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MUSINGS FROM THE OIL PATCH

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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

What a Difference 1,000 Miles Makes

Our impression from the first day's drive was that traffic was extremely light

We just made our annual drive from Houston to our summer home in Charlestown, Rhode Island. The drive generated various observations – some of which reflect the conundrum the stock market is facing today. As is our usual practice, we leave on a Thursday in late July. Our objective is to reach our home on Saturday after our renters have departed. Our impression from the first day's drive was that traffic was extremely light and the crowds at restaurants, gasoline stations and rest stops were modest compared to last year's drive. The hotel we stopped at was fully-booked, but that may have had a lot to do with the fact we were close to a Tennessee tourist attraction, Lookout Mountain.

The second day's drive produced increased traffic and even a waiting line for dinner, but no problem finding a hotel room. Traffic on our third day was quite modest and only reflected the summer beach traffic in Connecticut and Rhode Island, but nothing out of the ordinary. The local gasoline stations in Rhode Island were packed with beachgoers, but again this is typical at this time of the year.

The Cracker Barrel in Alabama where we stopped for dinner had no line

My wife and I were surprised at how light traffic was on day one as we motored about 835 miles from Houston to just south of Chattanooga, Tennessee. The volume of truck traffic also was light, again a surprise based on last year's experience when it seemed we were constantly battling trucks. The rest stops and truck stops were not over-crowded, in contrast to last year when trucks overflowed onto both the on- and off-ramps. The McDonald's in Lafayette, Louisiana had a short waiting line at lunch time, but hey, it's an oil-related boom town and one would reasonably expect a line. Surprisingly, the Cracker Barrel in Alabama where we stopped for dinner had no line, and in fact had a partially empty dining room. At 6:30 pm that was a surprise - but a pleasant one.

On day two we confronted many more truck caravans and the rest stops and truck stops appeared more crowded

We did travel through areas hard hit by Hurricane Katrina. In Mississippi, we observed the damage done to the trees by the storm. We also drove by a series of fields chocked full of new, unused FEMA trailers, which made us mad about the waste.

On day two, truck and auto traffic increased as we drove further east. We confronted many more truck caravans and the rest stops and truck stops appeared more crowded. Auto traffic was heavier, too. When we stopped for dinner in Maryland, again at a Cracker Barrel, we were confronted with a 15-minute wait for a table in the dining room, but service was faster than the previous night. Maybe a waiting line energizes the wait staff.

By the time we were searching for a hotel room, we targeted Danbury, Connecticut, just over the New York State border. The Danbury Sheraton told us over the phone that they had plenty of rooms, which seemed true as other travelers kept arriving as we were checking in later. Too bad the hotel's computer system was malfunctioning. They had lost our reservation, made only a couple of hours earlier, but the front desk staff kept assuring us they had plenty of rooms. When they looked up their available rooms on a sheet of paper, the list seemed to go on and on and on. I'm not sure, but this hotel appeared to be more of a business hotel, given the concentration of corporate headquarters and financial institutions in the southern Connecticut region, which generates greater hotel traffic during weekdays than on weekends.

Gasoline prices increased as we traveled north and east, but that is normal. State taxes are greater as one drives northeast, a point we have commented on in previous articles. Our car uses premium gasoline and we paid mostly prices between \$2.989 and \$3.149 per gallon until we stopped late at night in New York where we paid \$3.589. The shock of that price didn't hit us until we purchased gasoline in Rhode Island, always an expensive area. Based on what we have seen so far, gasoline prices in Rhode Island range between \$3.079 and \$3.469, so the New York purchase marked a huge premium.

Despite high gasoline prices in Rhode Island, there doesn't seem to be much impact on auto traffic

Despite high gasoline prices in Rhode Island, there doesn't seem to be much impact on auto traffic at the stations. How much of that is influenced by the summer vacation traffic is difficult to say. But we must comment on the fact that we saw many more vehicles driving with their windows open, even with temperatures in the very high 80s and low 90s. Maybe these drivers have been reading the gasoline tips that suggest not using your car's air conditioning to save on fuel. What these articles fail to mention is that on highways, the aerodynamic drag from open windows more than offsets the fuel consumption from air conditioning.

We saw many more vehicles driving with their windows open, even with temperatures in the very high 80s and low 90s

We did observe an interesting statement about gasoline prices made by a new, shiny behemoth recreation vehicle towing a Hummer. I guess the owner was saying – I've got plenty of money and gasoline prices aren't going to make me change my lifestyle!

It's hard to know whether the economy is strengthening or weakening

I'd say the economy was weakening based on the traffic patterns of our drive

So what observations about energy markets and the economy can we make based on our travels? Just as economists and investors are struggling to determine, it's hard to know whether the economy is strengthening or weakening. Traditionally we have used truck traffic as a gauge of economic activity, but the fact we had to go almost 1,000 miles northeast of Houston before encountering significant truck traffic makes us wonder about the economy's health. If I had to bet, I'd say the economy was weakening based on the traffic patterns of our drive and especially my sense that the second day's traffic, although heavier than the first day, was not quite as heavy as last year. That conclusion is not encouraging, especially following the release of weaker than expected second quarter gross domestic production and July monthly labor growth and the jump in the July unemployment rate.

Creating Value Is What's Important

We have been impressed with the second quarter earnings performance of energy companies and most of their outlook statements were positive

Second quarter earnings reporting season is drawing to a close. We generally have been impressed with the earnings performance of the energy and oilfield service companies and most of their outlook statements were positive, albeit acknowledging near-term weakness in North American natural gas prices and lower hurricane-season-impacted offshore drilling rig day rates. On some days, Wall Street was duly impressed by the reported results, while on others it was decidedly negative.

We have read most of the earnings releases and have listened to many of the earnings conference calls with analysts and investors. Our use of conference call replays has increased as the shorter earnings reporting time has piled calls on top of each other. In addition, our drive up north also cut into listening time. We want to single out a couple of company reports for their implications on how to create shareholder value.

Nabors Industries said "there appears to be two distinct rig markets, the one which actually exists and the one that the majority of analysts expect to develop out of the current gas storage overhang"

As natural gas prices weakened during the late spring and early summer, and following the ruckus caused by Schlumberger Ltd.'s (SLB-NYSE) CEO Andrew Gould's and Weatherford International Ltd.'s (WFT-NYSE) CEO Bernard Duroc-Danner's comments about the outlook for the North American oilfield service market for the next 12 months in light of weak gas prices, Gene Isenberg, chairman of Nabors Industries Ltd. (NBR-NYSE) is to be commended for tackling the issue head-on in its earnings press release. The release stated that "there appears to be two distinct rig markets, the one which actually exists and the one that the majority of analysts expect to develop out of the current gas storage overhang." This statement clearly identified the challenge for investors and analysts. They have one foot firmly planted in the world of the drilling industry (existing rig market) and one foot in the world of Wall Street (the expected market), which is all about perception. The ability to balance those two worlds is key for making money in these stocks.

There is an old oilfield service investment expression that says the

When exploration and production companies talk about plans to drill through periods of commodity weakness, they often suffer

service companies are the last to know when the oil and gas companies stop spending. The reality is that it is the suppliers to the service companies who are truly at the end of the information line. On the other hand, we know that when exploration and production companies talk about plans to drill through periods of commodity weakness, they often suffer. We refer to it as looking across the valley and then stepping in a hole. The outcome is negative for oilfield service company stocks. It is this perspective that shapes investor attitudes toward the oilfield service stocks because even while business is good and customers assure they have plenty of work ahead, they often change their mind with the snap of their finger. Those violent activity changes are impossible to forecast, even though Wall Street tries to call them in advance. Wall Street's nervousness about oilfield service stocks is making them highly volatile. Traders, who represent most of the investors in these stocks, love that volatility!

We have been puzzled by Wall Street's lack of praise for managements who are exercising financial discipline and buying their shares

We have been puzzled by Wall Street's lack of praise for managements who are exercising financial discipline and buying their shares with their surplus cash flow rather than allowing cash to pile up on the balance sheet and/or using it for acquisitions. Two companies stand out in our mind for their performance and Wall Street's distasteful attitude. One is OMI Corporation (OMM-NYSE), an international oil tanker company, and the other is Core Laboratories NV (CLB-NYSE), a reservoir analysis oilfield service company.

The oil tanker industry is cyclical and has had periods of truly lousy financial performance. Over the past five years, more financially-responsible managements have assumed control of the publicly traded companies in this sector. After an incredibly strong tanker charter market in 2004, 2005 was not particularly good. So far, 2006 is turning out to be stronger. The 2005 market encouraged managements to focus on effectively managing their capital, and to start executing strategies to return excess capital to the shareholders. Virtually all shipping companies have instituted dividends and many are buying back their shares. One company, General Maritime Corporation (GMR-NYSE), several years ago developed a strategy of creating shareholder value through payment of a significant amount of cash flow in the form of dividends. In an era of low interest rates, GMR's stock price benefited from its high yield. Currently, the company is paying an annualized dividend of \$2.64 per share giving the shares a 7.2% current yield.

Since the start of 2005, OMI has repurchased over 20 million shares, or about 25% of its outstanding shares

In contrast, OMI is only paying a \$0.40 annual dividend, providing a low 1.8% yield. The big difference is that OMI has been aggressively paying down its debt, disposing of older ships and eliminating the associated debt and buying back its shares. Since the start of 2005, OMI has repurchased over 20 million shares, or about 25% of its outstanding shares as of January 1, 2005. The strategy has helped OMI to achieve about a 9.3% return on its assets and a 42% return on its shareholders' equity. A side benefit of its strategy is that OMI now has the youngest tanker fleet in the

The six-tanker-company index created by Bloomberg is currently trading at an 8.3x price/earnings ratio and a 6% current yield compared to the S&P 500, which is trading at a 16.8x P/E and a 1.9% yield

The analysts wanted to know why management didn't raise OMI's dividend substantially to generate a higher current yield on the stock

industry, or at least among the publicly-traded tanker companies. However, all of this capital discipline has not excited Wall Street as investors currently value OMI's stock at only 4.8x trailing 12-month earnings per share and 11.5x estimated 2007 EPS.

On last Friday's earnings conference call for oil tanker company Tsakos Energy Navigation Ltd. (TNP-NYSE), management pointed out that since its initial public offering in March 2002, TNP has achieved an average annual return to shareholders of 35% compared to 4.2% for the Standard & Poor's 500 index. In just the latest 12 months, the company has produced a 24.3% total return to shareholders, which was more than 20 percentage points above the return of the S&P 500. They also pointed out that the six-tanker-company index created by Bloomberg is currently trading at an 8.3x price/earnings ratio and a 6% current yield compared to the S&P 500, which is trading at a 16.8x P/E and a 1.9% yield.

When OMI reported its earnings, the questions from the analysts were enlightening for their lack of insight and respect of management's disciplined approach to business and capital discipline. The analysts wanted to know why management didn't raise OMI's dividend substantially to generate a higher current yield on the stock. The stock buybacks were dismissed as a meaningful way to create shareholder value. We wonder if this view was embracing GMR's dividend strategy. OMI management responded that paying out the bulk of earnings in dividends could make them unstable while also reducing the corporation's flexibility to take advantage of stock market opportunities to create value through aggressive stock repurchases or highly accretive acquisitions. For all of the angst of the analysts, the performance of OMI compared to GMR shows OMI's strategy is rewarding its shareholders.

Exhibit 1. OMI Batters Dividend-Focused General Maritime



Source: Big Charts; PPHB

The stock market is seriously worried about the cyclicity of the oil tanker business and the potential for the industry to overbuild its

Broad global oil supply and demand trends suggest meaningful growth in the volume of global oil transported by ship

fleet and undercutting current charter rate strength. While these are valid concerns, from a big picture point of view, the world's energy consumption growth is occurring in regions that simultaneously are experiencing significant declines in domestic production. That means more oil will need to be imported to these countries. Furthermore, the world refining industry is likely to grow in geographic regions adjacent to oil production and not consumption. Thus more refined product will need to be imported. These broad global oil supply and demand trends suggest meaningful growth in the volume of global oil transported by ship.

Core Labs determined that sticking to its knitting and working to boost profit margins, while also tightly controlling capital expenditures, was the best strategy to pursue, and it set out to execute this plan

As Core Labs reported another quarter where earnings per share were well above expectations, analysts continue to demonstrate a lack of understanding of the company's business and management's growth strategy. In past periods, there was some legitimacy to the questions and doubts. In the late 1990s, CLB made several acquisitions that were ill-advised and subsequently underperformed and/or created earnings challenges. Management then compounded these mistakes with further acquisitions designed to help solve the initial business problems. Increased management focus on trying to solve these problems contributed to a lack of attention to ongoing operations that led to an accounting problem in Mexico that blindsided both management and shareholders.

After assessing its businesses and examining their market outlook, and recognizing that the company's rapid growth outran its management capability, it became clear that shedding the poor performing units made more sense than trying to fix them (if they could be fixed). Management determined that sticking to its knitting and working to boost profit margins, while also tightly controlling capital expenditures, was the best strategy to pursue, and it set out to execute this plan for the benefit of shareholders.

Exhibit 2. Core Labs Beats Leading Oil Service Companies



Source: Big Charts; PPHB

CLB is now generating a 12.9% return on assets and a 24.1% return

Since 1995, CLB has been at the top of the heap in the oilfield service industry in terms of total return to shareholders

on equity. Based on CLB's latest 12-month EPS, the stock sells at 42.8x, while it is trading at a 22x P/E on analysts' 2007 earnings estimates. Since 1995, CLB has been at the top of the heap in the oilfield service industry in terms of total return to shareholders, although much of that outperformance has been achieved in the past two years. The performance has been achieved by producing outstanding earnings growth through a strong focus on boosting profit margins while introducing new technologies to leverage the company's market position and buying back shares with excess cash flow rather than paying dividends. While neither CLB nor OMI is receiving great respect from the Wall Street analytical community, the respective stock performances, as demonstrated by charts, are rewarding shareholders.

[Note: The author owns shares of Core Labs and OMI.]

More Evidence of Shifting Drilling Focus

Both CEOs talked about slowing growth or flat activity forecasts for North America and acknowledged that drilling was shifting from gas toward oil

In our last issue of *Musings From the Oil Patch*, we discussed the comments about the outlook for the North American oilfield service market made by CEOs of Schlumberger and Weatherford International. While both CEOs talked about slowing growth or flat activity forecasts for the region, they both acknowledged that drilling was shifting from gas toward oil because of the change in relative crude oil and natural gas prices. We looked at the types of wells that were being drilled in mid-July of 2005 compared to mid-July of 2006. In the recent data, there was a noticeable shift in favor of more oil than gas well drilling. Now comes some additional evidence of this shift.

Canadian Natural Resources announced it was deferring drilling 308 gas wells planned for the second half of 2006 due to rising costs

Canadian Natural Resources Ltd. (CNQ-TSX), that country's third-largest natural gas producer, announced it was deferring the drilling of 308 gas wells planned for the second half of 2006 due to rising costs. Unstated was the pressure that slumping natural gas prices have played in the company's struggle to sustain the economics of these gas wells. Canadian Natural will now drill half the number of gas wells it had originally planned.

The oil drilling shift reflects the higher price being paid for Canadian heavy oil

Instead of drilling gas wells, Canadian Natural is shifting its focus to drilling oil wells, primarily drilling more wells in the Pelican Lake region. The company now plans to drill 28% more light oil wells, 10% more heavy oil wells and 42% more wells at Pelican Lake than originally projected. The oil drilling shift reflects the higher price being paid for Canadian heavy oil as a result of the reversal of several pipelines that have expanded the amount of the U.S. market that can be served by this oil.

Canadian Natural did say that it had not cut either its land or seismic data acquisition budgets. It also said that it was preparing for a normal winter drilling program. The current rise in natural gas futures prices from their recent lows, if sustained, will restore some of the lost economics of these deferred gas wells. If gas prices

continue to strengthen into the early fall; we would expect to see a gradual shift back to more gas-oriented drilling throughout North America. Barring a warm winter that will be the likely pattern of drilling activity into 2007.

UK Favors Nuclear, Starting Environmental Debate

The plan relies on a substantial number of new nuclear power plants to meet the country's energy needs and its environmental goals

In early July, Trade and Industry Secretary Alistair Darling introduced to parliament an energy plan for Britain for the next 50 years. The plan relies on a substantial number of new nuclear power plants to meet the country's energy needs and its environmental goals. This plan reflects a fear about the country becoming increasingly dependent on imported natural gas if it stays with its existing energy strategy, while also not being able to reduce sufficiently greenhouse gas emissions under Britain's Kyoto commitment.

The central part of the plan calls for increasing energy efficiency and boosting the use of renewable power sources, while nuclear energy could make "a significant contribution"

The report explores Britain's energy needs for the next 30 to 40 years. A statement of government policy is due to be published around the end of 2006 after further consultation with parliament and others. Besides energy supply, Secretary Darling said the country faces two major challenges – the need to tackle climate change and to cut carbon emissions. The central part of the plan calls for increasing energy efficiency and boosting the use of renewable power sources, while nuclear energy could make "a significant contribution."

The report pointed out that Britain must encourage households and businesses to reduce their energy consumption through incentives offered by power companies. Secretary Darling pointed to the seven percent of electricity that is wasted by electrical appliances that are left on standby. Of course, eliminating that waste would require people to step backwards. Instead of the instant-on computers, televisions and other household appliances people are use to, they would have to put up with appliances having to warm up first. It would probably mean getting rid of all the digital timers associated with these appliances, also. Is that something the populace is prepared to do?

PM Blair has become increasingly concerned about the pace of climate change and the fact Britain is facing becoming a significant natural gas importer in the not too distant future

The goal of cleaner energy in Britain is partially to be met by setting a target of 20% of electricity coming from renewable sources by 2020. According to the secretary, "A mix of energy supply remains essential and we should not be over-dependent on one source if we're going to maintain security of supply in the future." Prime Minister Tony Blair in the past has opposed the increased use of nuclear power. He has changed his mind, although the language of the report was less emphatic about the use of nuclear power than statements he made earlier this spring. PM Blair has become increasingly concerned about the pace of climate change and the fact Britain is facing becoming a significant natural gas importer in the not too distant future.

Over the next two decades, Britain would lose about one-third of its capacity to generate electricity as ageing coal and nuclear power plants close

PM Blair says that Britain needs nuclear power to keep it from becoming overly dependent on fuel imports from the Middle East, Central Asia and Russia as the country's North Sea reserves decline. He warned that over the next two decades, Britain would lose about one-third of its capacity to generate electricity as ageing coal and nuclear power plants close. Currently, Britain relies on natural gas for 38% of its energy needs, which would climb to 55% by 2020 without the construction of new nuclear power plants. Moreover, under that scenario, 90% of the country's natural gas would need to be imported. As PM Blair put it, "If we're going to go from being self-sufficient in gas to importing, if prices are rising, if we know that climate change is an even more serious problem than we thought a few years ago, how can we take nuclear out of the mix?"

"The government is going to have to stop looking for an easy fix to our climate change and energy crises – there simply isn't one."

As one would expect, the new energy plan has generated significant debate. Alan Duncan, energy spokesman for the opposition Conservative Party, said the new energy plan lacked substance and avoided tough decisions. He said it lacked a real commitment to nuclear power despite PM Blair's support. On the other hand, Tony Juniper, British director of Friends of the Earth, said that while the report's proposals to boost the use of renewables and increase efficiency would be welcome, far more is needed if Britain is to begin cutting the greenhouse gas emissions blamed for global warming. The most apt observation came from Jonathon Porritt, chairman of the Sustainable Development Commission, an independent advisory body to the government, "The government is going to have to stop looking for an easy fix to our climate change and energy crises – there simply isn't one."

A column in Britain's *The Guardian* newspaper by George Monbiot, who is opposed to nuclear power, examined the pros and cons of the Labor Party's strategy and the arguments against nuclear. He found many pluses in Labor's arguments and minuses in the arguments of the nuclear opponents, but in the end he still believes that there are other alternatives that make nuclear unnecessary.

Mr. Monbiot wonders how the environmental movement can campaign against the energy waste from electrical appliances left on standby that generates 4 million tons of CO₂ a year, yet dismisses a reduction some 13 times greater

Mr. Monbiot discussed the issue of greenhouse gas emissions and the nuclear power industry. He pointed out that Britain's current nuclear power plants are the country's principal source of low-carbon energy. According to his research, electricity produced by a pressurized light water nuclear reactor, after accounting for all carbon costs, emits around 16 tons of carbon dioxide per megawatt hour. Electricity generated by natural gas produces 356 tons per hour while coal produces 891 tons. If the nuclear power plants are replaced by hydrocarbon-powered plants, the country's annual output of CO₂ will rise by roughly 51 million tons, or eight percent of the total. Zac Goldsmith, an anti-nuclear spokesman, calls this percentage "miniscule." Mr. Monbiot wonders how the environmental movement can campaign against the energy waste from electrical appliances left on standby that generates 4 million tons of CO₂ a year, yet dismisses a reduction some 13 times greater.

If emissions are cut ratably across the world, Britain would need to cut its emissions by 87% over the next 24 years

Mr. Monbiot also points out that several environmental groups – Greenpeace, the New Economics Foundation and the Sustainable Development Commission – have produced reports showing that Britain can achieve the government’s target of a 60% reduction in greenhouse gas emissions by 2050 without recourse to nuclear power. Mr. Monbiot, who is writing a book on environmental issues, suggests that with population growth and the anticipated reduction in the earth’s ability to absorb carbon, the world will require an emissions cut of roughly 60% per capita by 2030. If emissions are cut ratably across the world, Britain would need to cut its emissions by 87% over the next 24 years. Achieving this magnitude of a reduction without nuclear power seems unattainable.

The critic’s argument assumes there will be no further uranium discoveries

There have been other arguments put forth against a reliance on nuclear power, dealing with environmental, safety and resource concerns. Mr. Monbiot analyzed these arguments with compelling data refuting each of them. The *Ecologist* magazine contended in an article last month that 14 million tons of concrete are needed to build a nuclear power plant releasing a massive amount of carbon dioxide. Mr. Monbiot found the statistics for the Calder A nuclear power plant built in 1956. It required 72,500 cubic yards of concrete, which equates to 108,000 tons, or less than one percent of the *Ecologist’s* estimate; and new nuclear power plants are even smaller

There have been arguments that the “assured reserves” of high-grade uranium ore are sufficient to last for only 40 to 50 years at current rates of consumption. Critics point out that if new nuclear power plants are built, they will run out of fuel before they reach the end of their economic lives. Mr. Monbiot argues that these concerns mix assured reserves and total global resources. The critic’s argument assumes there will be no further uranium discoveries, an argument that carries little weight given the history of mineral and energy exploration and development.

It is hard to accept that coal mining and its burning has a lower cancer, and thus death risk than uranium mining

Another concern is that the mining of uranium is likely to result in the deaths of miners. The *New Scientist* magazine reported that 400,000 uranium miners working in East Germany between 1946 and 1990 were exposed to an increased risk of lung cancer of about 10%. The article didn’t say whether this rate of increased cancer risk is the case elsewhere, or how it compares with other kinds of mining. According to government figures, one ton of uranium produces as much energy as 75,000 tons of coal. It is hard to accept that coal mining and its burning has a lower cancer, and thus death risk than uranium mining.

The fear of another nuclear plant accident such as the devastating Chernobyl plant meltdown probably cannot happen given existing technology. Secondary containment of the reactor core and new safety systems make a total meltdown virtually impossible. In addition, nuclear power plants can be strengthened to reduce the risk of them becoming terrorist targets, just as it is almost impossible to crash an airplane into a nuclear power plant with the force and precision to cause a release of radioactive fuel.

Without a clear plan for waste disposal, all economic assumptions about new nuclear power plants are worthless because they fail to take into account the clean-up costs

If all these anti-nuclear arguments carry so little weight, what arguments do potentially merit consideration? The primary one is the lack of a sound strategy about nuclear waste disposal and its long-term costs. The official disposal strategy is to bury the waste, but we still don't know where, how or at what cost. Moreover, there are serious concerns about how to move that waste from existing power plants to the waste-fuel repository. Mr. Monbiot believes that without a clear plan for waste disposal, all economic assumptions about new nuclear power plants are worthless because they fail to take into account the full potential clean-up costs. Of course we had, and continue to have, the same problem with offshore oil and gas producing platforms. While Mr. Monbiot may feel that not knowing the final clean-up expense makes plant cost estimates invalid, this has been true about energy facilities since day one. What we know from history is that new technologies emerge that can change the initial clean-up strategies and their cost estimates. But it is fair to acknowledge that there are clean-up costs with all energy infrastructure facilities that need to be included in the analysis of their economics.

Improving energy efficiency and carbon capture and storage, coupled with exploiting the UK's new offshore wind resources could cut Britain's carbon emissions as swiftly and as effectively as the atomic program

Mr. Monbiot's main argument against the proposed nuclear power plan is that the same money invested in improving energy efficiency and carbon capture and storage, coupled with exploiting the UK's new offshore wind resources could cut Britain's carbon emissions as swiftly and as effectively as the atomic program. He does recognize that North America, given its declining natural gas resources, is a much tougher challenge. He believes that using gas resources, with reduced greenhouse gas emissions compared to other hydrocarbon fuels, should continue, while we develop carbon sequestering technologies and electricity storage systems. For Mr. Monbiot, this strategy makes more sense than new nuclear power plants.

Gasoline Expenditures Reveal Interesting Trends

A company called MapInfo Corporation (MAPS-NASDAQ) recently issued a press release designed to highlight the value of its service. The company, which calls itself a leading provider of locations intelligence solutions, used its capabilities, along with research from

Exhibit 3. Western Cities Have More Gas Guzzlers

Gas Guzzling Cities

- 1 Gillette, WY
- 2 Marshall, MN
- 3 Snyder, TX
- 4 Rock Springs, WY
- 5 Elk City, OK
- 6 Huron, SD
- 7 Pampa, TX
- 8 New Ulm, MN
- 9 Watertown, SD
- 10 Aberdeen, SD

Source: MapInfo; PPHB

The more rural the region, and that tends to be the west, the greater the likelihood of people owning multi-purpose vehicles

R. L. Polk & Co., to develop lists of the ten cities with the biggest gas guzzlers and the most fuel-efficient cars. They also looked at the impact of rising fuel costs on consumers by location.

The lists of cities MapInfo developed were not totally surprising; however, there were some surprises. On the list of the biggest gas guzzlers, which means cities with a high propensity for owners of large SUVs, trucks and sports cars, meaning residents are twice as likely to own them as anywhere else in the country, were cities all in the western half of the country. The list was led by three cities in South Dakota, two each in Wyoming, Texas and Minnesota and one in Oklahoma. Now this list is not remarkable because the more rural the region, and that tends to be the west, the greater the likelihood of people owning multi-purpose vehicles, which today tend to be SUVs and trucks. We are not sure about the sports cars, but maybe that's how Minnesota made the list.

Exhibit 4. Hawaii Dominates Fuel Efficient Cities

Most Fuel Efficient Cities

- 1 Kapaa, HI
- 2 Kahului-Wailuku, HI
- 3 Hilo, HI
- 4 Honolulu, HI
- 5 Eureka-Arcata-Fortuna, CA
- 6 Barre, VT
- 7 Athens, OH
- 8 Willimantic, CT
- 9 Fairmont, WV
- 10 Oak Hill, WV

Source: MapInfo; PPHB

Two cities on the list were in West Virginia – a state not known for social conscious behavior

With Hawaii leading the country in gasoline prices, it was not surprising that the top four cities on the fuel-efficient vehicle list were on the islands. We found it interesting that two cities on the list were in West Virginia – a state not known for social conscious behavior. One of these days we will have to re-visit West Virginia to see what makes these people buyers of highly fuel-efficient vehicles. There was also one city, or metropolitan region, from California, Vermont, Ohio and Connecticut on the list.

We were particularly intrigued by Willimantic, Connecticut making the list. It has been years since we've been there, but since it is close to the University of Connecticut in Storrs, we often spent time there in the late 1960s. It was an old manufacturing town that was down on its luck at that time. We are not sure if it has become a bedroom community for the growing university, in which case it might be full of idealistic professors – or rich students living off-campus - with fuel-efficient vehicles for commuting. We'll add Willimantic to our list of must places to re-visit.

The other two lists MapInfo produced showed the top 10 U.S. cities ranked by gasoline expenditures as a percent of income. Here one

Some citizens are being hurt by rising gas prices while others are not

can be thrown off by statistics, as income measurements usually are generated by standard metropolitan areas that often don't conform to our concept of the city. Sometimes these areas include cities, or parts of cities, that distort the definition of the city from what we would normally assume it to be. We offer these lists up more from the viewpoint of showing the potential magnitude of financial pain some citizens are experiencing from rising gas prices compared to other Americans who are probably not altering their lifestyles.

Exhibit 5. Where Lifestyles Are Being Impacted by Gas Prices

Top 10 Cities by Gasoline Expenditure as a Percent of Income

<u>Area Name</u>	<u>Avg. Hhld Income</u>	<u>% of Total HH Income</u>
Brookhaven, MS	\$46,621	7.38%
Grand Junction, CO	\$48,227	6.60%
Campbellsville, KY	\$48,391	6.48%
Palestine, TX	\$59,213	6.29%
Mount Vernon, OH	\$44,129	6.29%
Parsons, KS	\$49,285	6.27%
Oxnard-Thousands Oaks-Venture, CA	\$52,043	6.10%
Hobbs, NM	\$49,519	6.05%
Cookeville, TN	\$48,824	5.94%
Hope, AR	\$45,197	5.94%

Source: MapInfo; PPHB

Exhibit 6. Cities With Unchanged Lifestyles

Bottom 10 Cities by Gasoline Expenditure as a Percent of Income

<u>Area Name</u>	<u>Avg. Hhld Income</u>	<u>% of Total HH Income</u>
Brevard, NC	\$124,583	1.41%
Longview, TX	\$105,976	1.42%
Washington, NC	\$93,501	1.62%
Jonesboro, AR	\$81,957	1.64%
San Antonio, TX	\$98,505	1.66%
Torrington, CT	\$90,900	1.66%
Boston-Cambridge-Quincy, MA	\$84,593	1.69%
San Diego-Carlsbad-San Marcos, CA	\$112,816	1.70%
Holland-Grand Haven, MI	\$75,768	1.79%
New Philadelphia-Dover, OH	\$83,041	1.79%

Source: MapInfo; PPHB

A Tamer Hurricane Season?

Forecast revisions are projecting a less active hurricane season than their original forecasts

As we entered the second month of the 2006 hurricane season and the beginning of the period that traditionally produces 80% of all tropical storms, forecasters are revising their earlier forecasts. These forecast revisions are projecting a less active hurricane season than their original forecasts.

Private weather forecaster, WSI Corp. said, in its recently updated tropical weather outlook, it expected the 2006 Atlantic hurricane

The reasons for the tamer forecast are the recent cooling of tropical Atlantic waters to levels closer to normal and an increased chance of El Nino development

season to be less active than initially projected. Their new forecast calls for 14 named storms, with four of them becoming major hurricanes with winds of over 111-miles per hour (Category 3). The revised forecast is one storm and one major hurricane below their prior forecast. The reasons for the tamer forecast are the recent cooling of tropical Atlantic waters to levels closer to normal and an increased chance of El Nino development. That would cause a more disruptive wind shear environment and could make the second half of the season less active than originally anticipated.

The typical hurricane season produces 9.6 storms, 5.9 hurricanes and 2.3 major hurricanes

While the reduced forecast is only about half the level of storm activity experienced last year, it still represents an active year – well above normal. The typical hurricane season produces 9.6 storms, 5.9 hurricanes and 2.3 major hurricanes. According to WSI, it believes the 2006 hurricane season will more closely resemble the season of 2000 or 2003, each of which had 14 named storms. As this revised forecast was being released, the third tropical storm, Chris, was forming in the South Atlantic. Initial forecasts suggest the storm may reach the Florida coast by the weekend, but not as a hurricane. As the weekend arrived, the storm had regressed to a tropical depression, but it was continuing toward the Gulf of Mexico. Forecasters are watching Chris because they remember that last year, Hurricane Rita was only a tropical storm when it entered the gulf, but became a Category 3 hurricane in a matter of four hours.

Colorado State University now foresees 15 named storms, down from its May 31 forecast of 17

Colorado State University's Department of Atmospheric Science's forecasting team of Philip Klotzbach and William Gray also lowered its storm forecast. They now foresee 15 named storms, down from their May 31 forecast of 17. They are looking for seven hurricanes and three intense hurricanes (Category 3, 4 or 5), both categories reduced by two storms. The reason for the reduction is cooler sea surface temperatures and lower atmospheric pressures. These are conditions important for generating more, and more intense, storms.

The new CSU storm landfall projections show a significant lowering of Gulf of Mexico exposure with heightened East Coast risk

The new CSU storm landfall projections show a significant lowering of Gulf of Mexico exposure with heightened East Coast risk. The new forecast calls for a 73% probability of landfall on the U.S. coastline compared with a 52% average for the last century. For the East Coast, including the entire peninsula of Florida, the probability is now 64% compared with the long-term average of 31%. For the Gulf Coast, the new probability of 26% is below the long-term average of 30%.

If the 2006 hurricane season does prove to be less active, and more of the storms head toward the East Coast, the oil and gas drilling and producing infrastructure and the refining industry are likely to be spared more damage, or even a disruption, that could mitigate the rise in gasoline and heating oil prices that currently are being driven higher by Middle East tensions. This would be good news for the U.S. economy and might even contribute to helping avoid a recession that would undercut energy demand.

Central Asia Becoming a Core Producing Region

Kazakhstan's crude oil production will reach three million barrels per day and 79.4 billion cubic meters of gas by 2015

Kazakhstan is destined to become a major source of crude oil supply to the west if export pipeline capacity grows in concert with expected production growth. According to Kazakhstan's Energy Minister Baktykozha Izmukhambetov, his country is on track to almost triple its crude oil and natural gas production by 2015. If achieved, Kazakhstan's crude oil production will reach three million barrels per day and 79.4 billion cubic meters of gas. The output will come mostly from the giant Kashagan offshore oil field, the onshore Tengiz field and the Karachaganak oil and gas condensate field.

Exhibit 7. Kazakhstan Plays a Major Role in Global Oil Supply



Source: EIA

The biggest concern for the country is whether export capacity will grow sufficiently, and on time, to enable the projected production growth

The biggest concern for the country is whether export capacity will grow sufficiently, and on time, to enable the projected production growth. BG Kazakhstan's President Lewis Affleck told an energy conference in London that, "new pipeline infrastructure will be key for Kazakhstan to realize its potential." BG (BRG-NYSE) operates the Karachaganak oil and gas condensate field that is projected to double its gas output by 2011-12 to 16 billion cubic meters a year and also raise its liquids production.

Exhibit 8. Access to Export Pipelines is Crucial



Source: EIA

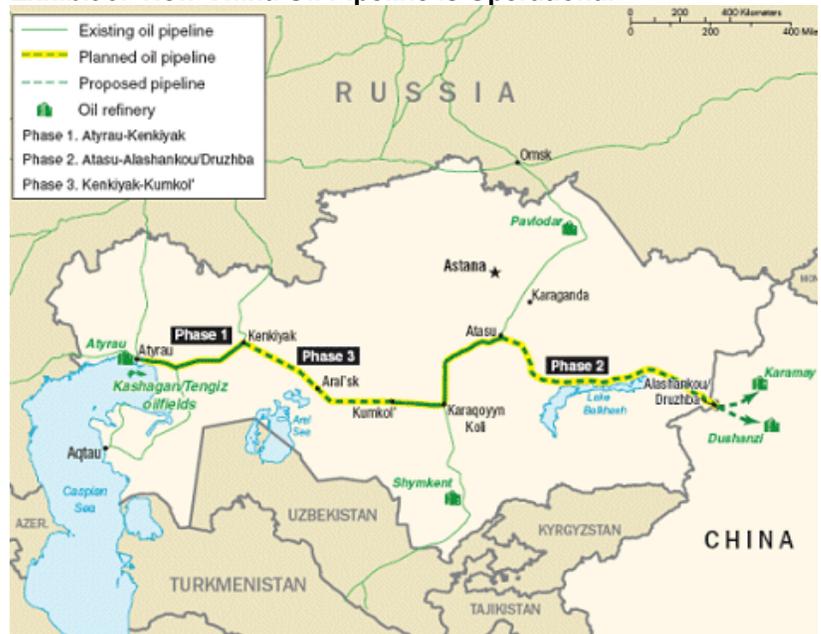
BG is looking at other alternatives including rail for its increased oil output and a gas pipeline route to China

Karachaganak's gas is exported through Russia and liquids are shipped via the Caspian Pipeline Consortium (CPC) line through Russia to its Black Sea outlet Novorossiisk. Mr. Affleck said that BG is looking at other alternatives including rail for its increased oil output and a gas pipeline route to China. Since most of Kazakhstan's oil export volumes move through the CPC line, the producers have been lobbying to have the line's capacity almost doubled to 67 million tons a year by 2010. Unfortunately, CPC's largest owner is Russia who has ignored these requests for political reasons.

The challenge for Russia is to try to control the export volumes from this region if it wants to influence the political alignment of these former soviet satellites and stymie the political gains in the region by the United States

A new 10-million-tons-per-year pipeline to China has provided producers some flexibility. Kazakhstan has recently signed an agreement to join the BP-led (BP-NYSE) Baku-Tbilisi-Ceyhan (BTC) oil pipeline, which ships Caspian crude to European markets via a link across the Caucasus and through Turkey, thus bypassing Russia. The tanker route can handle small volumes of crude oil but, unless larger tankers are constructed, export volumes will be limited to less than 400,000 b/d. The challenge for Russia is to try to control the export volumes from this region if it wants to influence the political alignment of these former soviet satellites and stymie the political gains in the region by the United States. The natural resource potential of the Central Caucasus is becoming a major geopolitical battleground over economic and social philosophies.

Exhibit 9. New China Oil Pipeline is Operational



Source: EIA

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