7
Little Rock	144.9	185.1	287.8
New Orleans	142.7	181.1	292.2
San Antonio	140.7	179.1	287.0
PAD III avg	141.7	180.2	290.4
Cheyenne	127.3	159.7	276.2
Denver	136.3	176.7	288.2
Salt Lake City	131.8	174.7	297.7
PAD IV avg	131.8	170.4	287.4
Los Angeles	138.9	206.0	307.8
Phoenix	149.4	186.8	286.1
Portland	168.4	211.8	298.4
San Diego	150.7	217.8	314.7
San Francisco	155.7	222.8	340.3
Seattle	154.6	210.5	309.3
PAD V avg	153.0	209.3	309.4
Week's avg.	**142.8**	**188.4**	**298.5**
Jan. avg.	**131.5**	**177.1**	**304.5**
Dec. avg.	**125.5**	**171.1**	**300.6**
2009 to date	**135.0**	**180.6**	—
2008 to date	**259.3**	**302.8**	—

*Includes state and federal motor fuel taxes and state sales tax. Local governments may impose additional taxes.
Source: Oil & Gas Journal.
Data available in OGJ Online Research Center.

REFINED PRODUCT PRICES

	2-6-09 ¢/gal		2-6-09 ¢/gal
Spot market product prices			
Motor gasoline (Conventional-regular)		Heating oil No. 2	
New York Harbor	128.73	New York Harbor	136.20
Gulf Coast	126.35	Gulf Coast	129.95
Los Angeles	169.10	Gas oil	
Amsterdam-Rotterdam-Antwerp (ARA)	116.85	ARA	135.21
Singapore	142.24	Singapore	117.74
Motor gasoline (Reformulated-regular)		Residual fuel oil	
New York Harbor	124.60	New York Harbor	92.93
Gulf Coast	124.60	Gulf Coast	107.45
Los Angeles	175.10	Los Angeles	113.07
		ARA	86.61
		Singapore	100.80

Source: DOE Weekly Petroleum Status Report.
Data available in OGJ Online Research Center.

BAKER HUGHES RIG COUNT

	2-13-09	2-15-08
Alabama	2	3
Alaska	8	9
Arkansas	51	40
California	22	32
Land	21	31
Offshore	1	1
Colorado	69	118
Florida	0	0
Illinois	1	0
Indiana	3	1
Kansas	15	10
Kentucky	11	8
Louisiana	160	144
N. Land	83	46
S. Inland waters	6	18
S. Land	21	31
Offshore	50	49
Maryland	0	0
Michigan	0	0
Mississippi	12	12
Montana	3	11
Nebraska	0	0
New Mexico	50	67
New York	3	6
North Dakota	64	54
Ohio	8	12
Oklahoma	134	195
Pennsylvania	24	20
South Dakota	0	1
Texas	581	875
Offshore	6	5
Inland waters	0	3
Dist. 1	8	23
Dist. 2	30	33
Dist. 3	44	65
Dist. 4	45	94
Dist. 5	129	180
Dist. 6	97	120
Dist. 7B	15	32
Dist. 7C	40	48
Dist. 8	69	132
Dist. 8A	18	19
Dist. 9	30	43
Dist. 10	50	78
Utah	22	42
West Virginia	27	28
Wyoming	53	73
Others—NV-6; TN-4; VA-4; WA-2	16	12
Total US	**1,339**	**1,773**
Total Canada	**421**	**632**
Grand total	**1,760**	**2,405**
US Oil rigs	273	339
US Gas rigs	1,054	1,428
Total US offshore	58	55
Total US cum. avg. YTD	**1,623**	**1,755**

Rotary rigs from spudding in to total depth.
Definitions, see OGJ Sept. 18, 2006, p. 42.

Source: Baker Hughes Inc.
Data available in OGJ Online Research Center.

SMITH RIG COUNT

Proposed depth, ft	Rig count	2-13-09 Percent footage*	Rig count	2-15-08 Percent footage*
0-2,500	49	—	73	8.2
2,501-5,000	69	50.7	104	51.9
5,001-7,500	184	24.4	226	20.7
7,501-10,000	288	3.8	445	4.0
10,001-12,500	272	2.2	439	3.6
12,501-15,000	258	0.3	308	0.3
15,001-17,500	148	—	91	—
17,501-20,000	69	—	75	—
20,001-over	41	—	36	—
Total	**1,378**	**7.1**	**1,797**	**7.9**
INLAND	16		35	
LAND	1,311		1,709	
OFFSHORE	51		53	

*Rigs employed under footage contracts.
Definitions, see OGJ Sept. 18, 2006, p. 42.

Source: Smith International Inc.
Data available in OGJ Online Research Center.

OGJ PRODUCTION REPORT

	[1]2-13-09	[2]2-15-08
	1,000 b/d	
(Crude oil and lease condensate)		
Alabama	21	22
Alaska	733	708
California	660	658
Colorado	61	66
Florida	6	6
Illinois	29	25
Kansas	110	107
Louisiana	1,275	1,268
Michigan	16	16
Mississippi	63	58
Montana	93	86
New Mexico	166	161
North Dakota	186	137
Oklahoma	180	171
Texas	1,365	1,328
Utah	60	55
Wyoming	148	145
All others	70	70
Total	**5,242**	**5,087**

[1]OGJ estimate. [2]Revised.
Source: Oil & Gas Journal.
Data available in OGJ Online Research Center.

US CRUDE PRICES

	2-13-09 $/bbl*
Alaska-North Slope 27°	33.47
South Louisiana Sweet	37.25
California-Kern River 13°	26.80
Lost Hills 30°	35.25
Wyoming Sweet	23.51
East Texas Sweet	33.50
West Texas Sour 34°	26.25
West Texas Intermediate	34.00
Oklahoma Sweet	34.00
Texas Upper Gulf Coast	28.00
Michigan Sour	26.00
Kansas Common	32.75
North Dakota Sweet	25.50

*Current major refiner's posted prices except North Slope lags 2 months. 40° gravity crude unless differing gravity is shown.
Source: Oil & Gas Journal.
Data available in OGJ Online Research Center.

WORLD CRUDE PRICES

$/bbl[1]	2-6-09
United Kingdom-Brent 38°	43.63
Russia-Urals 32°	42.80
Saudi Light 34°	39.49
Dubai Fateh 32°	43.59
Algeria Saharan 44°	45.25
Nigeria-Bonny Light 37°	47.72
Indonesia-Minas 34°	45.02
Venezuela-Tia Juana Light 31°	40.96
Mexico-Isthmus 33°	40.85
OPEC basket	43.40
Total OPEC[2]	41.89
Total non-OPEC[2]	41.62
Total world[2]	41.77
US imports[3]	39.42

[1]Estimated contract prices. [2]Average price (FOB) weighted by estimated export volume. [3]Average price (FOB) weighted by estimated import volume.
Source: DOE Weekly Petroleum Status Report.
Data available in OGJ Online Research Center.

US NATURAL GAS STORAGE[1]

	2-6-09	1-30-09	2-6-08	Change, %
	bcf			
Producing region	721	758	651	**10.8**
Consuming region east	972	1,087	1,091	**–10.9**
Consuming region west	327	334	235	**39.1**
Total US	**2,020**	**2,179**	**1,977**	**2.2**
	Nov. 08	**Nov. 07**	**Change, %**	
Total US[2]	**3,346**	**3,442**	**–2.8**	

[1]Working gas. [2]At end of period.
Source: Energy Information Administration
Data available in OGJ Online Research Center.

Statistics

World oil balance

	2008 3rd qtr.	2008 2nd qtr.	2008 1st qtr.	2007 4th qtr.	2007 3rd qtr.	2007 2nd qtr.
	Million b/d					
DEMAND						
OECD						
US & Territories	19.13	19.96	20.15	20.90	21.06	20.95
Canada	2.36	2.25	2.37	2.39	2.40	2.29
Mexico	2.11	2.16	2.10	2.16	2.06	2.14
Japan	4.30	4.59	5.41	5.25	4.70	4.64
South Korea	2.07	2.09	2.33	2.31	2.06	2.12
France	1.92	1.92	1.98	2.02	1.94	1.86
Italy	1.65	1.61	1.62	1.75	1.65	1.69
United Kingdom	1.64	1.72	1.72	1.73	1.73	1.73
Germany	2.72	2.41	2.47	2.54	2.55	2.37
Other OECD Europe	7.45	7.24	7.41	7.62	7.55	7.27
Australia & New Zealand	1.12	1.14	1.13	1.15	1.12	1.10
Total OECD	**46.47**	**47.09**	**48.69**	**49.82**	**48.82**	**48.16**
	25.50					
NON–OECD						
China	8.05	7.99	7.74	7.61	7.54	7.75
FSU	4.31	4.30	4.34	4.36	4.25	4.00
Non–OECD Europe	0.76	0.79	0.83	0.78	0.73	0.78
Other Asia	9.14	9.26	9.22	9.25	8.93	9.19
Other non–OECD	16.01	15.82	15.60	15.20	15.36	15.07
Total non–OECD	**38.27**	**38.16**	**37.73**	**37.20**	**36.81**	**36.79**
TOTAL DEMAND	**84.74**	**85.25**	**86.42**	**87.02**	**85.63**	**84.95**
SUPPLY						
OECD						
US	8.18	8.75	8.64	8.58	8.36	8.50
Canada	3.40	3.23	3.38	3.40	3.48	3.37
Mexico	3.15	3.20	3.31	3.35	3.47	3.61
North Sea	4.07	4.33	4.46	4.57	4.28	4.49
Other OECD	1.58	1.57	1.53	1.57	1.57	1.55
Total OECD	**20.38**	**21.08**	**21.32**	**21.47**	**21.16**	**21.52**
NON–OECD						
FSU	12.42	12.60	12.59	12.65	12.55	12.59
China	3.97	4.00	3.94	3.87	3.88	3.97
Other non–OECD	11.62	11.07	10.83	11.13	11.21	11.04
Total non–OECD, non–OPEC	**28.01**	**27.67**	**27.36**	**27.65**	**27.64**	**27.60**
OPEC*	**37.32**	**36.87**	**36.70**	**36.19**	**35.45**	**35.08**
TOTAL SUPPLY	**85.71**	**85.62**	**85.38**	**85.31**	**84.25**	**84.20**
Stock change	**0.97**	**0.37**	**–1.04**	**–1.71**	**–1.38**	**–0.75**

*Includes Angola.
Source: DOE International Petroleum Monthly
Data available in OGJ Online Research Center.

OECD total net oil imports

	Oct. 2008	Sept. 2008	Aug. 2008	Oct. 2007	Chg. vs. previous year Volume	Chg. vs. previous year %
	Million b/d					
Canada	–946	–1,264	–1,438	–1,238	292	–23.6
US	11,548	10,174	10,992	11,655	–107	–0.9
Mexico	–1,242	–805	–1,183	–1,217	–25	2.1
France	1,911	1,733	1,701	1,787	124	6.9
Germany	2,509	2,563	2,437	2,287	222	9.7
Italy	1,412	1,471	1,214	1,561	–149	–9.5
Netherlands	869	939	931	798	71	8.9
Spain	1,437	1,530	1,483	1,539	–102	–6.6
Other importers	4,104	4,077	4,027	4,229	–125	–3.0
Norway	–1,724	–1,567	–2,102	–2,172	448	–20.6
United Kingdom	99	84	389	78	21	26.9
Total OECD Europe	**10,617**	**10,830**	**10,080**	**10,107**	**510**	**5.0**
Japan	4,465	4,533	4,868	4,821	–356	–7.4
South Korea	1,819	1,854	1,976	2,194	–375	–17.1
Other OECD	990	776	851	895	95	10.6
Total OECD	**27,251**	**26,098**	**26,146**	**27,217**	**34**	**0.1**

Source: DOE International Petroleum Monthly
Data available in OGJ Online Research Center.

OECD* total gross imports from OPEC

	Oct. 2008	Sept. 2008	Aug. 2008	Oct. 2007	Chg. vs. previous year Volume	Chg. vs. previous year %
	Million b/d					
Canada	665	484	261	394	271	68.8
US	5,888	5,128	6,390	5,849	39	0.7
Mexico	27	28	21	31	–4	–12.9
France	1,046	1,102	891	766	280	36.6
Germany	477	501	442	420	57	13.6
Italy	1,139	1,329	1,235	1,255	–116	–9.2
Netherlands	663	685	664	537	126	23.5
Spain	817	847	777	730	87	11.9
Other importers	1,232	1,585	1,411	1,377	–145	–10.5
United Kingdom	341	275	379	314	27	8.6
Total OECD Europe	**5,715**	**6,324**	**5,799**	**5,399**	**316**	**5.9**
Japan	4,035	4,138	4,209	4,326	–291	–6.7
South Korea	2,350	2,365	2,352	2,549	–199	–7.8
Other OECD	589	586	628	803	–214	–26.7
Total OECD	**19,269**	**19,053**	**19,660**	**19,351**	**–82**	**–0.4**

*Organization for Economic Cooperation and Development.
Source: DOE International Petroleum Monthly
Data available in OGJ Online Research Center.

US petroleum imports from source country

	Oct. 2008	Sept. 2008	Average YTD 2008	Average YTD 2007	Chg. vs. previous year Volume	Chg. vs. previous year %
	1,000 b/d					
Algeria	555	657	541	699	–158	–22.6
Angola	539	416	514	522	–8	–1.5
Kuwait	240	115	201	186	15	8.1
Nigeria	979	591	1,011	1,103	–92	–8.3
Saudi Arabia	1,487	1,431	1,540	1,451	89	6.1
Venezuela	1,162	1,051	1,189	1,356	–167	–12.3
Other OPEC	926	867	1,006	651	355	54.5
Total OPEC	**5,888**	**5,128**	**6,002**	**5,968**	**34**	**0.6**
Canada	2,587	2,367	2,437	2,468	–31	–1.3
Mexico	1,433	1,003	1,296	1,549	–253	–16.3
Norway	70	74	103	150	–47	–31.3
United Kingdom	386	265	240	288	–48	–16.7
Virgin Islands	267	345	322	335	–13	–3.9
Other non–OPEC	2,586	2,330	2,501	2,799	–298	–10.6
Total non–OPEC	**7,329**	**6,384**	**6,899**	**7,589**	**–690**	**–9.1**
TOTAL IMPORTS	**13,217**	**11,512**	**12,901**	**13,557**	**–656**	**–4.8**

Source: DOE Monthly Energy Review
Data available in OGJ Online Research Center.

Oil stocks in OECD countries*

	Oct. 2008	Sept. 2008	Aug. 2008	Oct. 2007	Chg. vs. previous year Volume	Chg. vs. previous year %
	Million bbl					
France	179	177	176	165	14	8.5
Germany	269	272	274	273	–4	–1.5
Italy	129	130	131	132	–3	–2.3
United Kingdom	93	95	96	96	–3	–3.1
Other OECD Europe	693	691	702	662	31	4.7
Total OECD Europe	**1,363**	**1,365**	**1,379**	**1,328**	**35**	**2.6**
Canada	194	194	198	194	0	0.0
US	1,712	1,705	1,710	1,708	4	0.2
Japan	138	141	150	159	–21	–13.2
South Korea	118	116	105	112	6	5.4
Other OECD	115	104	104	108	7	6.5
Total OECD	**4,173**	**4,167**	**4,185**	**4,130**	**43**	**1.0**

*End of period.
Source: DOE International Petroleum Monthly Report
Data available in OGJ Online Research Center.

Classified Advertising

Your marketplace for the oil and gas industry

DEADLINE for CLASSIFIED ADVERTISING is 10 A.M. Tuesday preceding date of publication. Address advertising inquiries to CLASSIFIED SALES, 1-800-331-4463 ext. 6301, 918-832-9301, fax 918-831-9776, email: glendah@pennwell.com.

- *DISPLAY CLASSIFIED: $390 per column inch, one issue. 10% discount three or more CONSECUTIVE issues. No extra charge for blind box in care. Subject to agency commission. No 2% cash discount.*
- *UNDISPLAYED CLASSIFIED: $4.00 per word per issue. 10% discount for three or more CONSECUTIVE issues. $80.00 minimum charge per insertion. Charge for blind box service is $56.00 No agency commission, no 2% cash discount. Centered/Bold heading, $9.00 extra.*
- *COMPANY LOGO: Available with undisplayed ad for $83.00. Logo will be centered above copy with a maximum height of 3/8 inch.*
- *NO SPECIAL POSITION AVAILABLE IN CLASSIFIED SECTION.*
- *PAYMENT MUST ACCOMPANY ORDER FOR CLASSIFIED AD.*

EMPLOYMENT

LEAD RESEARCH ENGINEER

Chevron seeks Lead Research Eng in Richmond, CA. PhD in Chemical, Mechanical or Environmental Eng. Reqd skills: separations science incl. oil/solid separations such as membranes, absorption, physical separations; thermodynamics, fluid transport phenomena, reaction kinetics, process design & mass transfer; process eng. & hydrocarbon processing; conduct & evaluate laboratory & bench-scale research; process evaluation & synthesis of conceptual ideas & technologies. Mail resume: Chevron, 1400 Smith St., Houston, TX 77002 attn Y. Vasquez / E. Lopez. Ref job 109.

RESEARCH ENGINEER

Chevron seeks Research Eng in Richmond, CA. PhD in Chemical Eng. + 1 yr exp in job offered or as Research Eng/Post-Doc Researcher. Reqd skills: Heterogeneous catalysis incl. catalyst preparation, characterization & testing; kinetics, reaction mechanism & structure-reactivity relationship for different chemical reactions; characterization techniques such as FT-IR, Gas Chromatography, Mass Spectrometry, Nitrogen Physisorption, Hydrogen Chemisorption, Differential Scanning Calorimetry, UV-visible spectroscopy & X-ray absorption; bench-scale unit operation & data evaluation; novel catalysts in the area of hydroprocessing of different hydrocarbon feedstock. Mail resume: Chevron, 1400 Smith St., Houston, TX 77002 attn Y. Vasquez / E. Lopez. Ref job 98

E & P Company is currently looking for a Geologist to work out of our Tidioute office in Northwest Pennsylvania. Candidates who wish to pursue this opportunity please forward your resume and other pertinent information to: hbralley@johndoilandgas.com or you may contact Greg @ 440-205-3169

EQUIPMENT FOR SALE

FCC Unit -- 10,500 bpd

Alkylation Unit -- 6,500 bpd

Both Units Completed 1996

Excellent Condition

Doug Wood

Plant Process Equipment

281-333-7700

dwood@plant-process.com

Get Results!
OGJ Classifieds

EQUIPMENT FOR SALE

FOR SALE / RENT

5.2 MW MOBILE GEN SETS
CALL: 800-704-2002

SOLAR TAURUS 60

- GAS - LOW NOx (OIL)
- 60 Hz - 13.8KV or 50 Hz - 11KV
- LOW HOUR - SOLAR SERVICED

DIESELS • TURBINES • BOILERS

24/7 EMERGENCY SERVICE
IMMEDIATE DELIVERY

www.wabashpower.com | info@wabashpower.com
Phone: 847-541-5600 Fax: 847-541-1279

wabash POWER EQUIPMENT CO.
444 Carpenter Avenue, Wheeling, IL 60090

NATCO
Producing Solutions

Water, Oil and Gas Treatment/Conditioning Equipment

For Sale, Lease, Contract Service

Separators, Hydrocyclones, Float Cells, Filtration, Electrostatic Oil Treaters, Amine Units, Glycol Units, JT-Plants, Refrigeration Units, LACT Units

For Information Call 713.849.7520

www.NATCOGroup.com

SURPLUS GAS PROCESSING/REFINING EQUIPMENT

NGL/LPG PLANTS:	10 - 600 MMCFD
AMINE PLANTS:	60 - 5000 GPM
SULFUR PLANTS:	10 - 1200 TPD
FRACTIONATION:	1000 – 15,000 BPD
HELIUM RECOVERY:	75 & 80 MMCFD
NITROGEN REJECTION:	25 – 80 MMCFD

ALSO OTHER REFINING UNITS

We offer engineered surplus equipment solutions.

Bexar Energy Holdings, Inc.
Phone 210 342-7106
Fax 210 223-0018
www.bexarenergy.com
Email: info@bexarenergy.com

CONSULTANTS

Brazil: EXPETRO can be your guide into this new investment frontier.

Effective strategic analysis, quality technical services, compelling economic/regulatory advice, and realistic approach regarding Brazilian business environment-120 specialists upstream, downstream gas and biofuels.
Email: contato@expetro.com.br
Web: www.expetro.com.br-Rio de Janeiro, Brazil

BUSINESS OPPORTUNITY

Want to purchase minerals and other oil/gas interests. Send details to: P.O. Box 13557, Denver, CO 80201.

East Texas Salt Dome property (177 acres atop salt) for sale with complete infrastructure including reservoirs, office building, surface tanks, off-site disposal well. Owner will hold note with down payment of 20%. Contact Ray or Nancy Funderburk, Freestone Underground Storage, Inc. (901)326-5611.

INVESTOR RELATIONS

CAPITAL RAISER - INVESTOR RELATIONS
Established book, seeking rework, shallow well and enhanced recovery opportunities that appeal to industry players. No promotes! 954-229-4754

Hiring? Selling Equipment?
Need Equipment?
New Business Opportunity?

Contact: Glenda Harp
+1-918-832-9301 or
1-800-331-4463, ext. 6301
Fax: +1-918-831-9776

Advertising Sales / Advertisers Index

Houston
Regional Sales Managers. Marlene Breedlove; Tel: (713) 963-6293, Fax: (713) 963-6228, E-mail: marleneb@pennwell.com. Charlene Burman; Tel: (713) 963-6274, Fax: (713) 963-6228; E-mail: cburman@pennwell.com. Mike Moss; Tel: (713) 963-6221, Fax: (713) 963-6228: E-mail: mikem@pennwell.com. PennWell - Houston, 1455 West Loop South, Suite 400, Houston, TX 77027.

Southwest / South Texas/Western States/ Gulf States/Mid-Atlantic
Marlene Breedlove, 1455 West Loop South, Suite 400, Houston, TX 77027; P.O. Box 1941 Houston, TX 77251; Tel: (713) 963-6293, Fax: (713) 963-6228; E-mail: marleneb@pennwell.com.

Northeast/New England/Midwest/North Texas/ Oklahoma/Alaska/Canada
Charlene Burman, 1455 West Loop South, Suite 400, Houston, TX 77027; Tel: (713) 963-6274, Fax: (713) 963-6228; E-mail: cburman@pennwell.com.

Scandinavia/Denmark/The Netherlands/Middle East/Africa
David Betham-Rogers, 11 Avenue du Marechal Leclerc, 61320 Carrouges, France; Tel: 33 2 33 282584, Fax: 33 2 33 274491; E-mail: davidbr@pennwell.com.

United Kingdom
Linda Fransson, Warlies Park House, Horseshoe Hill Upshire, Essex EN9 3SR, UNITED KINGDOM Tel: +44 (0) 1992 656 665; Fax: +44 (0) 1992 656 700; E-mail: lindaf@pennwell.com.

France/Belgium/Spain/Portugal/Southern Switzerland/Monaco
Daniel Bernard, 8 allee des Herons, 78400 Chatou, France; Tel: 33 (0)1 3071 1224, Fax: 33 (0)1 3071 1119; E-mail: danielb@pennwell.com, France, Belgium, Spain, Portugal, Southern Switzerland, Monaco.

Germany/Austria/Northern/Switzerland/Eastern Europe/Russia
Sicking Industrial Marketing, Kurt-Schumacher-Str. 16, 59872, Freienohl, Germany. Tel: 49 (0) 2903 3385 70, Fax: 49 (0) 2903 3385 82; E-mail: wilhelms@pennwell.com. Andreas Sicking, Germany, Austria, Northern Switzerland, Eastern Europe, Russia, Former Soviet Union.

Japan
e. x. press Co., Ltd., Plama Building, 2F, 2-13-8, Nihonbashi Kayabacho, Chuo-ku, Tokyo 103-0025, Japan, Tel: 81 3 3556 1575, Fax: 81 3 3556 1576; E-mail: manami.konishi@ex-press.jp; Manami Konishi.

Brazil
Grupo Expetro/Smartpetro, Att: Jean-Paul Prates and Bernardo Grunewald, Directors, Ave. Erasmo Braga 22710th and 11th floors Rio de Janeiro RJ 20024-900 BRAZIL; Tel: (55-21) 3084 5384, Fax: (55-21) 2533 4593; E-mail: jpprates@pennwell.com.br and bernardo@pennwell.com.br.

Singapore/Australia/Asia-Pacific
Michael Yee, 19 Tanglin Road #09-07, Tanglin Shopping Center, Singapore 247909, Republic of Singapore; Tel: (65) 6 737-2356, Fax: (65) 6 734-0655; E-mail: yfyee@singnet.com.sg. Singapore, Australia, Asia Pacific.

India
Rajan Sharma, Interads Limited, 2, Padmini Enclave, Hauz Khas, New Delhi-110 016, India; Tel: +91-11-6283018/19, Fax: +91-11-6228928; E-mail: rajan@interadsindia.com.

Italy
Vittorio Rossi Prudente, UNIWORLD MARKETING, Via Sorio 47, 35141 PADOVA - Italy; Tel:+39049723548, Fax: +390498560792; E-mail: vrossiprudente@hotmail.com.

From the Subscribers Only area of OIL&GAS JOURNAL online www.ogjonline.com

Supply, oil use trends reshape future of refining

Growth in production of light hydrocarbons combines with shifting patterns of oil consumption and new transportation options to reshape the refining industry's future.

Rising production of biofuels, especially ethanol, receives much public attention because of the international political push for petroleum substitutes produced from renewable materials.

The Editor's Perspective

by Bob Tippee, Editor

Less noticed but volumetrically more important is rapid growth in supply of natural gas liquids, especially from members of the Organization of Petroleum Exporting Countries. The International Energy Agency expects NGL supply from OPEC producers this year to average 5 million b/d. That's down by 600,000 b/d from what IEA was projecting for the year at the end of 2008 due to project delays and cuts in production of associated gas.

But it's still 1.5 million b/d above OPEC's NGL production at the start of this decade and, coupled with condensates, biofuels, liquids from coal and natural gas, and NGLs from outside OPEC, an important and growing segment of total liquids supply. Light hydrocarbon liquids are not, however, the same as crude oil. Unless blended with crude, they don't normally charge refinery stills. And they mostly yield gasoline.

James Burkhard, managing director of the Cambridge Energy Research Associates (CERA) Global Oil Group, sees in these distinctions major implications for refiners.

At CERA's annual energy conference in Houston, Burkhard predicted that production of light hydrocarbons will grow while that of crude oil flattens. The trend will raise supply of gasoline. Demand growth, though, will be stronger for middle distillates, which still require crude.

Over time, therefore, Burkhard sees margin strength for distillate and the opposite for gasoline. And he expects refining investments to focus more on conversion and less on crude capacities.

Furthermore, he told the CERA conference, hydrocarbons might not account for as much of future transport fuel supply as generally is believed. The mobility needs of people in populous, developing countries might instead be met by mass-produced, low-cost, light electric vehicles likely to emerge in the next 10 years.

Citing forecasts that the industry will have to supply 120-130 million b/d of oil by 2030, Burkhard said, "We frankly may not need it."

(Online Feb. 13, 2009; author's e-mail: bobt@ogjonline.com)

Market Journal

by Sam Fletcher, Senior Writer

WTI, Brent spread widens

Front-month oil prices fell in mid-February to the lowest closing since late December on the New York Mercantile Exchange but at the same time increased on IntercontinentalExchange futures in Europe, widening the spread between West Texas Intermediate and North Sea Brent.

The March contract for benchmark US light, sweet crudes dropped to $33.98/bbl Feb. 12 on NYMEX, while the April contract declined to $42.17/bbl. In London the March IPE contract for North Sea Brent crude increased to $44.65/bbl.

Analysts on both sides of the Atlantic noted the $10/bbl spread between the two crudes and the $8/bbl spread between the March-April NYMEX contracts, increasing the contango in that market while the Brent contango narrowed to less than $1.50/bbl.

"The differential between WTI and carrots is currently as well defined by arbitrage as is the WTI-Brent differential," said Paul Horsnell at Barclays Capital Inc. The two price spreads along with premiums commanded by Gulf Coast crudes over WTI "are all strong indications that WTI is not currently even a good benchmark for the totality of the US market, let alone the global market," he said.

Lower NYMEX prices were largely the result of a record 34.9 million bbl of crude in storage at the Cushing, Okla., delivery point. It is likely to test its maximum capacity estimated at 37-39 million bbl.

Meanwhile, Adam Sieminski, chief energy economist, Deutsche Bank, Washington, DC, predicted WTI will average $43/bbl in 2009 with Brent at $45/bbl. He said "A sharp recovery in oil prices toward $80/bbl in 2011 is possible, but dependent on a strong economic revival starting in 2010." However, he said odds favor a prolonged period of sluggish economic growth.

John Waterlow, principal demand analyst for Wood Mackenzie Ltd., Edinburgh, reported, "The outlook for oil demand over the next couple of years is the weakest we have seen for decades." WoodMac predicted global gross domestic product will contract by 0.6% in 2009, leading to lower global oil demand of 84.3 million b/d, down 1.5 million b/d from 2008. It is forecasting "a deeper and longer recession" lasting far into 2010.

US oil demand is expected to fall by 700,000 b/d in 2009. "We anticipate the recession will be longer and deeper than previous estimates as the crisis worsens. We believe that the chances of anything more than a very slight recovery in 2010 are remote," WoodMac analysts said.

They said European economies are among the most seriously affected by the global financial crisis and declines in oil demand will be much more apparent in 2009 and 2010. "With a contraction in average European GDP of 2.3% in 2009 and an even larger fall in the large, mature economies, we now expect oil demand to be 15.3 million b/d in 2009, equating to a fall of 3.9%, while demand in 2010 is forecast at 15.0 million b/d, a further drop of 2.2%."

Government stimulus

The market's negative reaction to "a less than fully developed and inadequately funded [US] financial rescue plan" is a clear indication of the extent to which recovery is tied to progress in fixing a dysfunctional financial sector," Sieminski said. "As we see it, governments will need to marshal considerably more resources than are politically palatable currently to deal effectively with the current crisis. A growing likelihood that they will fail to do so soon points to a slow and bumpy ride ahead."

He predicted, "A potential series of fiscal stimulus packages will be confronted by ongoing fierce financial headwinds. We now expect average global growth to fall by 0.2% in 2009, with the Organization for Economic Co-operation and Development nations plummeting 2.7%, and the non-OECD countries growing at only about 3.4%.

WoodMac reported, "The initial wave of stimulus packages do not appear to be sufficient to offset contraction in growth this year. With the exception of India and Brazil, virtually all countries are experiencing either an outright recession or a growth recession. The rapid deterioration in growth in China coupled with further contraction in industrial output in Japan have meant that the Asian 'tigers' have been unable to quarantine their economies from the financial crisis."

Sieminski said, "Despite the unrelenting market focus on demand at this point, concerns about the impact of low prices on the oil supply outlook are growing. We see non-OPEC supplies falling by 200,000 b/d in 2009, but with world gross domestic product growth likely to be negative, demand estimates continue to fall faster than supply forecasts, keeping pressure on OPEC to cut quotas at least one more time."

(Online Feb. 16, 2009; author's e-mail: samf@ogjonline.com)

OFFSHORE ASIA™

• Incorporating Subsea Technology Asia •

March 31 - 2 April 2009
IMPACT Exhibition Centre
Bangkok, Thailand
www.offshoreasiaevent.com

REGISTER ONLINE TODAY
WWW.OFFSHOREASIAEVENT.COM

WHY ATTEND OFFSHORE ASIA 2009

- Choose from various tracks offering inside expertise in the offshore industry, including E&P, Multiphase Pumping and Technologies and Subsea Technology Asia
- Match your information and learning needs, and help you tackle everyday challenges
- Gain global and regional perspective through keynote addresses on the state of the industry as well as emerging trends
- Extend your personal knowledge of offshore technology and trends
- Benefit from networking by sharing information
- Discover and evaluate products and services
- Examine the latest products, meet with the manufacturers to learn the benefits you will get from their use
- Take advantage of the knowledge transfer with the best and brightest in the offshore industry
- Become an integral part of the region's fastest growing Conference and Exhibition

FOR EVENT INFORMATION AND REGISTRATION VISIT:
WWW.OFFSHOREASIAEVENT.COM

Owned & Produced by: PennWell®

Flagship Media Sponsors: Offshore, OIL&GAS JOURNAL

Incorporating: Multiphase Pumping and Technologies

Frac-Point™ Openhole Fracture Completion System:

Quick and Reliable

Get to TD quickly and reliably. Accurately fracture multiple intervals in a single trip. Eliminate the need for cementing and perforating operations. Turn marginal unconventional-reservoir prospects into moneymakers.

Choose Frac-Point if you also want a versatile, integrated system that can be optimized for your specific needs, with proven high-performance technology from the world's largest completion toolbox.

And when you choose Frac-Point, you get the knowledge and global resources of Baker Oil Tools, the leader in completion technology.

Meet the challenge of unconventional reservoirs with Frac-Point.

www.fracpoint.com

BAKER HUGHES Baker Oil Tools

The proven system for tight gas success