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MUSINGS FROM THE OIL PATCH

June 13, 2006

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Note: *Musings from the Oil Patch* reflects an eclectic collection of stories and analyses dealing with issues and developments within the energy industry that I feel have potentially significant implications for executives operating oilfield service companies. The newsletter currently anticipates a semi-monthly publishing schedule, but periodically the event and news flow may dictate a more frequent schedule. As always, I welcome your comments and observations. Allen Brooks

The Kinder Morgan Buyout Message

Taking Kinder Morgan private would represent the second largest management buyout after the 1989 purchase of RJR Nabisco

On May 29, Wall Street was surprised by the announcement from Kinder Morgan, Inc. (KMI-NYSE) that its management, along with several directors and a group of private equity funds, had made an offer to buy the company and take it private. The transaction is valued at about \$21.8 billion based on equity of \$7.3 billion and debt, new and assumed, of about \$14.5 billion. This would represent the second largest management buyout after the 1989 purchase of RJR Nabisco by private equity firm Kohlberg Kravis Roberts in a \$25 billion deal.

The cash purchase price of \$100 per share offered for Kinder Morgan represented an 18.5% premium over the closing price of the shares on May 26. More important, it approximates the price at which the shares traded briefly in January of this year, which represented an all-time high. Following disclosure of the offer, the shares traded above the offer-price reflecting investor and analyst views that a higher bid might be forthcoming from a competitor, or a higher purchase price could be negotiated by the special committee of Kinder Morgan's board. Prices in the \$105-\$110 range have been suggested as being potentially the final transaction value range.

Rich Kinder is, in our view, one of the smartest energy investors out there

Kinder Morgan is headed by Rich Kinder. In our view, one of the smartest energy investors out there. Kinder was a key management partner with Ken Lay in the early days of building Enron Corp. Kinder left Enron in 1997 when he was not selected president, essentially losing a power struggle over the company's direction. Kinder teamed up with partner Bill Morgan and brought with him about \$40 million of Enron Products pipeline assets he secured as part of his separation from Enron. This was one of the early and key assets in the construction of Kinder Morgan. A major transforming event for the company was the merger of Kinder Morgan with KN

Kinder Morgan is one of the largest midstream energy companies in North America

Energy, Inc., a significant pipeline company, in October 1997.

Today, Kinder Morgan is one of the largest midstream energy companies in North America. It owns and operates more than 40,000 miles of natural gas and petroleum transportation pipelines, services 1.1 million natural gas distribution customers and operates 150 petroleum terminals. Kinder Morgan's principal business segments include NGPL, a large interstate natural gas pipeline; the General Partnership of Kinder Morgan Energy Partners, L.P. (KMP-NYSE), a master limited partnership, through which Kinder Morgan receives significant cash distributions; retail natural gas distribution, which provides sales and services to approximately 240,000 residential, commercial, industrial and agricultural customers in Colorado, Nebraska and Wyoming; and Kinder Morgan Power Company, which has built and holds a preferred interest in a 550-megawatt natural gas-fired power plant in Jackson, Michigan. Kinder Morgan also owns an interest in three plants in Colorado; Terasen Gas, which provides natural gas sales and services to approximately 892,000 retail customers in British Columbia; and Kinder Morgan Canada, which transports approximately 2.7 million barrels per day of refined petroleum products and crude oil through 13,000 miles of pipeline to Western Canada.

Kinder is being joined in the bid by co-founder Bill Morgan, current directors Fayez Sarofim and Mike Morgan, and senior management. Additionally, private equity funds and affiliates of GS Capital Partners, AIG Global Investment Group, The Carlyle Group and Riverstone Holdings are helping to provide the equity required to finance the transaction. The bidding group also has received a "highly confident" letter from Goldman Sachs Credit Partners, L.P. that it can raise the \$14.5 billion in funded indebtedness that is part of the financing package.

We believe that the fundamentals underlying this transaction have important messages for energy investors

The conventional view on Wall Street is that this buyout represents an opportunistic move by Kinder, et al, to capitalize on a miss-priced stock. There have been suggestions made on numerous business shows by energy analysts and M&A specialists that they would expect Kinder Morgan to return to the public market within the next two years at a favorable gain for the private shareholders. We take a contrary view and believe that the fundamentals underlying this transaction have important messages for energy investors.

First, and it goes without saying, Kinder and his management team will be out from under the public microscope. Since the company may still have some public debt, it will not be relieved of Sarbanes Oxley and periodic filing requirements, but quarterly earnings calls and investor presentations will be a thing of the past. Second and possibly much more important for management, Kinder Morgan will not have to worry about playing the quarterly earnings game with Wall Street. How to build an energy company while making sure not to disappoint analysts and investors with earnings shortfalls is a tremendous undertaking.

As a private company, Kinder will be able to make bets on energy market trends with significant long-term earnings potential that otherwise might create immediate earnings dilution

For a smart, long-term energy investor, not being in the public arena, as long as the company has access to capital, provides him much greater flexibility in building a company. As a private company, Kinder will be able to make bets on energy market trends with significant long-term earnings potential that otherwise might create immediate earnings dilution. We think this flexibility is a major motivating factor behind the bid to take Kinder Morgan private, especially when we look at who will be partnering with Rich Kinder. The directors and senior managers are long-term energy participants. But more significant is that the private equity firms are all knowledgeable and experienced energy investors with substantial capital funds available to contribute in future transactions.

Another consideration in the transaction is the underlying view of energy markets and North American opportunities. We believe that Kinder Morgan's two most recent significant investments suggest that Rich Kinder believes energy markets are entering a period of significant restructuring. This restructuring will impact both the domestic energy business, and international markets, too. Let's take a look at these two moves.

Last year, Kinder Morgan purchased Canadian based Terasen Inc., a pipeline transportation, natural gas retail distribution business and a water company. The water company was subsequently sold as its business did not fit Kinder Morgan's business model or expertise. The retail gas distribution business serves customers in British Columbia and is an attractive cash flow business. The key asset in the acquisition, however, was the petroleum pipeline business that moves petroleum products and crude oil through Western Canada. This pipeline can be expanded to move some of the projected increase in oil output from the Canadian oil sands deposits.

The key to successful development of the Canadian oil sands is a sustained global oil price above \$40 per barrel

As oil sands volumes increase, more pipeline capacity will be needed to move the production to the U.S. and to Canada's West Coast for export to China and elsewhere. The key to successful development of the Canadian oil sands is a sustained global oil price above \$40 per barrel. As oil companies have gained increased confidence that world oil prices have entered a new paradigm of pricing, they have stepped up their investment in this non-conventional North American oil resource. The most recent company to act on this view is Royal Dutch Shell (RDS.A-NYSE) that has committed significant funds to the development of new leases.

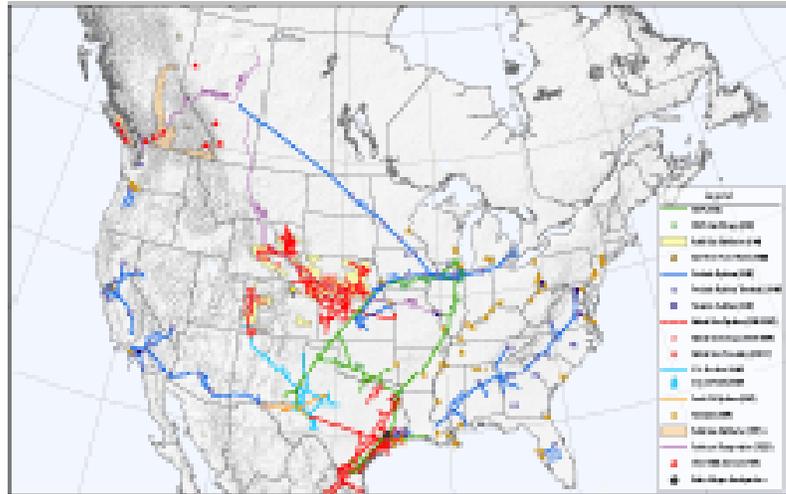
The Terasen oil pipelines come down from the oil sands and conventional oil producing regions of Western Canada into the western states of the U.S., an area that is struggling to find oil transportation capacity to handle its growing output. The Canadian oil lines also extend to that country's West Coast.

The impact of \$70 per barrel oil has stimulated substantial oil drilling and growing output in the Rocky Mountain states of Wyoming, North Dakota and Montana. As a result, this market is short of pipeline

Wyoming crude oil sold for as much as \$12 per barrel less than the world oil price

capacity and it lacks adequate refineries, which has contributed to a sharp price discount for this new oil supply. Within the past several months, crude oil in Wyoming sold for as much as \$12 per barrel less than the world oil price. More pipeline capacity should close that price gap and, importantly, would likely stimulate additional oil exploration and development.

Exhibit 1. Kinder Morgan Assets



Source: Kinder Morgan

The second big investment move by Kinder Morgan is its joint venture with Sempra Energy (SRA-NYSE) to build the Rockies Express Pipeline to move natural gas output from Wyoming to Ohio. At its terminus, the pipeline will meet the gas pipeline network that distributes gas throughout the Midwest and Northeast regions of the country. The \$4 billion project is on a fast track and will be important in adding to gas transportation capacity to a market that is currently underserved. The lack of adequate gas pipeline capacity from the Rocky Mountains has contributed to producers being forced to sell their output at discounted prices. Just as for the crude oil market, more pipeline capacity should boost prices and stimulate gas drilling and production.

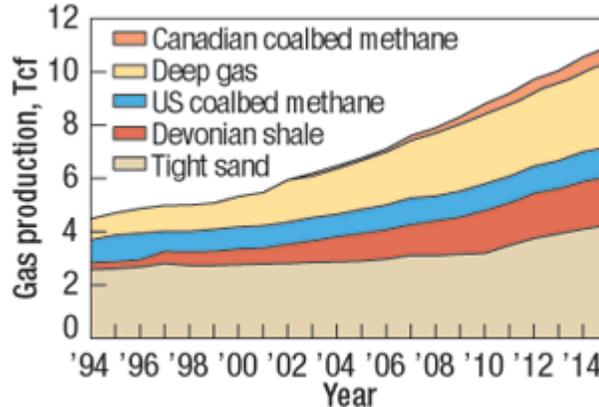
Unconventional gas production have been able to offset declines in conventional onshore and Gulf of Mexico gas wells

A critical consideration about increased gas output from the Rockies is that much of it is, and will be, unconventional gas, suggesting that it is more costly to exploit. At the recent IHS Energy User Forum, there was a session about unconventional gas plays in the United States. The analysis concluded that unconventional gas production has been able to offset declines in conventional onshore and Gulf of Mexico gas wells, but that resource may not be able to continue to play this role in the future. The primary reason is that conventional and GOM wells are beginning to experience steeper decline rates that unconventional gas output increases will not be able to offset.

The problem for unconventional gas is that these resources require

more challenging drilling and specific completion techniques that make the plays more sensitive to gas prices. At the present time, unconventional gas resources are producing about 8 Bcf/d of gas supply and growing. The challenge is how fast we can open up additional unconventional gas resources that are scattered across the United States and in Canada.

Exhibit 2. Unconventional Gas Production

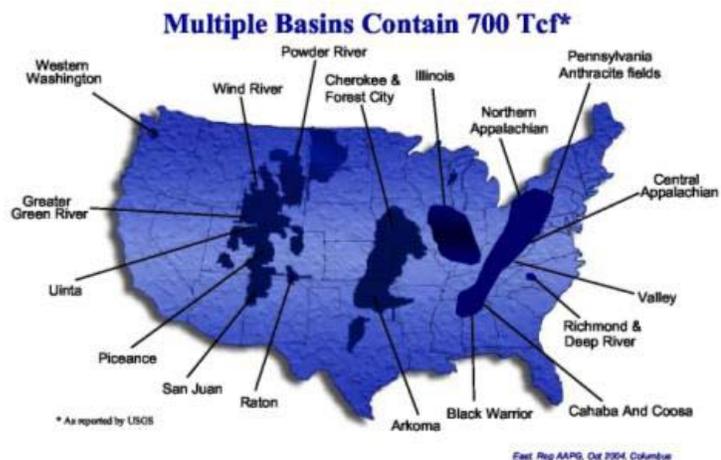


Source: EIA

IHS points to a declining trend in per well average output along with rising drilling costs as signs of a problem

IHS believes that current high natural gas prices have stimulated aggressive drilling. They point to a declining trend in per well average output, along with rising drilling costs that they estimate are rising at anywhere from 8% to 25% per year, as signs of the problem in counting on this resource to solve our domestic gas shortfall. IHS suggests that the future for known unconventional gas plays is not particularly bright. They believe that coal bed methane (CBM) production possibly reached a plateau in late 2004. They point to declining new well drilling activity in the San Juan basin as an

Exhibit 3. U.S. Coal Bed Methane Resources



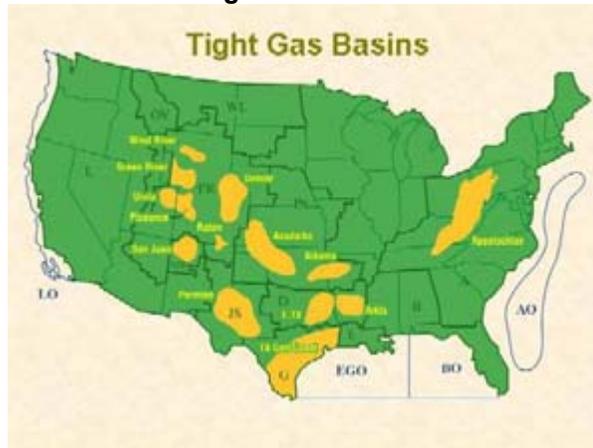
Source: EIA

example of this CBM plateau. IHS projects that fractured shale

CERA projects about a 1.2 Bcf/d decline in North American gas supply by 2010

plays possibly may plateau in 2008 while tight gas sands plays could plateau in 2007. This outlook fits with CERA's view that based on current drilling trends, by 2010 Canada's gas output will climb by about 1 Bcf/d while the U.S. will experience a 2 Bcf/d output fall. Therefore, CERA projects about a 1.2 Bcf/d decline in North American gas supply that will require increased LNG imports to offset the shortfall.

Exhibit 4. U.S. Tight Gas Resources



Source: EIA

Exhibit 5. U.S. Gas Shale Resources



Source: EIA

North America will need to have higher natural gas prices to develop marginal supplies

The significance of CERA's analysis is that North America will need to have higher natural gas prices to develop marginal supplies. How high this new natural gas floor price needs to be will depend partly on the price of LNG supplies. Another consideration will be whether certain current gas-consuming markets elect to shift to other fuels. Despite how the North American natural gas market may evolve, the likely outcome is for higher sustained prices. The unknown is exactly when the new higher prices become well established. We believe faith in this higher price environment is behind the long-term investment bets Kinder Morgan wants to make, and being a private company may facilitate those deals.

We believe Rich Kinder believes energy markets are overly bullish and are poised for a fall opening up acquisition opportunities

A final aspect of the move to take Kinder Morgan private may be the timing. Why now? We believe the answer is that Rich Kinder believes energy markets are overly bullish and are poised for a fall. An energy market correction could come from any set of events. Fundamentally, the global supply of both crude oil and natural gas appears adequate, and more than enough to push prices lower. A commodity price correction will cause energy equity prices to retreat. This correction could present significant investment opportunities for Kinder Morgan, especially if it doesn't have to justify the near-term earnings impact to Wall Street. Being a private company with sophisticated investor partners would give Kinder Morgan the ability to make acquisitions that would create a more powerful and profitable company in the future, even if it hurt earnings in the near-term.

To us, the message of the Kinder Morgan management buyout is both a statement about the positive long-term outlook for energy markets and the risk of a significant near-term energy market correction. Depending upon your investment time horizon, this message is either good news or bad news. But like energy investing in general, it won't be boring.

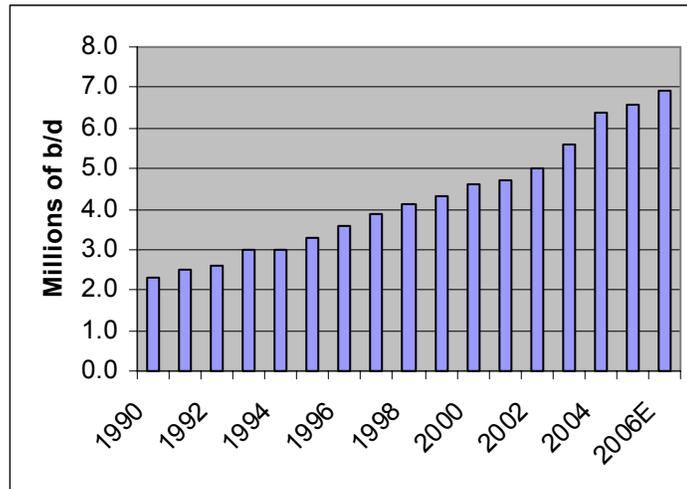
How Healthy Is China's Oil Demand?

The working assumption for oil market forecasters is that the amazing economic performance record of China will continue

The working assumption for oil market forecasters is that the amazing economic performance record of China will continue; driven by industrial expansion and rising living standards – new manufacturing plants, larger homes with appliances and more automobiles – that will translate into healthy energy and oil demand growth. We are familiar with the dramatic oil demand growth in 2004 as China's economic expansion outstripped its electricity generation capability. As a result, China saw huge numbers of portable generators installed that were run by diesel and gasoline to enable industries and consumers to protect against power black outs. Power plants fueled by hydrocarbons – oil, gas and coal – ran at very high utilization rates as new power plant construction, especially for hydroelectric and coal plants, lagged. Low retail gasoline and diesel fuel prices and subsidies for refined product exports further stimulated oil demand in China.

Starting in 2005, the Chinese government moved to slow its economic growth

Starting in 2005, the Chinese government moved to slow its economic growth by cutting fuel subsidies and restricting exports of refined products. Furthermore, the completion of new electric generating plants reduced the need for power-augmenting portable generators. As a result, oil demand growth in 2005 was substantially lower than 2004, and if one believes the Chinese official statistics, it was flat or down slightly.

Exhibit 6. Chinese Crude Oil Demand

Source: IEA, PPHB

Three reports by international financial firms have been issued on the health of the Chinese banking system

An old concern about the health of the Chinese economy has recently surfaced – bad loans. The issue of nonperforming loans (NPLs) in the Chinese banking industry has been of concern for a number of years. Recently, three reports by international financial firms have been issued, and a fourth issued and subsequently withdrawn, on the health of the Chinese banking system that are raising questions about the country's future economic challenges.

Mr. George Friedman of Stratfor has just authored an interesting report on the subject. In it he writes: "What is important here is not that China has a serious problem with bad loans in its banking system. That's old news. What is important is that mainstream analysts in the West now are taking official notice of it. The wide divergence between the Western perception of Chinese economic health and the realities of China's economy is beginning to close. There will be consequences to that."

The issued and subsequently withdrawn report was prepared by the international accounting firm of Ernst & Young. The other reports came from PricewaterhouseCoopers, McKinsey Global Institute and Fitch. Reportedly, Moody's Investor Service also is preparing a report. These reports are critical of the magnitude of the NPL problem and how the Chinese government and its banking system are handling them.

The problem is that growth and size don't necessarily tell us much about an economy's health

Friedman's thesis begins with the universal assumption that China's economy is booming. The problem is that growth and size don't necessarily tell us much about an economy's health. He points to the U.S. economy of the Great Depression and Japan's economy of the 1980s. Many of China's bad loans were made for political reasons and to maintain social stability. A significant volume of the stepped up lending in the first part of 2006 was to keep bad loans afloat, rather than to support further economic expansion.

The government wants to slow certain sectors where they fear bubbles emerging, but it is also trying to keep the economy hot in order to manage the financial problems

Since the key to the Chinese economy is not domestic consumption but exports, the official government policy of cooling its economy creates a serious challenge. The government wants to slow certain sectors where they fear bubbles emerging, but it is also trying to keep the economy hot in order to manage the financial problems. Friedman's conclusion is that the emergence of this spat of reports on the Chinese banking system's health, or lack thereof, marks a turning point. He believes the dynamics of the Chinese economy are shifting. "The debt issue represents a deep structural problem that China will either deal with – as South Korea did – or not, as Japan did not." Japan experienced a decade of economic stagnation as a result of its handling of its banking problems.

In the near-term, oil imports will probably grow faster rather than slower, that is until the bills come due

According to Friedman, "...the huge structural imbalance of China, which these debts represent, must be rectified. And that process, as in all such matters, will be painful." Friedman believes that China will err on the side of keeping exports growing, and growing substantially, in order to try to buy time to address its structural problems. If so, then in the near-term, oil imports will probably grow faster rather than slower, that is until the bills come due, which the government cannot pay. At that point, oil markets could witness a significant Chinese economic retrenchment with negative implications for oil demand, à la the Asian crisis of 1998.

OPEC Struggles with a Well Supplied Market

Just over a week ago, oil ministers representing the members of the Organization of Petroleum Exporting Countries (OPEC) assembled in Caracas, Venezuela for what quickly became the Hugo Chavez show, otherwise known as the OPEC 141st (Extraordinary) Meeting. Reportedly Venezuela spent \$20 million dollars more than the normal cost of an OPEC meeting at its headquarters in Vienna, Austria to host the meeting. As the MasterCard commercial goes: Hosting an OPEC meeting - \$20 million. Providing a global platform for President Hugo Chavez – priceless!

Chavez, facing a re-election vote set for December 3, used the OPEC meeting to enhance his credentials as a price hawk that uses oil profits to help the poor

Chavez stepped into the presidency of Venezuela in 1999 when global oil prices were at a low due to the fallout from the Asian currency crisis. His first move on the world stage was to rally support in OPEC to curb production leading to a recovery in oil prices. Since then, Chavez has been a cheerleader for OPEC to restrain its production while contributing sufficient market chaos by his words and actions against oil companies that have contributed to the oil price risk premium. Chavez, facing a re-election vote set for December 3, used the OPEC meeting to enhance his credentials as a price hawk that uses oil profits to help the poor.

The meeting provided an international stage for the Venezuelan president to expound on his populist ideas about what host producing countries should do to control their resources and extract greater economic rents from the oil and gas companies working there. Chavez has used his position to encourage fellow leftist

leaders of neighboring South American countries to exact greater retribution from the oil and gas companies extracting their resources. Riding this wave of populism, Chavez protégés such as Evo Morales in Bolivia and Nestor Kirchner in Argentina have ascended to power and have begun to enact this leftist agenda. In Bolivia, Morales has moved to nationalize Bolivia's natural gas industry, which is more than other leaders have done. Chavez has threatened to do this, but so far he has only rewritten oil production sharing agreements claiming to bring them in line with the latest hydrocarbon law. He has also increased energy company taxes to help fund his government social programs.

Chavez's political power may be peaking, however, as his support for Ollanta Humala in the recent Peruvian election seems to have assured conservative Alan Garcia's victory. In Colombia, Chavez arch foe Alvaro Uribe was overwhelming re-elected president, while Chavez was told to butt out of the upcoming Nicaraguan election where he has been supporting former Sandinista leader, Manuel Noriega. While Chavez would like to see leftist Party of the Democratic Revolution (PRD) candidate Andrés Manuel López Obrador defeat National Action Party standard bearer Felipe Calderón, a conservative supported by northern Mexican businessmen, the two are locked in a dead heat in the polls. The third candidate, Roberto Madrazo of the PRI (Institutional Revolutionary Party), the party of current president Vicente Fox, is trailing. Chavez has been in a vicious feud with Fox.

OPEC members are more concerned about the impact of continued high oil prices on future oil demand, than trying to boost prices higher by cutting production

Despite the surge in global oil prices, which is producing a flood of cash for the Venezuelan government and its national oil company, PdVSA, the country's oil production still lags its OPEC quota. Speaking before the OPEC meeting, Chavez said that world markets were oversupplied and called for a reduction in OPEC production, which was rejected. OPEC members are more concerned about the impact of continued high oil prices on future oil demand, than trying to boost prices higher by cutting production. They could be in for a price shock should geopolitical events ease or global oil demand fall. In the short term, OPEC members are aware that a number of new major offshore oil fields located in non-OPEC countries will soon begin producing. As a result, the call on OPEC production is expected to fall during the balance of 2006 before climbing in 2007. If high oil prices cause further economic weakening, OPEC's production will be most at risk to reduced oil demand unless world oil prices decline and stimulate consumption.

OPEC has become a bystander watching rallying oil prices being pushed up by political forces

What we found most interesting about the OPEC meeting was a statement made by Qatar's Oil Minister Abdullah al-Attiyah before the conference began that OPEC has become a bystander watching rallying oil prices being pushed up by political forces. While his statement was more directed at the inability of OPEC to influence world oil prices – drive them lower – it fits our theory that consuming countries are now controlling oil prices because of the lack of meaningful surplus oil production capacity. The consumers will buy what they want and need depending upon the price, and if it is too

high, they may just consume less. Attiyah's statement actually revealed great insight into the market frustrations of OPEC members. Last Monday, *The Wall Street Journal* published a story based on an interview with Saudi Arabia's Oil Minister Ali Naimi in which he disclosed that Saudi had cut its production by 300,000 barrels per day (b/d) because buyers were not interested. Naimi's comments went beyond the prior disclosure that Saudi had spare capacity that was not being purchased due to its poor quality (heavy and sour). Naimi is certainly frustrated by continued high oil prices in the face of his country's lowered production. He must be wondering if the principals of supply, demand and price that he learned in Economics 101 have been revised.

OPEC's acting Secretary General Mohammed Barkindo said that it was unclear what price level would cause the world's economy to falter

Another statement from the OPEC meeting reflected on the impact of these high prices on oil demand. According to OPEC's acting Secretary General Mohammed Barkindo, "There's no impact from current oil prices on growth." However, he said that it was unclear what price level would cause the world's economy to falter. Saudi Arabia's experience would suggest something to the contrary. Maybe Barkindo should also have consulted Federal Reserve Chairman Ben Bernanke who said in a speech early last week that high oil prices have caused the U.S. economy to slow.

The day following Bernanke's speech, which crashed world stock markets because of its concern about accelerating inflation, the U.S. Energy Information Agency (EIA) released its latest short-term energy forecast that called for a hike in its demand growth for the second quarter and all of 2006, along with a strong demand increase for 2007. The juxtaposition of the Bernanke and EIA comments suggest that people in Washington are looking at wildly different data. Who's right? Only time will tell.

An Upside Revision to Energy Demand Growth

The EIA calls for an increase in its oil demand forecast for 2006 of 100,000 b/d to an annual gain of 1.7 million b/d, or a 2.0% increase

After a number of months of downward reductions in oil demand forecasts, the EIA has countered that trend in its recent (June 2006) short-term energy monthly report. The report, released June 6, calls for an increase in its oil demand forecast for 2006 of 100,000 b/d to an annual gain of 1.7 million b/d, or a 2.0% increase. The EIA has a healthy 1.9 million b/d increase, a gain of 2.2%, penciled in for 2007. The 2007 EIA forecast appears to be essentially flat or very slightly lower than its May forecast. The boost in demand by the EIA puts the agency's projection well above both OPEC's and the International Energy Agency's (IEA's) latest forecasts. They are projecting annual demand gains of 1.4 million b/d (+1.7%) and 1.25 million b/d (+1.5%) for 2006, respectively.

We were surprised to see this increase projected by the EIA as most economic forecasts are calling for slowing global economic activity, and especially in the U.S. and Europe, which are the major drivers for energy demand outside of Asia and China. In the Pacific region, governments are increasing energy prices by reducing fuel

subsidies, or actually increasing retail prices to attempt to slow demand growth.

The upward demand revision may be statistically, rather than fundamentally driven

The EIA's explanation appears to be that its revision of historical demand data for non-OECD countries resulted in its 2004's demand estimate being raised by 200,000 b/d. The revised demand figures pointed to stronger consumption in the Former Soviet Union and non-OECD Asian countries, excluding China. According to the EIA, there were a few countries with lower demand, but it did not identify them. After plugging in the new baseline demand growth estimate and maintaining the same growth projections for 2005, 2006 and 2007, the EIA arrived at its new, higher global demand figures. In hindsight, it appears that the upward demand revision may be statistically, rather than fundamentally driven. Could it mean that in the EIA's July report there will be a reduction in demand to bring its forecast more in line with the demand growth projected by the other major forecasting groups?

An interesting part of this latest EIA report is its analysis of the impact on Gulf of Mexico crude oil and natural gas production along with refinery operations in the region during hurricanes in 1960-2005. By using regression analysis of past data, the EIA was able to develop two forecasting models that largely explained the amount of shut-in production experienced during past storms. The EIA then used the recent National Oceanic and Atmospheric Administration (NOAA) forecast for tropical cyclones (storms) and the number of hurricanes for the 2006 season to estimate the potential for lost oil and gas production and refinery output. The range of forecasts calls for the shut-in of 0-35 million barrels of crude oil and 0-206 Bcf of natural gas. If one looks at the mean estimates of the forecasts for each of the EIA's two models, the potential shut-in volumes fall within the range of 9.8-14.0 million barrels of crude oil and 59.8-84.0 Bcf of natural gas. On a daily basis, the shut-in amounts range between 26,800-38,400 barrels of oil and 164-230 million Mcf of gas, respectively.

We have lost 162 million barrels of oil and 784 Bcf of gas as of June 1 from hurricanes Rita and Katrina, equal to about 30% and 31%, respectively, of a normal year of output from Federal offshore production

While these volumes are sobering, we should keep in mind that according to the Minerals Management Service (MMS) we have lost 162 million barrels of oil and 784 Bcf of gas as of June 1 from hurricanes Rita and Katrina. This lost oil and gas production is equal to about 30% and 31%, respectively, of a normal year of output from Federal offshore production. Also keep in mind, as we wrote in our last issue, that given the current volume of natural gas in storage and assuming normal summer temperatures, we have sufficient gas to absorb a similar loss in production as we experienced last year and still enter the heating season with more gas than we did last year. It is this condition that has caused natural gas futures prices to fall under \$6 per Mcf that has now become the latest justification for selling natural gas producer and oilfield service company stocks. This too shall pass, but in the mean time it is generating considerable heart burn.

Upcoming Natural Gas Price Crash Predicted

CERA said it expects October 31 North American gas storage volumes to reach 4.2 Tcf unless we experience a warmer-than-normal summer or significant gas supply disruptions due to hurricanes

Cambridge Energy Research Associates (CERA) issued a report last week in which it said that U.S. natural gas prices could decline “abruptly” this fall if portions of the nation’s gas storage system reach their operational limits. CERA said it expects October 31 North American gas storage volumes to reach 4.2 Tcf unless we experience a warmer-than-normal summer or significant gas supply disruptions due to hurricanes. This thought is neither novel nor new as we had previously commented on the potential for natural gas wells to be shut in this summer because of full storage. One would only shut in a producing gas well if the price for the product fell too far. CERA is suggesting by the balance of its comments that fall natural gas prices could head toward \$5 per Mcf causing a displacement of coal-fired power demand by gas-fired demand. That shift would support and help right the slumping gas market.

Last week, natural gas futures prices dropped below \$6 per Mcf that sent most of the oilfield service stocks crashing, especially those heavily levered to natural gas activity. Investors were extrapolating the year-low gas price as falling below the level supporting the current high level of gas drilling and production activity. As we pointed out previously, spot cash prices had fallen meaningfully below that \$6 trigger point, but that move hadn’t drawn investor attention. A critical issue for the North American natural gas market is the amount of storage capacity and the types of storage facilities.

Natural gas storage can account for as much as 30% of our daily supply during winter days

Natural gas storage can account for as much as 30% of our daily supply during winter days and plays an important role in meeting demand. Most of the gas storage facilities are in depleted reservoirs as opposed to salt caverns and aquifers. Each of these storage facilities has different capabilities, mostly having to do with their ability to efficiently accept gas injections and their ability to enable rapid withdrawals. Salt caverns appear to be the most efficient storage type as their gas can be recycled 4-12 times a year compared to only twice for depleted reservoirs.

As storage capacity fills up the volume of gas that can be injected into storage falls

The U.S. needs more gas storage capacity. A study done for the National Petroleum Council suggests a need for 700 Bcf of new storage between now and 2025 for North America. The INGAA Foundation says that 651 Bcf of new storage may be needed by 2020. We need the storage because current capacity is lower than most would like. Additionally, as storage capacity fills, the daily volume of new gas that can be stored falls. Likewise, withdrawal volumes are also inversely related to the amount of gas in storage. For example, North American injection capability is estimated to range from 33 Bcf per day when inventory is below 50% of working capacity, down to 15 Bcf per day or less when inventory is above 90% of working capacity. Withdrawal capacity ranges from 48 Bcf per day when inventory is at or above 60% of working capacity, down to 37 Bcf per day or less when inventory is below 20%.

As Federal Energy Regulatory Commission (FERC) Chairman Joseph T. Kelliher wrote in a December regulatory ruling, "Since 1988, gas storage has expanded only 1.4%, while demand has risen 24%." This would suggest that he recognizes the need for additional storage capacity. Last November, Chevron's gas business (CVX-NYSE) filed an application with FERC to build four salt cavern storage facilities in two locations holding a total of 6 Bcf of working gas. These facilities, if approved, would begin construction during 2006, with the first two ready for service in 2008 with the remaining ones activated in 2010. At that pace, it is difficult to see our working gas storage capacity, currently estimated at 3.8 Tcf, growing fast enough to meet the various projected needs.

Nigerian Kidnapping Sends Chill Through The Oil Industry

Somewhere between 3 a.m. and 5 a.m. local time on June 2, between 20 and 30 armed attackers on four speedboats kidnapped eight foreign oil workers from the 84-man crew of the *Bulford Dolphin* floating drilling rig, owned by the Dolphin Drilling subsidiary of Fred Olsen Energy and working for the Nigerian oil company Peak Petroleum approximately 40 miles off the Nigerian coast. The six Britons, one Canadian and one American oil workers were released two days later, little the worse for wear except for being obviously tired from the ordeal.

The usual suspect for the attack, the Movement for the Emancipation of the Nigerian Delta (MEND) did not claim responsibility. This was out of character as MEND usually claims credits for its attacks fairly quickly. Representatives of Fred Olsen Energy were reportedly in contact with the attackers trying to negotiate the workers release, but they did not disclose who the attackers were. After the kidnapped workers were released, there was no comment from government officials or Fred Olsen representatives as to who the perpetrators were or whether a ransom was paid.

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The significance of this attack for the oil industry is that it pushes the zone of potential violence in Nigeria substantially further offshore than it has been. The attack on an oil rig 40 miles offshore calls into question the previously-held consensus that water and distance would prevent ill-equipped onshore malcontents from disrupting Nigeria's oil sector. The Niger Delta region and Nigeria's shallow-waters have been the focal point for rebel attacks aimed at securing financial aid or stealing crude oil or gasoline for use or sale on the black market. Oil rigs located so far offshore were thought to be safe from the politically motivated violence waged by MEND against the oil industry and government.

The June 2 attack suggested a high level of planning and coordination among militants aimed at achieving political rather than economic goals. The attack occurred only hours after Nigerian President Olusegun Obasanjo, who was recently denied his bid for a

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third presidential term, conducted an international fleet review in Lagos in front of an assembly of foreign naval officials at the conclusion of a Seapower for Africa symposium. The timing of this attack is an embarrassment for the Nigerian navy, which has acquired in recent years a naval force to protect offshore rigs.

The skill in executing the attack creates concerns that even with an expanded and refurbished navy, Nigeria cannot guarantee the security of offshore oil rigs. Will this attack affect the decision of oil companies to position rigs in the Gulf of Guinea? We doubt it given the proliferation of high quality oil and gas reserves. Oil companies will now have to heighten their security efforts at a financial cost, but we doubt that anyone will pack up and leave. If that objective was the goal of the attackers, then they have probably failed. On the other hand, if the objective was to increase the operational risk of working in Nigeria's offshore waters and to show the vulnerability of the government and the navy, the attackers have probably succeeded.

Energy Bits

Russian Oil Production Heading Up

According to figures from the Russian Ministry of Industry and Energy, oil and gas production in the country increased in May. The ministry reported that crude oil and condensate production rose to 9.62 million b/d in May, a gain of 3.2% from last year and a 0.3% increase from April. The sequential production increase was equal to the prior monthly gain. Oil exports rose by 3.2% from last year to 4.76 million b/d. Natural gas output in May was up 4.1% from last year at 54.711 billion cubic meters. This recent performance is better than government officials had previously suggested would happen, but a couple of months do not confirm a definite change in direction for Russia's production outlook.

Northeast US Gas Shortage Predicted

In a new regulatory filing seeking approval to construct the Emera Brunswick pipeline, a shortage of LNG and pipeline capacity in the U.S. Atlantic Coast region was projected. The filing was seeking to construct a new 90-mile pipeline to carry 730 million Mcf/d of gas from the Canaport LNG terminal in St. John, New Brunswick to the Maritimes & Northeast pipeline that will eventually deliver it to Boston and surrounding regions. The line is expected to be in service by November 2008.

The filing projected that natural gas demand for the Atlantic seaboard region by 2010 should increase by 1.3 Bcf/d, leaving a shortage of 580 million Mcf/d of both LNG terminal and gas pipeline capacity even after the Emera Brunswick line is constructed. The filing also projected that incremental gas demand is expected to

reach 4.3 Bcf/d in 2020, 5.9 Bcf/d in 2025 and 7.6 Bcf/d in 2030.

It is interesting to look at what this forecast says about the U.S. natural gas market and the need for this region to seriously explore expanded pipeline capacity, more LNG receiving terminals and other energy supply sources. Over the period from 2010 to 2030, the annual increase in natural gas demand is projected to be on average slightly in excess of 300 million Mcf/d. The pace of the growth actually increases as we move from the early years to later years in the period. Whether this forecast will prod politicians to begin to address the NIMBY objections held by local residents to energy supply infrastructure investments in the region remains to be seen, but we doubt it will work that kind of magic.

India Raises Fuel Prices

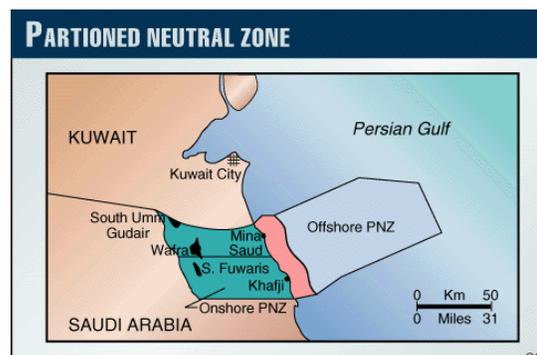
On June 5, in response to rising global oil prices, India raised retail gasoline prices by 9.2% and diesel prices by 6.6%. The hikes created substantial unrest.

Kuwait to Start New Natural Gas Production

Kuwait announced on June 7 that it will begin production from the Dorra natural gas field. Kuwait is conducting seismic over the field. This is an offshore field with disputed ownership with Iran. The field lies in offshore waters shared by Saudi Arabia, Kuwait and Iran. The disputed ownership comes as a result of competing and overlapping concessions awarded in the 1960s to an affiliate of BP plc (BP-NYSE) and Royal Dutch Shell.

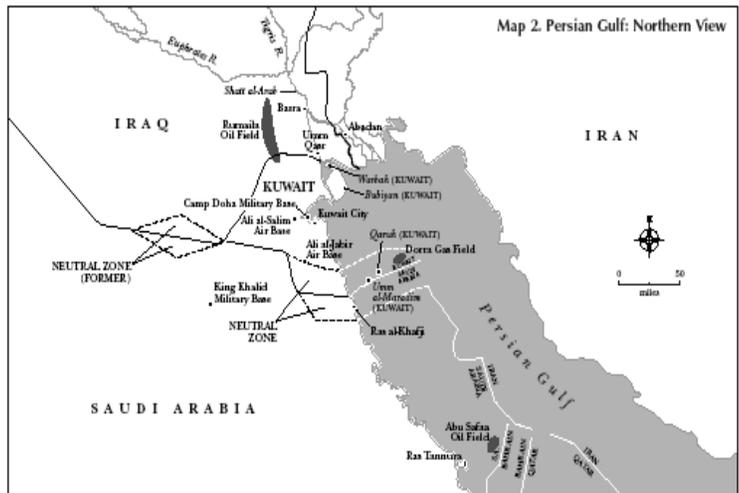
Kuwait anticipates producing 6.2 billion cubic meters annually from the “70 percent of the Dorra field that is not disputed by Iran.” This language is reminiscent of Kuwaiti statements in 1990 regarding production plans for the Ratga oilfield straddling the Iraqi-Kuwaiti border. (Iraq refers to the field as South Rumaila.) At the time, Baghdad cited Kuwaiti denials of Iraqi charges of slant drilling into the Ratga field as justification for Iraq’s August 1990 invasion of Kuwait that eventually started Gulf War I.

Exhibit 7. Shared Saudi and Kuwaiti Production Zone



Source: OGJ

Exhibit 8. Dorra Field Lies in Shared Waters



Source: Washington Institute

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