

# ON POINT

Vol 3, No. 1 January 2008



GORDON ENERGY  
SOLUTIONS

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

### IN THE NEWS

**Alberta Oil Sands Royalty Agreement; Voyageur Oil Sands Go-Ahead**--Suncor reached agreement with the Alberta government on a program to transition royalty terms to the new framework announced last year. From January 1, 2010 through January 1, 2016 Suncor will pay from 25% to 30% of net profits. Afterwards, the company's oil sands mining operations are subject to the new system.

Following up on the agreement, Suncor announced that it will spend C\$20.6 billion on its Voyageur oil sands project. The phased project will increase output by 200 Mb/d by 2012 and will include a third oil sands upgrader. Four new firebag stages will be implemented in each year beginning in 2009 and ending in 2012, each with capacity to produce 68 Mb/d of bitumen.

#### Acquisitions

**Consol Energy Offers to Buy Outstanding CNX Gas Shares**--Consol has offered to acquire the 28 million outstanding shares of CNX Gas that it does not already own at an estimated cost of US\$932 million. CNX shareholders will be offered .4425 shares of Consol Energy stock for each share of CNX. Consol sold shares in CNX to the public two years ago in an effort to more fully realize the value of its natural gas assets. More inside ...

**Tangguh LNG**--CNOOC has agreed to sell to Talisman a 3.06% working interest in the Tangguh LNG project in Indonesia for US\$212.5 million. This reduces CNOOC's share to 13.9%. The deal includes both upstream and liquefaction interests in the project. As of October 2007, BP estimated that the project was 82.7% complete. Gas sales are expected to start in 2008. More inside ...

**Chesapeake Monetizes Appalachian Reserves** -- The company sold a volumetric production payment to UBS and DB Energy Trading for US\$1.1 billion. Proved reserves associated with the Appalachian assets were estimated at 210 Bcfe. The assets were originally acquired as part of the Columbia Natural Resources acquisition in late 2005.

#### Kashagan Agreement

The recent agreement between Kazakhstan and the IOC partners in the Kashagan project is part of an ongoing restructuring of terms for oil and gas operations in Kazakhstan.

This process includes the October 2007 changes in the Subsoil Law whereby the government can unilaterally modify or cancel oil agreements when the subsoil user's operations could pose a threat to national security by substantially impairing the economic interests of Kazakhstan. Moreover, the law establishes what amounts to a 1 year limit on negotiations when such a decision has been made.

The Kashagan agreement includes a number of key points. While the details and how the new terms will be implemented are unclear, key points appear to be:

- Kazmunaigaz will increase its working interest in the project from 8.33% to 16.81% in exchange for payment of US\$1.78 billion.
- Based on current reserve estimates, the effective "acquisition cost" of Kazmunaigaz' additional reserves is \$1.61/boe
- Compensation for the additional 8.5% WI will be spread over three years beginning with production startup
- The IOC partners will pay Kazakhstan additional amounts above the terms of the original agreement with these amounts variously estimated at between US\$2.5 billion and US\$5.0 billion in a provision which allows Kazakhstan to receive a share prior to the completion of cost recovery
- Production start is further delayed to late 2011

Updated reserve and capital spending estimates are expected to be announced in March.

Combined with the much higher than previously anticipated project costs and the additional delay in production startup, the impact on the project economics from the point of view of the IOCs is severe.

#### ConocoPhillips Exercises Keystone Oil Pipeline Option

In another move to build its integrated oil sands position ConocoPhillips exercised an option to acquire a 50% working interest in TransCanada's Keystone oil pipeline. Keystone is a \$5.2 billion project to build a 3,456 kilometer oil pipeline network from Alberta to Wood River and Patoka, Illinois in the US. The nominal capacity of the line is 590 Mb/d and includes construction of a 473 kilometer extension from the Nebraska/Kansas border to Cushing, Oklahoma. Completion is scheduled for the 4<sup>th</sup> quarter of 2010.

ConocoPhillips had previously signed a Memorandum of Understanding to ship crude on the proposed line. By late October 2007 TransCanada had already issued contracts for \$3 billion associated with the pipeline. TransCanada announced that it had received the Final Environmental Impact Statement regarding the project on January 11, 2008.

Participation in Keystone is the oil sector parallel to ConocoPhillips' working interest in the Rockies Express natural gas pipeline connecting the Rocky Mountain gas industry to the Midwest and eastward. The move towards more integrated programs in North America is being replicated by others in the industry. The most recent example of this is the Murphy Oil announcement of

# OUR PERSPECTIVE



## British Columbia Lease Sales

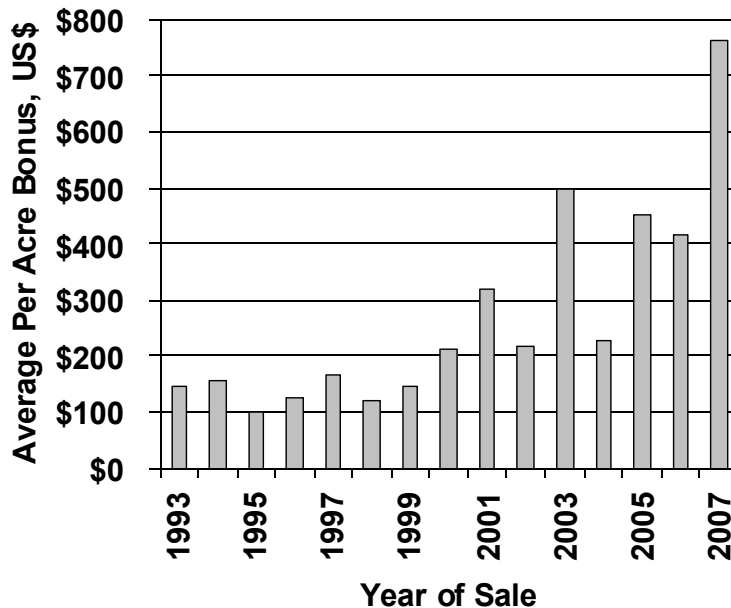
As further evidence of the rising cost of acquiring new business development opportunities, Bidding on British Columbia acreage continued to be very strong in 2007.

Capturing bonus payments of US\$1.1 billion in 2007, the province awarded a total of slightly less than 1.5 million acres. Land costs in the BC sales averaged almost US\$800/acre in 2007. Upward pressures on land costs is understated by the 2007 average. Specifically, the average cost of land won in December 2007 was US\$1,266/acre.

Figure 1 shows annual average per acre bonus bids in British Columbia lease sales. In 2007 per acre costs were nearly double the average of the preceding four years and are 50% higher than the previous peak unit cost in 2003.

The focus of much of this bidding is tight gas and reflects a continuing move within the North American sector towards resource plays and multi-year, phased drilling programs. The planned surging volumes of oil sands projects combined with the fact that both Alaskan and Mackenzie Delta gas are bogged down increases the attractiveness of this resource play as an alternative source of natural gas supply in Canada.

Figure 1: Annual Per Acre Bonus Bids in British Columbia Lease Sales



## 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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its search for partners to expand its refinery in Wisconsin.

## Major Moves at Murphy Oil

In a series of transactions and announcements over the period since mid-2007 Murphy Oil is undertaking a major restructuring of its North American strategy and asset base. The key events include:

- The June 2007 acquisition of Bear Ridge Resources assets in the Tupper area (Montney tight gas play) of British Columbia for US\$146 million,
- A follow-up successful US\$223 million bid for another 41,742 acres in the December British Columbia lease sale in the same area and play,
- A planned sale of its heavy oil properties in Saskatchewan (3.5 Mb/d output), and
- The recent announcement of a possible US\$6 billion expansion of its Wisconsin refinery from 35 Mb/d to 235 Mb/d and solicitation of partners to fund the project

Based on the combined land deals in British Columbia the weighted average per acre cost to Murphy is competitive with the data shown in Figure 1.

The company's recent moves are significant for two reasons.

First, the company's program in British Columbia marks an important effort to participate in a resource play driven strategy in onshore North America. Murphy estimates that its acreage in British Columbia could yield 2 Tcf of natural gas and an initial phase of drilling in the Tupper area has been approved. First production from this initial phase could start by 4<sup>th</sup> quarter of 2008.

Second, the proposed refinery expansion offers the company a potential means for capturing a significant position in Canadian oil sands as part of the broader integrated program strategy being pursued by ConocoPhillips, BP, and Marathon.

Another important element of Murphy's recent program is reflected in its participation in the last central Gulf of Mexico lease sale (Sale 205). In this sale Murphy won 26 blocks at a working interest cost of \$161 million (up from six blocks and \$5.4 million in

winning bids in Central Sale 198 held in 2006).

The winning bids in Sale 205 were all located in the DeSoto Canyon and Lloyd Ridge areas. While a number of the blocks are near the recently started Independence Hub infrastructure, many are further east.

## LNG, Indonesia

In December PT Medco (20%), Mitsubishi (51%) and Pertamina (29%) signed a shareholders agreement to establish PT Donggi Senoro LNG. The company will undertake the Donggi Senoro LNG project on Sulawesi.

Plans call for a 2 mmtpa liquefaction facility to use gas from the estimated 2.6 Tcf proved and probable gas reserves associated with Senoro-Toili field. Estimated production from the fields will be 270 Mmcf/d.

Gas pricing has been an issue. A gas sales agreement was previously expected in the 4<sup>th</sup> quarter of 2007. This month the government urged the companies to speed up the process.

Two recent Gas Sales and Purchase Agreements (GSPA) have been signed. Both are for reserves located offshore Sumatra.

The first GSPA was signed in December 2007 and involves North Sumatra Block A production from the Rambong, Julu Rayeu and Alur Siwah fields. Partners are Premier Oil (41.66%), PT Medco (41.67%) and Japex (16.67%). This contract includes a floor price minimum of US\$5.00/mmbtu with an apparent link to urea prices.

The second GSPA was signed in January 2008 and involves Serica Energy's Kambuna field also located offshore North Sumatra. The initial price is set at US\$4.50/mmbtu with a 3% per annum escalation factor.

# MERGERS, ACQUISITIONS, & DIVESTITURES



## ConocoPhillips Divesting Part of Burlington Resources International Assets

EOG Resources acquired ConocoPhillips interest in the Chuan Zhong natural gas block. The block is located in Sichuan province and covers an area of 295,000 acres. The Ba Jiao Chang gas field is located on the block and is reported to have produced an average of 10.3 million cubic feet of natural gas a day in 2006.

As a result of this deal, EOG Resources is returning to China. EOG Resources will hold a 100% working interest in the block and be the co-venturer of China National Petroleum Corp.

In Peru ConocoPhillips inherited Burlington's interest in Block 57. The block is located north of Camisea. In March 2007 ConocoPhillips reached an agreement to sell this interest to Repsol and Petrobras with the deal pending government approval. Repsol has announced a new gas discovery on the block. The well tested 35 Mmcf/d gas plus associated liquids.

Repsol is the operator with 41% with Petrobras at 35.15% and Burlington Resources Peru at 23.85%.

## Talisman Acquires Partial Interest in Tangguh LNG

As previously noted in this issue, CNOOC has agreed to sell a 3.06% working interest in the Tangguh LNG project in Indonesia to Talisman for US\$212.5 million. The deal includes both upstream and liquefaction interests in the project.

As of October 2007, BP estimated that the project was 82.7% complete. Gas sales are expected to start in 2008. Under terms of a 2004 GSPA with Sempra Energy, a substantial portion of Tangguh's output is slated for delivery to the Energia Costa Azul terminal in Mexico. Pricing of these deliveries is tied to the Southern California border index for natural gas.

Table 1 summarizes the deal analysis based on GES integrated project estimates. Under the mid and high price cases the deal is projected to yield a break even NPV and a positive NPV at a 10% discount rate, respectively.

From a strategic perspective, the deal builds on Talisman's substantial gas position in the Far East and provides entry into LNG. Upside potential from the deal, either from future reserve additions or through future processing of other gas discoveries is difficult to evaluate at this time.

In related news CNOOC announced that its upstream budget for 2008 is US\$5.24 billion. This is a 43.7% increase over 2007.

## Consol Energy Offers to Buy Outstanding CNX Gas Shares

Consol has offered to acquire the 28 million outstanding shares of CNX Gas that it does not already own at an estimated cost of US\$932 million. CNX shareholders will be offered .4425 shares of Consol Energy stock for each share of CNX.

The offer represents a 12% premium to recent traded values of CNX Gas shares. However, using CNX reserve estimates, the proposal represents US\$4.03 per Mcfe proved reserves and US\$1.39 per Mcfe proved plus unproved reserves and resources. Because only 48% of proved reserves are developed, production is relatively low. Based on 2006 output, the offer is equivalent to US\$33,136 per Mcfe/day.

CNX Gas has formed a special committee of independent board members to review the offer.

## Noble Energy Sells Assets in Argentina

Continued on p. 5

**Table 1: Estimated Economics of the Tangguh Deal**

GES Long-Term Mid-Cycle WTI Price Case	Net BOE Reserves (mmbae)	Reserve Acquisition Cost, \$/BOE	Liquefaction Cash Flow NPV @10%, \$mm	Upstream Cash Flow NPV @10%, \$mm	Total Cash Flow NPV @10%, \$mm	Upstream Cash Flow \$NPV/BOE	Acquisition NPV \$mm
\$30	41.1	\$5.17	\$100.2	\$0.9	\$101.1	\$0.02	(\$111.4)
\$50	29.6	\$7.18	\$182.2	\$28.4	\$210.6	\$0.96	(\$1.9)
\$70	24.6	\$8.65	\$271.6	\$44.1	\$315.7	\$1.80	\$103.2

Notes:

- 1) Reserve acquisition cost is estimated using the total purchase cost and GES projections of net boe output over the life of the project. Based on cash flow projections a substantial portion of the purchase price will likely be allocated to the liquefaction assets
- 2) Project cash flow projections are broken into their liquefaction and upstream components
- 3) Acquisition NPV is calculated as the NPV of both liquefaction and upstream cash flows minus the purchase price of US\$212.5 million
- 4) After tax cash flows are discounted at 10%

# MERGERS, ACQUISITIONS, & DIVESTITURES



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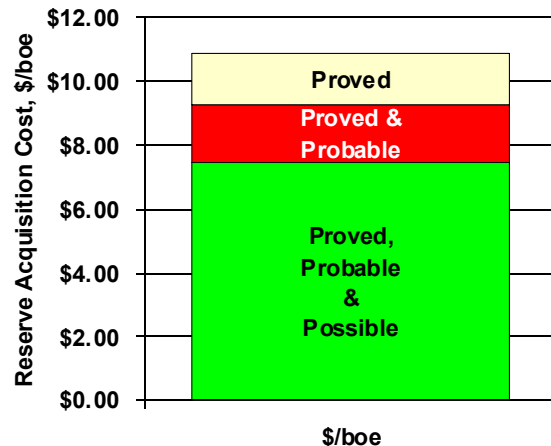
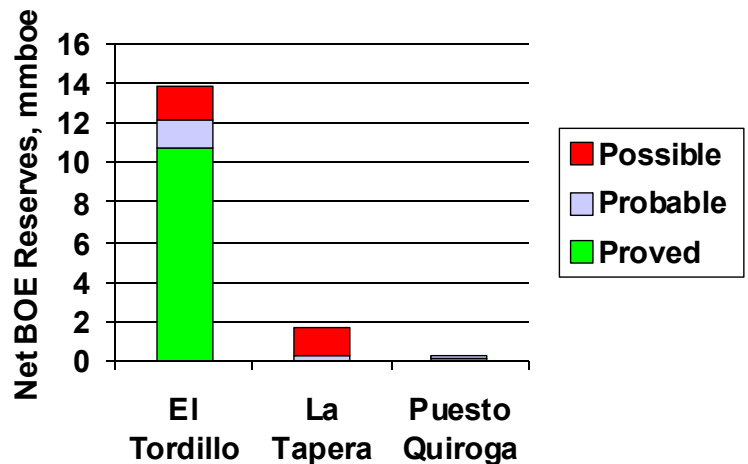
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In related news CNOOC announced that its upstream budget for 2008 is US\$5.24 billion. This is a 43.7%

Figure 2: Estimated Reserves & Per BOE Reserve Acquisition Costs Petrobras Acquisition of Noble Energy Assets in Argentina



Source: GES Estimates; Secretaria de Energia, Argentina

# MERGERS ACQUISITIONS & DIVESTITURES



## US Asset Sale Value Indicators

### EnergyNet Regional Sales Data 2006

Working Interests 6:1

	Average \$/BOE/D	Average \$/MCFE/D	Average Multiple (Average Income)	Average Multiple (Last Income)
Appalachians	\$73,565	\$12,261	43.62	50.38
Central Texas	\$48,902	\$8,150	37.81	40.12
East Texas	\$62,972	\$10,495	44.78	49.16
Gulf Coast	\$45,285	\$7,248	37.19	45.30
Michigan Basin	\$44,347	\$7,391	41.24	40.58
Mid Continent	\$52,819	\$9,148	50.14	54.44
Panhandle	\$43,592	\$7,028	43.84	51.81
Permian Basin	\$62,599	\$10,433	45.32	46.10
Rockies	\$66,418	\$11,070	45.93	68.58
South Texas	\$37,688	\$5,484	34.34	44.28
<b>National Average</b>	<b>\$53,819</b>	<b>\$8,871</b>	<b>42.4</b>	<b>49.1</b>

EnergyNet data on US deal metrics is shown on the following page.

EnergyNet provides a way to high-grade a portfolio of assets, maximizing value for each individual property or field, without expending significant time and effort. EnergyNet maximizes value by efficiently offering the elemental properties (single well, lease, or field) to the largest audience of qualified and accredited oil and gas investors. There are simply more Buyers in the marketplace capable of competing to win a \$1MM property than a \$100MM package of properties, and EnergyNet has established relationships with over 12,500 Buyers. Geographically diverse packages benefit by being broken down into their elemental parts. By marketing and selling properties in the most logical, elemental pieces, Sellers maximize value for each part of the package and do not exclude Buyers from the process.

### EnergyNet Regional Sales Data 2007

Working Interests 6:1

	Average \$/BOE/D	Average \$/MCFE/D	Average Multiple (Average Income)	Average Multiple (Last Income)
Appalachians	\$47,237	\$7,873	38.72	34.44
Central Texas	\$52,151	\$8,281	45.56	44.93
East Texas	\$49,862	\$6,599	50.39	56.93
Gulf Coast	\$32,371	\$12,734	37.56	44.08
Michigan Basin	\$50,574	\$8,429	31.79	75.45
Mid Continent	\$55,110	\$8,491	52.60	58.43
Panhandle	\$39,728	\$6,621	45.60	50.09
Permian Basin	\$49,800	\$7,609	51.07	47.98
Rockies	\$43,093	\$7,182	40.92	41.95
South Texas	\$33,828	\$5,032	38.56	50.07
<b>National Average</b>	<b>\$45,375</b>	<b>\$7,885</b>	<b>43.3</b>	<b>50.4</b>

EnergyNet can prepare, market, and close a set of property transactions much faster than any other divestment-focused company in the industry. The Continuous Model allows EnergyNet to handle as much for a company as requested, including gathering data, preparing properties, filing the conveyance documents, escrow and post-closing services.

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# COST WATCH

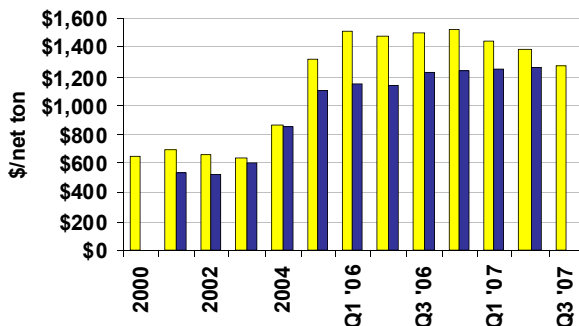


Based on preliminary data for December, drilling costs in 2007 are estimated to have fallen roughly 4.1% compared to their levels in 2006. However, oil & gas support activities, oil field machinery and rotary drilling machinery are estimated to have risen in 2007 by 3.6%, 17% and 9.5%, respectively. These estimates are subject to further revision in the next few months but are (1) consistent with a continuing inflationary environment in several key sectors supporting oil and gas investment activities but (2) a moderating cost push situation for 2008.

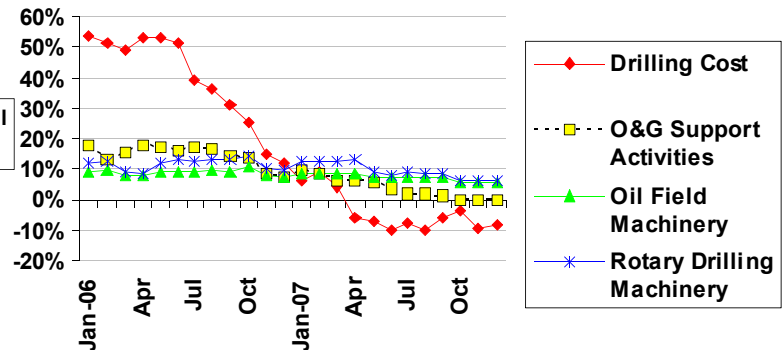
These conclusions are consistent with a recent EnCana presentation on the 2008 outlook for US operations. EnCana projects US drilling and completion cost inflation will range from 0% to 5%.

It is important, however, to remember that moderating cost inflation expectations can be undone by (1) any significant increase in industry investment plans and/or (2) spreading inflationary pressures from other sectors of the global economy.

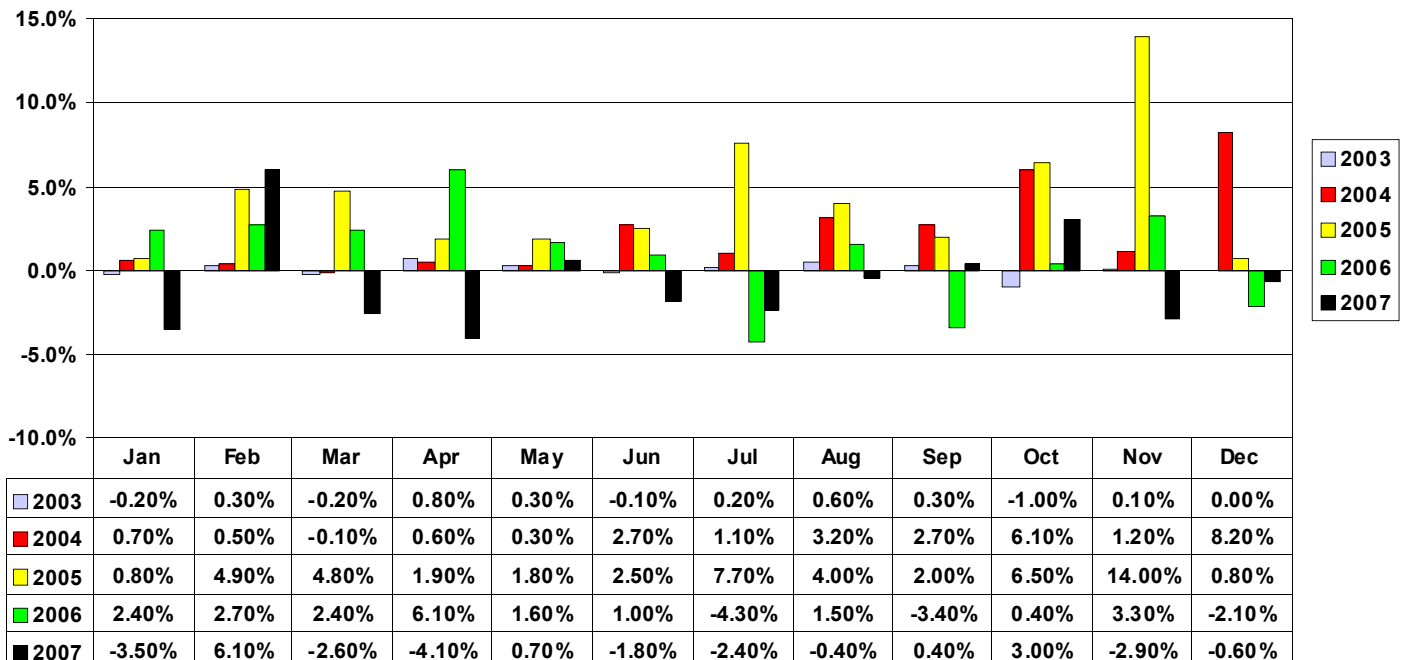
**Tubular Steel Products Price**



**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%	-7.0%	-9.8%	-7.9%	-9.8%	-6.1%	-3.5%	-9.6%	-8.1%	-4.1%