

ON POINT

Vol 2, No. 9 September 2007



GORDON ENERGY
SOLUTIONS

Candid, Forward-Looking Analysis
of the Oil & Gas Industry

IN THE NEWS

Global Gas – In Venezuela, Mariscal Sucre continues to be problematic. The destination market for the US\$2.5 to \$3 billion gas project is a major issue: export or domestic market?

Elsewhere, the Repsol and Gas Natural agreement to develop Algeria's Gassi Touil has been canceled by Sonatrach. Project start-up was previously pushed back from 2009 to 2012.

Snohvit production, in Norway's Barents Sea began with contractual shipments of LNG to markets in the US and Europe scheduled to begin by 4th quarter.

Canada's C\$16.2 billion Mackenzie Gas Project continues to languish with start-up unlikely before 2014 at best. Government incentives such as accelerated depreciation are being considered but are unlikely before the last quarter of 2008.

Completion of the previously announced swap of a 25% stake in Russia's Yuzhno Russkoye field for a stake in E.ON's Hungarian gas distribution system is now uncertain.

Expansion at Petronas -- Petronas has signed two significant agreements to expand its international upstream position. The company acquired Woodside's Mauritanian operations for US\$418 million. In addition, Petronas signed an agreement with Shell to take a 25% share in the Evans Shoal gas field in NT/P48. Terms for the Evans Shoal deal are not known.

Oil Sector Re-Integration Ongoing -- Shell and Aramco, through their Motiva JV have approved doubling the size of the Port Arthur refinery in Texas. The additional 325 Mb/d of capacity targets heavy, sour crude and will require US\$7 billion in new investment. It is unclear whether this new capacity will ultimately serve as an outlet for rising Shell oil sands output. If this does happen, additional pipeline capacity will be required.

Another interesting aspect of this announcement is Aramco's growing role in international refining projects. This program of expansion includes the US\$4 billion JV with ExxonMobil and Sinopec to triple capacity of a Chinese refinery to 240 Mb/d. Limited recourse financing for this project was secured this month.

Pacific Basin Gas

Iranian Gas Export Troubles Continue – Total and NIOC disagreements over pricing of gas and the damage caused by rising costs have combined to make this project uneconomic. These barriers to progress place PetroChina in a difficult position as it previously sought to purchase at least 4 mmtpa of LNG from the project. Price disputes as a barrier to progress are a common theme in Iranian gas export negotiations. In addition to the Pars LNG case, Iran has also been unable to complete a 2001 agreement with Crescent National Gas to export Salman field gas to the UAE. This project was originally anticipated to enter production by mid-2006.

Meanwhile, Iran has pronounced itself ready to proceed with the US\$11 billion Pars LNG project on its own if agreement cannot be reached with Total. The credibility of this threat in any meaningful way in the near to medium-term is suspect at best. Just as importantly, however, one must ask why the government would take on the cost and risk on its own account when so many better alternatives exist? As the Pars LNG project languishes it is notable that competing sources of gas appear to be capturing the opportunity that Iran is frittering away.

Specifically, a number of recent events in the South Asian and Pacific Basin gas sector should be noted. These events could materially affect who will ultimately succeed.

Australian Supply Deals to China

PetroChina signed two recent supply deals:

- Shell will supply 1 mmtpa of LNG from its stake in the Gorgon project to PetroChina. The 20 year deal is conditional on the Gorgon project

achieving Final Investment Decision (FID) status. In related news, the Western Australia government has given environmental approval for the Gorgon project subject to more restrictive environmental protection measures.

- Woodside agreed to sell from 2 to 3 mmtpa to China from its Browse Basin projects starting in 2013 to 2015. The term of the agreement could extend from 15 to 20 years and is, again, subject to achieving FID. The size of the proposed shipments (if the agreement proceeds) are sufficient to constitute a foundation contract.

While both of these agreements are subject to FID, the directional implications are still important: (1) the Australian sector is moving to capture a growing share of the international gas trade and (2) supply tie-ups such as we are seeing in Iran will facilitate this strategic move.

The impetus in this direction is reinforced by two other recent events. First, Chevron's CEO recent commented that the long-term plan for Gorgon could be a doubling of capacity to 20 mmtpa. Second, Hess' heavy spending to get two blocks in the Carnarvon Basin also can be seen as a complementary effect. These blocks are in the broad area that encompasses the key fields including Greater Gorgon, Io-Janx, Scarborough and Pluto.

Hess has committed to spending US\$438 million and, with Woodside, US\$171 million for WA-390-P and WA-404-P, respectively. The company has recently suggested that the resource potential of each block ranges between 2 and 15 Tcf. Using the estimated range of reserve potential, the valuations implicit in these bids can be

OUR PERSPECTIVE



estimated. WA-390-P valuations range from US\$1.31/boe to US\$0.175/boe in the low and high reserve cases, respectively.

Peruvian Supply to Mexico

On the other side of the greater Pacific Basin market, Repsol won rights to deliver roughly 2.4 Tcf of gas to Mexico's planned Manzanillo LNG terminal on the west coast. Planned volumes will rise from 90 mmcf/d in 2011 to 500 mmcf/d in 2015.

Repsol was the sole bidder for the supply contract. The gas will be delivered to Mexico's west coast for use in power generation and eventual supply to Guadalajara. The gas will be produced from the Camisea gas export project over a 15 year period.

Pricing of the gas in the call for bids was linked to a base price of 91% of Henry Hub. Repsol bid US 3 cents below this base level. The estimated revenue value of the contract is between US\$12 and US\$15 billion. Based on the estimated contract value and volumes,

the implied value of the gas ranges between US\$4.38 and US\$5.48 per mcf.

The associated contract for construction of the LNG terminal has not yet been announced.

Cost Inflation at Major Projects

Canadian Oil Sands

Long Lake -- Nexen and OPTI announced that the cost of the phase 1, 60 Mb/d project, has risen by 10% to 15% to a range of C\$5.8 to C\$6.1 billion.

Fort Hills -- UTS Energy has sold a 10% share (out of its original 30% share) to its partners (Petro-Canada and Teck Cominco). Each of the other partners has acquired a 5% additional share. Fort Hills is an integrated oil sands project combining mining operations and an upgrader to be located in Sturgeon County. Regulatory approval of the mine has been received but approval of the upgrader is not expected until next year.

Front end engineering and design is still underway and is not expected to be

complete until the 3rd quarter of 2008. Phase 1 of the project (output of 160 Mb/d of bitumen and 140 Mb/d of synthetic crude oil (SCO) beginning in mid 2012) is currently estimated to cost C\$14.1 billion. Petro-Canada has reported that first phase project returns will be a modest 8.2% at \$45 oil.

CONTACTS

Gordon Energy Solutions is an energy consulting firm specializing in competitor analysis, strategic decisions, political risk analysis, and global issues concerning the international, integrated oil & gas industry. We anticipate future opportunities and challenges confronting our clients and assist in exploiting those opportunities.

By integrating the corporate and financial dimensions of strategy and performance with detailed project level analytics, we maintain a unique approach to your business. GES provides value to our clients through our forward-looking, critical analysis and unique perspective.

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As part of our continuing development program, Gordon Energy Solutions (GES) has completed a major expansion of our modeling and analytic capabilities. The results of this expanded capability are available to our clients through the Peer Analysis Service or through consulting services. The improvements are briefly described below.

We believe that these new and expanded capabilities, combined with our industry leading commitment to client service, clearly differentiate us from our competitors. We invite your questions or comments.

GES development efforts in 2007 have expanded the scope of our asset-focused approach to include the full spectrum of company oil and gas assets.

As a result, GES now offers the following capabilities through our Peer Analysis Service and through consulting services:

- Asset models have been extended to all production sources (legacy as well as new project assets) on a field by field basis
- These models use actual legacy production data and evaluate historic field by field decline rates
- Projections of oil and gas output on a net basis are available using country-specific fiscal terms and cash flow models and
- Detailed value as well as volumetric analysis

How comprehensive is GES' asset coverage for a typical company? Percent coverage will vary by company. Results from a sample of 11 companies will illustrate how comprehensive our coverage is. This group includes BP, Chevron, ConocoPhillips, ENI, ExxonMobil, Petrobras, PetroChina, Repsol, Shell, StatoilHydro and Total. The median percent of company worldwide output that GES has modeled on a field by field basis is 92%; the lowest share is for ExxonMobil at 87.8%.

Our asset-focused approach makes it possible for us to break out these production, reserves, and capital spending forecasts in any number of different categories that meet our clients' specific needs. These include, but are not limited to:

Sources of Production – For all of the fields in a company's portfolio, we can detail exactly how it gained access to its production and reserves: acquisitions, equity companies, NOC alliances, production agreements, or grass roots. Moreover, we track changes in working interest. Again, all of this is on a field by field basis.

What capabilities does this create?

The production by source capabilities allow us to answer some of the central, recurring strategic questions in the industry and among investors. Who has pursued an acquisitions-based strategy? Who has succeeded or failed? How has strategy performed in specific regions or what role have specific assets played?

We can analyze how companies have evolved and what strategies they have used to get there. The result is a fundamentally richer and more detailed understanding of what is driving company performance.

By contrast to the GES approach, the widely used, conventional performance measures based on a simple analysis of annual report data are often misleading. These aggregated approaches cannot account for the dramatic differences in how companies have generated new assets and business plays. Moreover, these conventional approaches cannot differentiate results attributable to asset differences. As such, they more often than not compare apples to oranges. The capabilities we describe here allow GES to more accurately evaluate performance by accounting for differences in the means that companies use and the qualities of the assets they hold.

Because each field is modeled using individual country fiscal terms, our clients receive price and cost-sensitive production, cash flow, and value forecasts. Moreover, the system by which these forecasts are generated is flexible and inputs can be readily changed. This enables us to tailor analyses to our clients' price and cost assumptions if they so choose.

Production by Class – Companies vary greatly in terms of the composition of their production. GES evaluates production and value sources on an asset basis and categorizes these sources in groupings such as: Conventional, Deepwater, Unconventional Gas, Heavy Oil, LNG, Arctic Gas, and GTL.

Differences in the relative importance of these types of assets can be critically important to any business analysis. While barrels of oil equivalent comparisons are common, they cannot properly account for value differences associated with fundamental differences in quality of production or access to premium markets.

The future role of conventional oil production varies from as low as 12% for Petrobras to as high as 85% for RepsolYPF. The future role of heavy oil varies from 1% for BP to almost 35% for ConocoPhillips. These differences can have a profound effect on the relative value of a barrel of oil reserves in each companies' portfolio.

Maturity of Production – Conventional Primary Recovery, Infill/Supplemental Recovery, Enhanced Recovery, Mining/SAGD, and Frontier

Indicators such as these reflect the degree of technological complexity implicit in a company's asset base.

For New Projects, the Status of Production – GES categorizes new projects by 5 types: Producing but not yet complete, Under Construction, Front End Engineering and Design, Concept, and Appraisal. The degree of uncertainty in the company's asset base clearly rises as we move from the categories of producing to appraisal. Clearly, too, these categories can help in any evaluation of a company's relative exposure to cost inflation pressures.

What capabilities does this create?

GES clients can use our research to identify the leaders in various categories of production class and maturity of technology and rank themselves. Who is spending what across the categories detailed above and what production levels will they achieve. Where is a companies' future capital being spent?

Who can use GES services?

Acquisitions and Divestitures, Portfolio Management — Because GES analysis is asset-focused, our data and models can be easily used to conduct acquisition screening on either a corporate wide or individual asset basis.

Using the GES models and data, we can identify the specific roles of individual assets in defining future output and corporate value. This capability has both internal and external uses for our clients

Internally, these capabilities can be used to identify, on a field by field basis, which assets should be kept and which can be divested.

Externally, the same analytic tools can be applied to a competitor. In this way, our clients can (1) identify assets of interest that the competitor may consider to be immaterial, (2) independently evaluate the value of an asset or company or (3) identify potential buyers of an asset being considered for divestiture and assess the rationale of a deal from that buyer's perspective.

Strategy and Other Consulting — GES advises clients on strategic options in key business plays and at the corporate level. This advice draws from all of our data and modeling capabilities.

Competitor Intelligence — GES provides the Peer Analysis Service to an number of clients. This service draws from all of the methods and capabilities described here to generate the most complete competitor intelligence assessment in the business.

Market Analysis and Forecasts — Service companies, drillers and other suppliers to the global oil and gas industry can use GES to considerable advantage. The GES analysis identifies and quantifies key characteristics of a company that are directly relevant to the type of services it will require, where they will be needed, and the amount of capital the company is likely to spend.

In short, GES can provide detailed, long-term forecasts of where and on what their customers' future capital budgets will be spent. What technology do companies need and what will they need in the future?

Please contact us for more information on GES services, or to schedule an on-site presentation where we will discuss recent events in the industry and demonstrate our unique mix of analysis and client support service.

COST WATCH

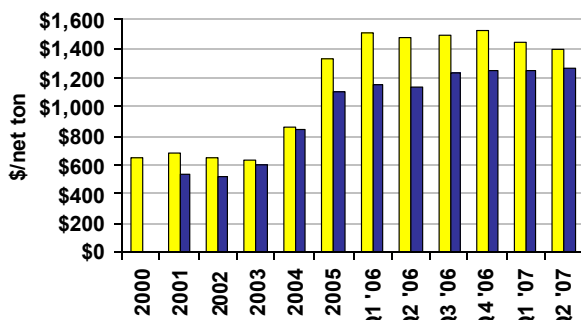


August Producer Price Indices and Cost Inflation Indicators

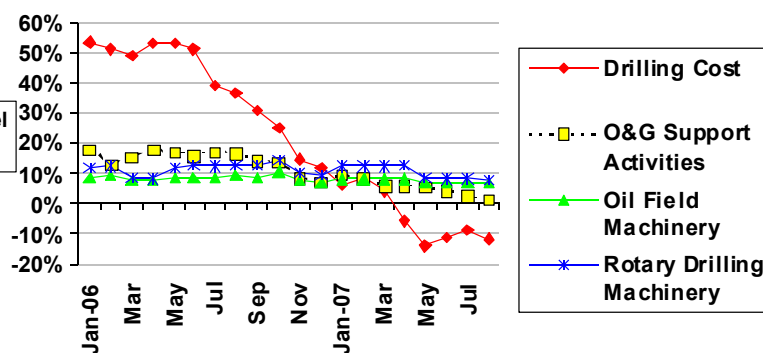
Since the 1st Quarter of this year, drilling costs have been down each month compared to the same month in 2006. The rate of deflation in drilling costs has been steady in each month at roughly 10%. Month to month declines within 2007 have been relatively modest

August data do not change last month's assessment of the situation: results for key oil field costs other than drilling costs show a general pattern of moderating inflation rates but not falling costs. This can especially be seen in the costs of oil and gas support services and the cost of tubular steel products. Continuing reports of rising costs at key global oil and gas projects (including several reported elsewhere in this issue) seem to suggest ongoing strong inflationary pressures. However, at least part of this apparent continuing pressure is related to lags in adjustment and reporting of adjustments in big world-scale project cost estimates.

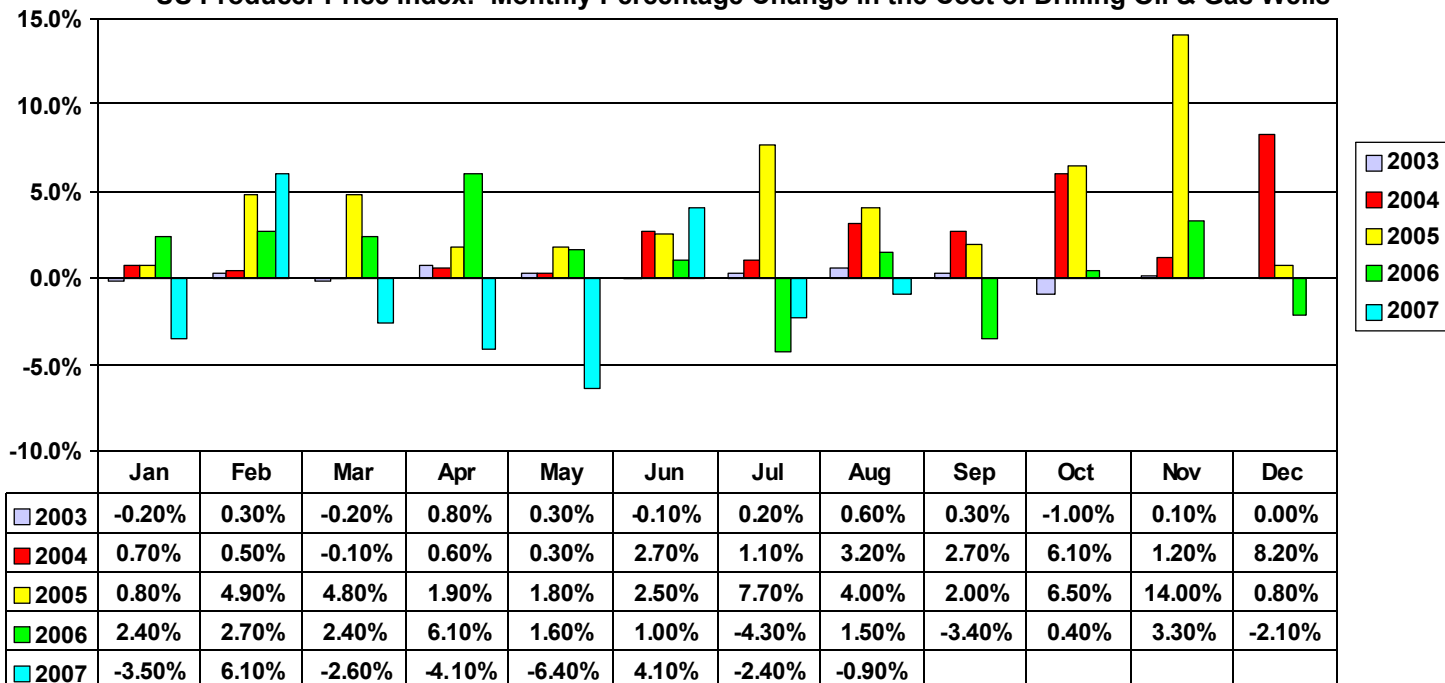
Tubular Steel Products Price



Annual Inflation of Selected Industry Costs



US Producer Price Index: Monthly Percentage Change in the Cost of Drilling Oil & Gas Wells



Year over Year Percentage Change

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2005	27.2%	31.7%	36.5%	37.8%	39.4%	39.2%	45.8%	46.6%	45.9%	46.3%	59.1%	51.7%	43.2%
2006	53.3%	51.1%	48.7%	53.0%	52.7%	51.3%	39.2%	36.7%	31.3%	25.2%	14.5%	11.6%	37.8%
2007	5.7%	9.1%	4.2%	-6.1%	-14.1%	-11.0%	-9.1%	-11.5%					