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E N E R G Y I N V E S T M E N T B A N K I N G , L P

## MUSINGS FROM THE OIL PATCH

January 23, 2007

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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

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## Energy and Aging Populations

**Stratfor focused on the economic impact of shifting U.S. demographics**

Last fall, intelligence firm Stratfor presented a white paper highlighting what in its opinion it considers a long-term challenge for the United States. While many economists are concerned about the impact of an inverted yield curve on the future of the U.S. economy, or what may befall the economy as a result of the large budget deficits and growing trade imbalances, Stratfor instead focuses on the economic impact of shifting U.S. demographics. We read this white paper with great interest since the health of the U.S. economy will have a significant impact on future energy demand, oil and gas prices, and ultimately the pace of development of future energy supplies. But we also began to wonder about the impact on long-term energy demand growth as a result of the changing U.S. demographics and those of other major energy consuming countries.

**The single most notable characteristic of the macro environment that has helped foster strong economic growth of the United States and the rest of the world has been extraordinarily cheap credit**

The white paper pointed out that the macro environment of the past 15 years had been very conducive to strong economic growth in the United States. This growth has come not from the many factors that traditionally influence economic growth – a well-developed mass education system; a system that rewards risk-taking; functional bankruptcy laws; a mobile population; an enthusiasm for new technology; and a relatively uncorrupt culture. In Stratfor's view, the single most notable characteristic of the macro environment that has helped foster strong economic growth for the United States and the rest of the world has been extraordinarily cheap credit.

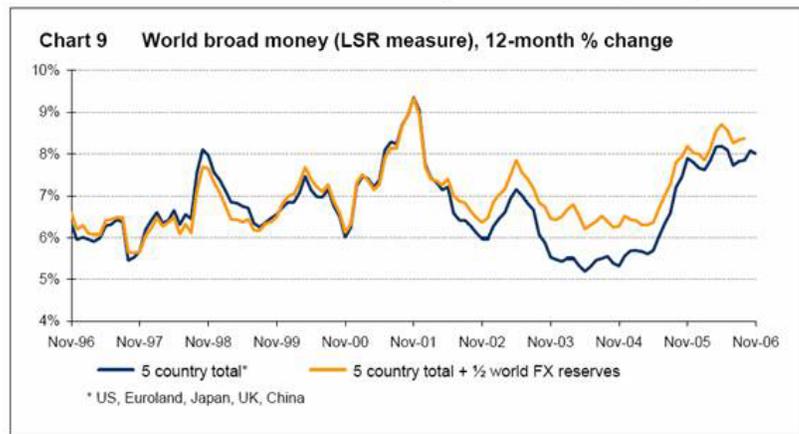
Stratfor pointed out that most Asian economies function on a system of cheap credit to stimulate their economies. In most of these countries, the state actively intervenes in the financial system to

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**In Asia many companies are allowed to continue to operate with the assistance of cheap credit**

ensure that anyone who needs cash can get access to loans at well-below-market rates, regardless of the soundness of the borrower's business plan. China and Japan are at the top of the list of Asian countries that practice this intervention. Under these systems, the concern is not profitability, but rather market share and mass employment. In the United States, companies that can't make money, i.e., they generate substantial revenues but cannot break even, would be shut down, but in Asia many of these companies are allowed to continue to operate with the assistance of cheap credit. However, this policy of cheap credit does not end at the country's borders and it does have an impact on the rest of the world.

#### **Exhibit 1. Global Liquidity Is Floating All Asset Values**



Source: InvestorsInsight

**The real money entering the global financial system has come from the United States**

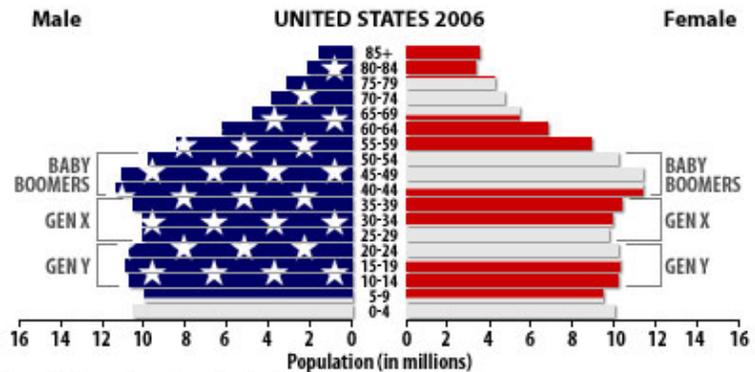
Under Japan's cheap credit policies Japanese companies have been able to access more than \$1 trillion in yen for international operations. China's system has resulted in \$1 trillion of U.S. Treasury bond purchases. Asia, even without taking into account Taiwan, South Korea or any of the other Asian states that have modified economic schemes, have added \$2 trillion in cheap cash to the global financial system in recent years. While that is a significant amount of money, the real money entering the global financial system has come from the United States.

From a financial point of view, people fall into three categories. First are the young workers who are buying homes and raising children. They are consumers of credit. The second group is the mature workers who have paid off their mortgages and educated their children, positioning them to build up their assets and reduce their spending in anticipation of retirement. Finally, there are the retirees who live off their savings and who work to avoid financial surprises by moving their funds into investments with stable sources of income such as government bonds.

So the system cycles with people moving from substantial credit consumers to seasoned credit suppliers and then eventually they withdraw from the system altogether. The system works well so

long as the demographic forces remain in balance – having enough mature workers to support the young workers, and so long as the retirees do not pull too much money out of the system. However, it is this demographic balance that is shifting, both in the United States and elsewhere.

### Exhibit 2. U.S. Demographics Due to Shift



Source: U.S. Census Bureau, International Data Base.

Source: U.S. Census Bureau, Stratfor

**The baby boomers have supplied the bulk of the working capital for the United States for the past 15 years**

In the United States, the baby boomers are the mature workers and they represent the largest population segment the country has ever produced, when measured by their percentage of the total population. Beginning in the early 1990s, this generation's children started leaving college and, as of 2006, nearly all their kids have moved on to their own lives. Some of the older baby boomers have already taken early retirement, but the bulk of them are not expected to leave the work force until after 2012. The baby boomers have supplied the bulk of the working capital for the United States for the past 15 years. Their investments – way out of proportion to what any prior generation has ever been able to provide – caused the low interest rate environment of the 1990s and 2000s. This generation also funded the most expensive and revolutionary transformation the U.S. economy has ever experienced - the computer revolution.

**The United States is facing an inversion of the credit environment**

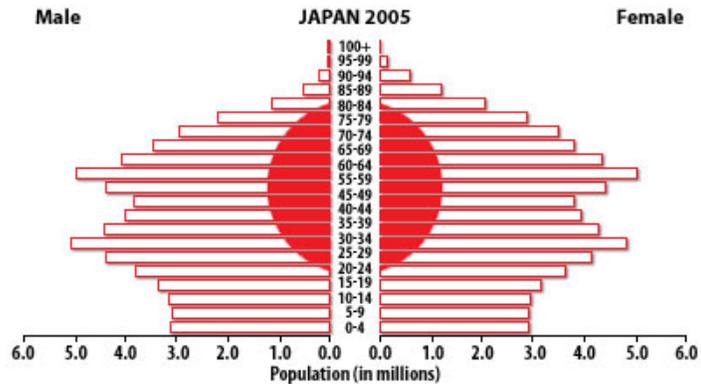
When the baby boomers retire, that surge of capital will go away. Replacing them as the financiers of the country will be Generation X. Unlike the baby boomers, Generation X has fewer members. In fact, they are the smallest population segment that the country has ever produced, as measured by their percentage of the total population. Generation X will be unable to produce the amount of capital the baby boomers have been able to store up over these past 15 years. At the same time, the echo boomers (Generation Y), the children of Generation X, will be helping to consume the available pool of capital. The number of echo boomers almost equals the number of Generation X members. The bottom line is that the United States is facing an inversion of the credit environment. Instead of a large generation supplying credit to a small generation, soon a small generation will be supplying credit to a large one.

**Japan faces a 20-year shortage of credit as its post-World War II baby bust takes over the role of capital formation**

There are two implications of this reduced supply of capital. First, and most obvious, is that the cost to finance any purchase will go up. Fewer people and governments will be able to afford the payments that go along with higher interest costs, leading to reduced consumption and slower growth across all sectors and economies. Second, a smaller pool of capital will result in a smaller margin of error. This means increased volatility, which means that swings between booms and busts may be far more rapid and disruptive.

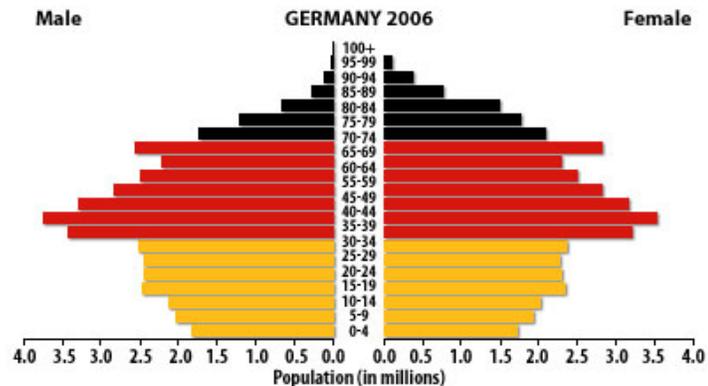
When we look across the globe, we find a number of other countries facing similar demographic shifts as the U.S. that will impact their economies. Japan faces a 20-year shortage of credit as its post-World War II baby bust takes over the role of capital formation. After a brief respite from Japan's 1970s baby boom, the country will face serious credit availability for a long period. In Europe the demographic decline may be more serious than in the United States because the average age in those countries is older. In the United States, pension outlays account for about 4.5% of GDP, while in Italy and Denmark it is already three times that level.

**Exhibit 3. Japan's Population Ageing**



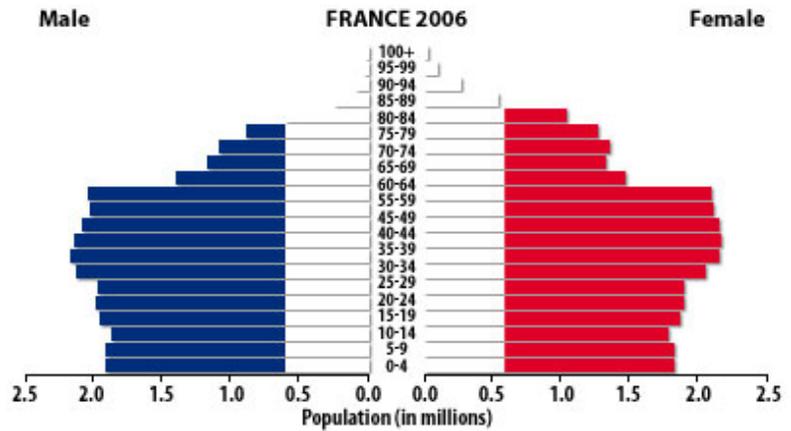
Source: U.S. Census Bureau, Stratfor

**Exhibit 4. Germany Has An Old Population**



Source: U.S. Census Bureau, International Data Base.  
Source: U.S. Census Bureau, Stratfor

**Exhibit 5. France Too Has An Aged Population**

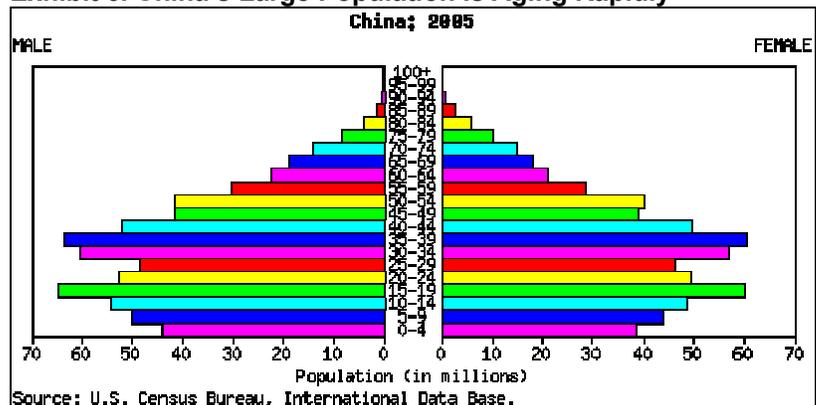


Source: U.S. Census Bureau, International Data Base.  
 Source: U.S. Census Bureau, Stratfor

**For China, its 60-year policy of one child per family has slowed its population growth rate to a crawl**

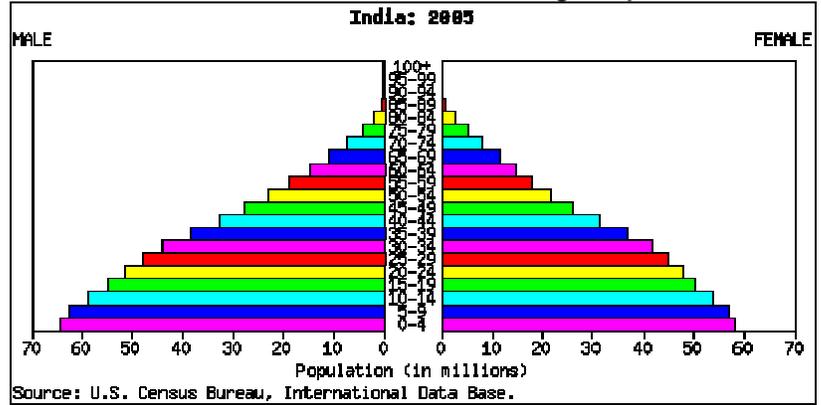
The term used for describing how a population bell hollows out over time due to reduced birth rates is called a “population chimney.” These population chimneys are not limited to developed countries. Russia, due to its World War II and resulting Cold War experiences, has been given a demographic picture that is worse than even Japan’s. For China, its 60-year policy of one child per family has slowed its population growth rate to a crawl. The country is facing a severe demographic challenge as today each child has four grandparents, but as they retire there will be only one child to support them. This demographic is in addition to the social and economic strains of the huge migration of poor Chinese from rural areas to the cities. The only major economy in the world that has a traditional population bell curve is India, but it is a country that has never been an exporter of capital.

**Exhibit 6. China’s Large Population Is Aging Rapidly**

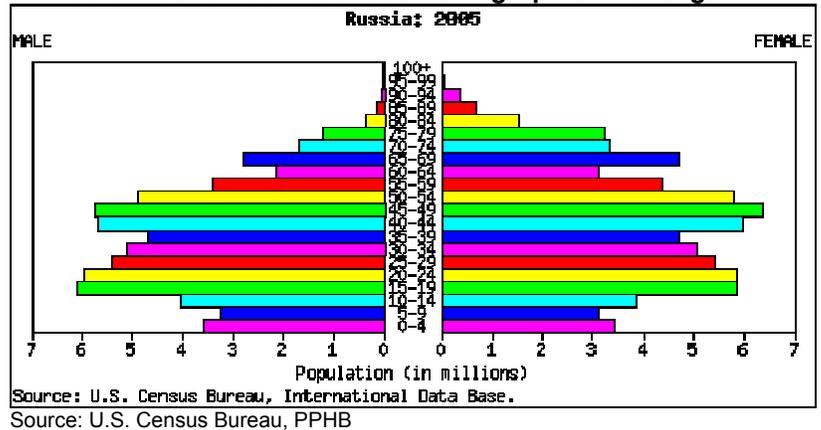


Source: U.S. Census Bureau, International Data Base.  
 Source: U.S. Census Bureau, PPHB

**Exhibit 7. India Has An Abundance of Young People**



**Exhibit 8. Russia Has A Serious Demographic Challenge**



**The cost of credit will become more expensive than it has been both in the United States and internationally**

**As people age they usually consume less energy**

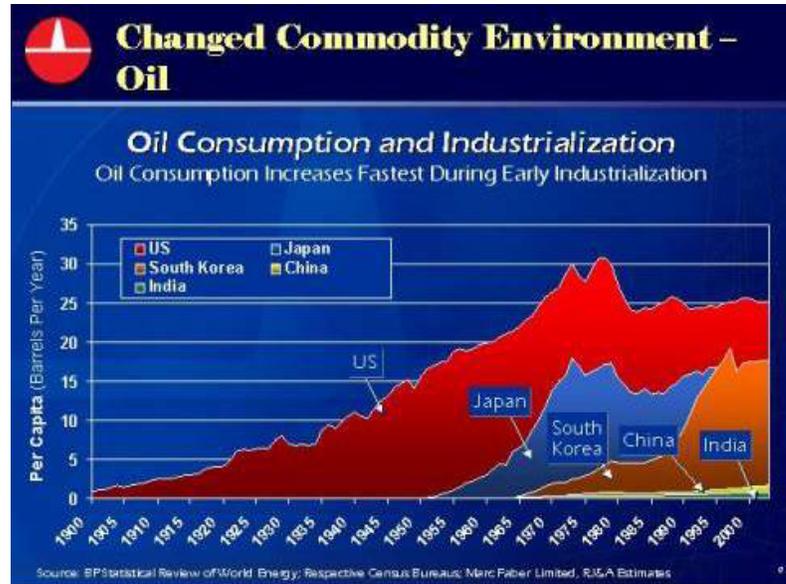
Looking into the long-term future, the United States may be better off than most of the developed and developing countries in the world because it does have a Generation Y that will mature into a capital-providing population segment. Unfortunately, that maturation will not happen for upwards of 40 years. In the interim, the cost of credit will become more expensive than it has been both in the United States and internationally.

So what does this mean for energy consumption? As people age they usually consume less energy. They stay at home more and engage in fewer activities that require energy. This reduced energy consumption pattern becomes evident in later years as initially they travel and maintain active lifestyles that delay any meaningful energy consumption decline. Therefore, over time, the impact of aging demographics and reduced credit availability will lead to slower economic growth in major energy consuming regions of the world – the United States, Japan and Western Europe. Even Russia and China will experience significant demographic changes that are likely to lead to either a reduction in energy consumption or more likely a slowing in energy demand growth. China has a potentially

### China is hoping to develop a more balanced economy

major demographic challenging the government that helps to explain why it is working so hard to create jobs for its current population. The country needs to create jobs and a mature economy as quickly as feasible in order to generate as much income as possible before the aging phenomenon overwhelms the country's growth. China is hoping to develop a more balanced economy that isn't totally dependent on manufactured exports in order to survive and prosper.

#### Exhibit 9. Oil Use Rises With Industrialization



Source: BP, Patterson-UTI

As shown by Exhibit 9, oil consumption in the early years of significant industrialization of a country rises rapidly and then levels off as the economy matures. This graph has been used repeatedly to show the current low level of energy use by China and India and the likelihood that those economies will go through an oil consumption growth phase much like the U.S., Japan and South Korea did. It is interesting to note the low average age of the population of South Korea and Japan compared to the U.S. in 1950. Of course India, China and the Russian Federation were also relatively young populations at that time. Interestingly, India, China and South Korea still had a younger average age than the U.S. in 2005. By 2050 only India will have a younger median age than the U.S., suggesting that energy consumption growth for the other countries is likely to slow as their populations age.

### Rapidly aging populations will slow the economic growth of countries

When we look at the long-term growth rate assumptions for global energy demand and oil and gas consumption used in the forecasting models, we wonder if they are too aggressive. Rapidly aging populations will slow the economic growth of countries or force them into adopting different immigration rules in order to import workers to keep their economies growing.

**Exhibit 10. Median Age of Select Country Populations**

(in years)	1950	2005	2050
United States	30.0	36.1	41.1
Japan	22.3	42.9	52.3
South Korea	19.1	35.1	53.9
Germany	35.4	42.1	47.4
France	34.5	39.3	45.5
Russian Federation	25.0	37.3	43.5
China	23.9	32.6	44.8
India	20.4	24.3	38.7

Source: UN, PPHB

**As the globe's population ages, our sense is that energy demand growth may be a casualty**

We are not convinced that an aging population will necessarily mean fewer energy resources being developed. However, that could also be a possibility as important skills are lost and fewer able-bodied people are available for exploiting certain natural resources. While we are not sure exactly what will happen as the globe's population ages, our sense is that energy demand growth may be a casualty. We doubt that possibility is accurately captured in the energy forecasting models. Maybe the erosion of energy demand growth will only be at the margin, but then again it is marginal demand, supply and costs that drive the economics of the energy business.

## **Tarnished Halo Weakens Browne's Negotiating Power**

Lord John Browne of Madingley will be retiring from the chief executive's position at BP plc (BP-NYSE) some 17 months ahead of his initially planned retirement date. Does this mean that BP is gearing up to address the myriad of problems the company has encountered over the past few years? Is this move a repudiation of John Browne's management style and his direction for the company? It probably means some of both.

**According to many reports, John Browne wanted to extend his term at the top of BP**

The retirement announcement came on January 12 and closes a period of political intrigue at the top of the company. BP has long held to a retirement policy for executives of age 60. For John Browne that event would have arrived during the summer of 2008. Last summer, the company's board of directors and John Browne began discussing the succession of senior management at the company. According to many reports, John Browne wanted to extend his term at the top of BP. In fact, he wanted to step up and succeed Peter Sutherland as chairman. When it became evident that he would not be able to achieve that goal, John Browne pushed for an extension to his retirement date from the summer of 2008 to the end of that year. That date was mutually agreed to by John Browne and the board and was announced this past summer.

As fall arrived, BP's political problems escalated. The trial over the Texas City refinery explosion, fire and deaths of 15 workers was preparing to start. As the company attempted to reach out-of-court settlements with the defendants, the court announced that it

**The focus of the questioning would have been directed to the management of BP**

would be requiring Lord Browne to testify, which could have, and likely would have, been an embarrassing episode for the company, and potentially for Lord Browne. The focus of the questioning would have been directed to the management of BP, especially its integration of the major acquisitions engineered by Lord Browne, and the cost cutting efforts undertaken by BP in recent years. There would have been an exploration into whether the cost-cutting mandates contributed to the explosion and fire. By reaching settlements, the trial and Lord Browne's testimony was avoided.

**The board began to worry about the need to focus management on addressing its performance issues while having John Browne in the top spot for two more years**

However, for John Browne, the string of high visibility operational problems that all appear to have at their core weaknesses in the management of the company had impacted BP's stock price. The corrosion of the Alaska pipeline and the resulting oil spill that forced its shutdown and the U.S. government price-fixing charge over LP gas trading operations highlighted issues about management competency. With BP's stock price under pressure, and certainly underperforming its peer's, the board began to confront the issue of management succession and the bigger issue of management performance. As John Browne pushed to become chairman and then to delay his retirement, the board began to worry about the need to focus management on addressing its performance issues while having John Browne in the top spot for two more years.

ExxonMobil (XOM-NYSE) had confronted a similar problem several years ago as Lee Raymond was approaching retirement age. The planning for executive succession had not been completed. The ExxonMobil board elected to extend Mr. Raymond's retirement date by a year to allow for an orderly management succession, which led to the elevation of Rex Tillerson. But then again, ExxonMobil was not struggling with operational issues, and in fact was knocking the ball out of the park with respect to its financial performance.

In late December, there were various media reports that BP's board was establishing a new senior management position – chief operating officer – but not filling it immediately. The understanding was that the position, which would have been occupied by the successor to Lord Browne, would be filled in the spring of 2007. Reports are that the board was planning to elevate Tony Hayward, head of exploration and production, into the position. Clearly the mandate of the person filling the new position would be to address the management issues BP has been struggling to overcome.

**The decision may have been helped along by an internal PR campaign reportedly waged against Lord Browne by Tony Hayward**

Under the management succession plan agreed to last summer, there would have been an 18-month period of overlap between Lord Browne and his successor. Reportedly, while John Browne was on vacation over the year-end holidays, he decided that an 18-month transition period was too long and recommended that he retire at the end of July 2007, reducing the transition period to six months. That decision may have been helped along by an internal PR campaign reportedly waged against Lord Browne by Tony Hayward. According to a story in the *Financial Times*, Mr. Hayward critiqued BP's cost-cutting efforts and its leadership style. He also said that

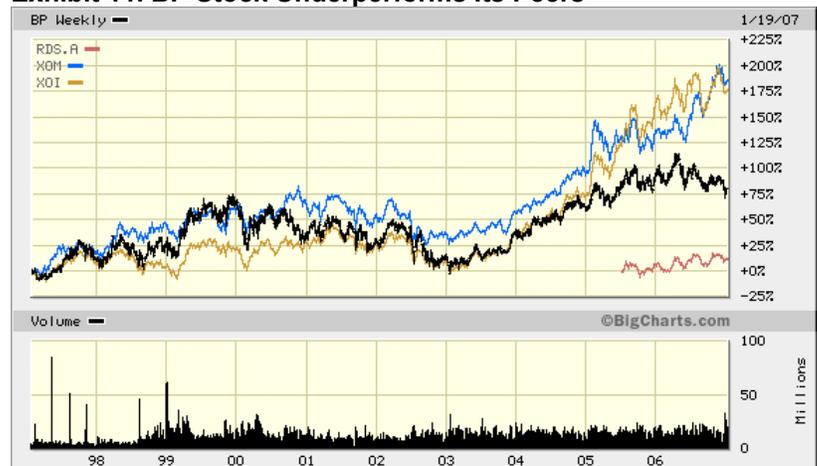
BP had failed to cultivate strong political relationships in places it operates, in particular the United States where many of its problems were surfacing.

According to the *Financial Times* article, Mr. Hayward wrote, “The mantra of ‘more for less’ says we can get 100 percent of the task completed with 90 percent of the resources; which in some cases is OK but it needs to be deployed with great wisdom and judgment.” He went on to say, “When it isn’t, you run into trouble.” Operating under a cost-cutting or tight financial control philosophy can extend for a limited time because patches only work for a short period before accidents happen. Last week, a special investigating committee under the leadership of former U.S. Secretary of State James A. Baker III, reported on the BP management failures that contributed to the Texas City refinery disaster.

### Tony Hayward commented on the leadership at the top of BP

Another issue Tony Hayward commented on was the leadership at the top of BP. He wrote, “We have a leadership style that is probably too directive and doesn’t listen sufficiently well. The top of the organization doesn’t listen hard enough to what the bottom of the organization is saying.” Clearly, this statement is an indictment of John Browne who, as a visionary in the 1990s, engineered five significant acquisitions including those of Standard Oil of Indiana (Amoco) and Atlantic Richfield (Arco) along with the formation of a joint venture with Russian oil company TNK to create the modern BP, is often described as a hard-headed manager who often wouldn’t listen to other opinions.

### Exhibit 11. BP Stock Underperforms Its Peers



Source: BigCharts.com

BP is known as one of the top international oil firms, but as its stock has lagged the company has slipped from being the second biggest company based on market capitalization to the fifth. The company is well-regarded for its technology prowess, but we were amused by the comment at an oilfield technology conference from a senior BP technology officer saying, “we have technology – Amoco and Arco.”

**It more accurately reflects the attitude of an organization that has not been properly integrated into its parent**

This comment may reflect the state of BP's technology, but it more accurately reflects the attitude of an organization that has not been properly integrated into its parent. In either case, this statement was a powerful indictment of BP and its management.

The era of John Browne at BP is about to end officially, although it effectively has already ceased. The man has a tremendous legacy having taken an almost bankrupt state-controlled oil company and turned it into a global powerhouse – although maybe not as powerful as it once was. Tony Hayward will have a lot of work to do to clean up the operational shortcomings of BP, but he has many assets to capitalize on.

Besides the political problems of Alaska, Texas City and LP gas, Mr. Hayward has a major challenge in figuring out how the changing political landscape in Moscow will impact the long-term future of BP's major growth initiative in Russia, its TNK-BP joint venture. One might say that after everything that has gone wrong at BP, Tony Hayward is in the enviable position of coming in at the bottom with nowhere to go but up. But falling oil prices could force him to have to make critical actions soon, without the luxury of time to establish his leadership position. The big question is whether BP's management change will be more like ExxonMobil's or more chaos?

## Renewables, Houston and the Termite

**The Energy Department doesn't lease federal lands, so it isn't involved in leasing terms or the resolution of leasing disputes**

Last week we attended the Houston chapter meeting of the Association for Corporate Growth where the speaker was U.S. Department of Energy Secretary Sam Bodman. The speech was one of those typical government official talks: Let me explain what my department does and doesn't do and tell you of some interesting things we are working on that may be of importance to you. For most of the people in the audience, the issues of the government's increasing the royalty rates on offshore leases and the ongoing battle over how to resolve the 1998 and 1999 offshore leases awarded to companies that lacked triggering prices to end the royalty holidays were of great interest. However, as Sec. Bodman explained, the Energy Department doesn't lease federal lands, so it isn't involved in leasing terms or the resolution of these disputes. He also went on to say that his department doesn't set environmental rules for drilling or the CAFÉ standards for automobiles, nor does it decide where to locate LNG receiving terminals. All of those issues are handled by other government departments.

So what does the Department of Energy do with its \$26 billion budget? It is involved in four areas: overseeing the production and reliability of U.S. nuclear weapons and the country's nuclear power business; cleaning up nuclear weapons research and manufacturing plants; securing the nation's energy supplies by operating the Strategic Petroleum Reserve (SPR) for crude oil and the Northeast Heating Oil Reserve; and helping to develop clean energy through scientific research and development. While these are all very

**If you are in the nuclear power or alternative energy fuels businesses, Sec. Bodman is here with money and assistance**

**Sec. Bodman discussed the growing role of ethanol in our transportation fuel mix, but questioned just how much acreage the United States could devote to raising corn as a feedstock**

**So what are the chances we elevate the lowly termite to be our symbol for energy security and a healthy atmosphere?**

important responsibilities, on balance they are not among the highest priority considerations for energy and oil service company executives.

The impression one was left with from Sec. Bodman's talk was that if you are in the conventional oil and gas business, there is little he can do for you. However, if you are in the nuclear power or alternative energy fuels businesses, he is here with money and assistance. After touting the key role he sees for nuclear power in the U.S. energy supply picture, Sec. Bodman expounded on the role his department plays in providing potentially high-value energy research, especially in areas that have little near-term commercial value.

Just what unique energy research does Sec. Bodman find promising? How about re-arranging the DNA of the lowly termite? Sec. Bodman discussed the growing role of ethanol in our transportation fuel mix, but questioned just how much acreage the United States could devote to raising corn as a feedstock. An important step for the growth of ethanol will be to find a cheaper raw material supply. He pointed out that the termite has in its belly a microbe that can digest wood fiber and turn it into gases, ethanol and waste products. The thought is to fund research in an effort to modify this microbe's DNA so that it would directly convert wood, or cellulose material, into ethanol. When he described the effort, it was like a light bulb lit up. We are well aware of termites, having battled an infestation at a Houston home in the past, but we never envisioned that through science they could literally become refineries.

That possibility was amplified later when we followed the breakfast presentation with a lunch one on the outlook for alternative fuel markets. We were sitting with a reservoir engineer who, when we mentioned Sec. Bodman's termite R&D efforts, reminded us that the oil industry has for many years been working with microbes for cleaning up oil spills and enhancing reservoir recovery.

We are still not sure we have gotten our mind around the need now to treat the termite with greater respect. We still want our exterminator to keep them away from our house and kill any that dare show up. But think about this for a moment: Ben Franklin wanted to make the wild turkey America's national bird instead of the bald eagle, and for years we used Smokey the Bear to promote forest fire safety. So what are the chances we elevate the lowly termite to be our symbol for energy security and a healthy environment?

Some readers may be familiar with the books "Salt: A World History," "Cod: A Biography of the Fish That Changed the World" and "The Big Oyster: History on the Half Shell" written by Mark Kurlansky. Each book relates the historical impact of the subject on the evolution of civilization or, in the case of the oyster, the history of New York City. Maybe Mark Kurlansky will be writing his next book

on the "Termite: How This Prehistoric Creature Saved the Modern World." Clearly the world will need something to save it from its addiction to oil.

## The Elephant and World Oil Prices

World crude oil prices have fallen by over 35% since last summer as warm winter weather, weakening economic activity and reduced geo-political tensions have collaborated to drive hedge funds and pension investors out of the energy commodity pits. In fact, the changed perspective about the geopolitics of energy has reportedly turned hedge fund investors from bulls to bears on crude oil futures. As a result, these investors are now selling crude oil futures short.

**High oil prices have curbed oil consumption in the developed world**

Last Friday, *The Wall Street Journal* carried a lead story on the impact that high oil prices have had in curbing oil consumption in the developed world. The story was based largely on the January monthly oil report from the International Energy Agency (IEA) issued the day before.

### Exhibit 12. Crude Oil Prices Have Fallen Dramatically



Source: Barchart.com

**The decline in oil consumption in 2006 marks the first measurable decline in annual demand in more than 20 years**

According to the IEA, oil consumption in the 30 member countries that make up the Organization for Economic Cooperation and Development (OECD) declined in 2006 by 0.6% from 2005's level. That marks the first measurable decline in annual demand in more than 20 years. On the day this news was reported, the price for crude oil to be delivered in February dropped by 3.4% to \$50.48 per barrel. During the trading day, oil prices fell below \$50 for the first time since May 2005, establishing a new 20-month low.

On Thursday, the IEA in its monthly energy report reduced its forecast for oil demand growth in 2007, which was followed the next day by a similar forecast reduction by the Organization of Petroleum Exporting Countries (OPEC). Since 2004, a year marked by

**Since August of 2006, both the IEA and OPEC have repeatedly cut their 2007 oil demand growth estimates**

spectacular oil demand growth that necessitated repeated upward revisions to energy demand growth forecasts by both bodies, they have returned to their more historical pattern of repeatedly cutting their early demand growth estimates. Since August 2006, the IEA and OPEC have repeatedly cut their 2007 oil demand estimates.

**Last August the IEA estimated 2007's demand growth at 1.9%**

In the IEA's latest monthly report, it reduced its estimate of 2006's fourth quarter oil demand by 450,000 barrels per day (b/d) to an annualized rate of 85.8 million b/d. The IEA attributed the demand reduction to warm winter weather, revised U.S. demand data and increased fuel switching from more expensive crude oil to cheaper natural gas. The continued warm winter weather coupled with a reduced estimate for U.S. economic growth in 2007 explains the lowered demand growth estimate for 2007. The IEA is now estimating that oil demand in 2007 will only increase by 1.6%, down from the 1.7% growth estimate made last December. More telling about the forecast reduction is that last August the IEA estimated 2007's demand growth at 1.9%.

OPEC's analysis is more or less consistent with that of the IEA. OPEC reduced its estimate of demand growth for 2006 by 100,000 b/d to 800,000 b/d, for a net 1.0% increase. For 2007, OPEC also lowered its demand growth forecast by 70,000 b/d to an increase of 1.25 million b/d, or a net 1.5% increase. Since OPEC's August forecast, its demand growth estimate has fallen by slightly over 400,000 b/d, although the annual growth rate has remained constant at 1.5%. Described by some as death by a thousand cuts, the consistent reduction of demand growth forecasts each month erodes investors' and speculators' confidence in the energy market projections from the two most knowledgeable organizations engaged in forecasting the outlook for the energy business.

**Lower oil demand should translate into reduced prices for refined products, most noticeably gasoline**

*The Wall Street Journal* article focused on the impact the oil demand reduction would have on consumers and various segments of the stock market. Lower oil demand should translate into reduced prices for refined products, most noticeably gasoline. That means more money in the hands of consumers and less in the hands of the oil companies. The same will be true with lower heating oil prices and reduced demand due to the warmer winter. Lower jet fuel prices are already helping the profitless-airline industry, which is beginning to remove fuel surcharges from ticket prices and starting to post positive earnings results.

In the newspaper article, Frederic Lasserre, head of commodity research at Société Générale in Paris was quoted as saying in response to a question about the tipping point for oil prices, "People wanted to know the point at which oil prices would affect demand; now they have the answer." But besides oil demand and high prices, the other dynamic that has been let loose in the energy business is the emergence of alternative energy supplies in response to the growing embrace of the need to quickly and radically address the issue of climate change and global warming.

**An OPEC organization research analyst mentioned alternative fuel supply growth is an issue OPEC is focused on**

We have previously written about a presentation we saw by an OPEC organization research analyst that mentioned alternative fuel supply growth as an issue his group was focused on. He pointed out that biofuels now account for 800,000 b/d of supply and is growing. The U.S. Energy Policy Act of 2005 mandated the use of ethanol in place of the MTBE gasoline additive and started the ball rolling for this alternative fuel in this country. Recently, a group of governors, operating as the Governors' Ethanol Coalition, published a report that recommends ways to expand ethanol production and make it more available to customers. The new report calls for ethanol to replace 25% of the U.S. demand for transportation fuel by 2025. The specific recommendations include:

- Change the Renewable Fuels Standard to specify new targets of 12 billion gallons per year biofuel use by 2010; by 2015, biofuels should account for 15% of U.S. transportation fuel and by 2025, biofuels should account for 25% of U.S. transportation fuel;
- Change the tax credit available for cellulosic ethanol production so that it is 1.5 times the current ethanol tax credit and allow cellulosic ethanol producers to receive both credits;
- Outline a specific timeframe for the development of E85 distribution infrastructure and require that at least 70% of the new vehicles manufactured be flex-fuel vehicles; and
- Provide financing for the biofuel research and development plans outlined in the Energy Policy Act of 2005.

**To get to 15% of fuel consumption by 2015, ethanol output would have to rise by 207% to 23 billion gallons**

What would these recommendations mean for the ethanol industry? Using the Energy Information Administration (EIA) [Annual Energy Outlook 2007 With Projections to 2030 \(Early Release\)](#) forecast for transportation fuels, we find some incredible demand projections. We started by looking only at the fuel demand projections for light-duty vehicles and commercial light trucks. Based on the EIA's forecast for 2012, the current 7.5 billion gallon mandate for ethanol use equates to 5% of total fuel demand. However, to get to 15% of fuel consumption by 2015, ethanol output would have to rise by 207% to 23 billion gallons. It would further need to rise by 3.8 billion gallons to reach the 25% demand threshold by 2025.

**If the industry is to meet the 25% market share target in 2025, then ethanol output would need to almost double from 2015 to 72.1 billion gallons**

If we look at the entire transportation fuel market, by 2012 the current ethanol mandate would account for 3.1% of the market. To reach the 15% share of the total transportation fuel market by 2015, annual ethanol output would have to climb from 7.5 billion gallons to 37.8 billion, essentially a fivefold increase. If the industry is to meet the 25% market share target in 2025, then ethanol output would need to almost double from 2015 to 72.1 billion gallons. If the Earth Policy Institute and agricultural experts are worried about the impact of the current ethanol mandate on the U.S. corn crop and food prices, these new recommendations would create an enormous demand on our agricultural industry that would probably result in an explosion in corn prices and the cost of foods dependent on corn.

**We are probably looking at an ethanol refinery on every corner to reach these market share goals**

As the American landscape has migrated from a gasoline station on every corner through cleaners, coffee shops and now banks on every corner, we are probably looking at an ethanol refinery on every corner to reach these market share goals. According to the IEA, the world output of biofuels for transportation use in 2005 was approximately 650,000 b/d, the equivalent of 1.95 million b/d of Middle Eastern crude oil. It said that based on current biofuel capacity-expansion plans, by 2011, the world output could climb to as much as 1.7 million b/d, or the equivalent of 5.1 million b/d of conventional crude oil. It is interesting that OPEC says biofuel output is 800,000 b/d and growing.

**Houston needs to be concerned about the growth of this alternative energy phenomenon**

Long-time energy economist Philip Verleger Jr. was quoted in *The Wall Street Journal* as saying, "Last year was a tipping point in a lot of ways." He talked about the fact that biofuels will meet an increased share of petroleum demand. In fact, he sees the potential for this fuel's supply growth to be so significant that it leaves conventional transportation petroleum demand static for the next few years. It is this scenario that our OPEC friend was hinting at when he admonished us to watch the growth of biofuels, as that was something OPEC was concerned about. Houston needs to be concerned about the growth of this alternative energy phenomenon.

Through all of last year we wrote and talked about the elephant in the energy industry's room. That elephant is energy demand growth. Everyone wanted to talk about all the other factors making crude oil futures prices volatile and explosive on the upside. They then focused on these same variables when crude oil prices started to drop. We cautioned that most were overlooking the demand side of the energy supply/demand equation. We had few facts to go on other than anecdotal evidence we were receiving of changes in consumer energy use patterns. These changes did have an impact.

**A recent poll reports that 77% of Americans say the U.S. must do more to spur green technologies**

Will these consumption changes become permanent or will the public revert back to its old consumption ways as oil prices drop lower? We would normally say YES, but new factors in the energy outlook - climate change and alternative energy - are likely changing the dynamics of the oil market. A recent poll by Zogby International and TechNet's Green Tech Task Force reports that 77% of Americans say the U.S. must do more to spur green technologies. Societal and governmental pressures, which currently are growing and appear to be overwhelming the petroleum industry, might alter permanently the future growth rate for conventional crude oil usage.

## **Bias in Public Opinion Energy Polls – Amazing!**

We were reading the daily energy newsletter published by broker Pritchard Capital that contained an item discussing the news that two experts on public opinion research were criticizing a poll taken of Long Island residents about the proposed Broadwater Energy offshore LNG receiving terminal to be built in Long Island Sound. This proposal has been the subject of recent hearings by the

**Two experts on public opinion research were criticizing a poll about the proposed Broadwater Energy offshore LNG receiving terminal**

Federal Energy Regulatory Commission (FERC) that drew significant criticism. The public opinion research experts say the poll, which showed 67% of Long Islanders favoring the project, was technically flawed and distorted the results because the polling people failed to advise the surveyed people that the project is controversial.

According to the story, this was a telephone poll conducted between January 3 and January 7 of 1,005 residents of Nassau and Suffolk counties on Long Island about their views of natural gas supplies, prices and environmental impacts before asking specifically about the LNG project. Supposedly, the poll takers prefaced the final question with the statement, "Studies have shown that the Broadwater project could save New York residents approximately \$300 on their energy bills per year." While the poll showed 67% support for the project, some 2,000 residents attended the hearings on the project and 55,000 people have signed petitions opposing the project.

We gather that these two experts believe that the poll takers should have prefaced the question with a statement that the project is "controversial" thereby alerting the surveyed to consider their views about the terminal from other perspectives than its ability merely to reduce their energy bills. To our way of thinking, however, the use of the word "controversial" might have injected bias into the polling results because the word carries various connotations.

**Bias can be introduced into a survey's results through the selective use of facts, even though they are facts**

Based on what we know about the economic benefits of the LNG terminal, we believe the statement used by the pollsters to preface the LNG terminal question is factual. To be fair, bias can be introduced into a survey's results through the selective use of facts, even though they are facts. Maybe there should have been a counter statement to the factual statement. Maybe that statement would have said something to the effect that Long Island residents' energy bills might continue to rise and quite possibly, residents may be facing blackouts or brownouts without the additional gas supplies that would be delivered via the LNG project. We guess the experts would have a problem with the content of those statements, also.

**The real message from the poll is that residents want the cheapest energy possible**

The real message from the poll is that residents want the cheapest energy possible. When they were answering the polling question, they may not have thought about other issues surrounding the LNG terminal. The absence of those thoughts does not invalidate the survey results from that question. Depending on how the survey results are used, that could constitute bias. The real issue is that if the residents don't want to invest in new infrastructure to expand the capacity for moving additional energy supplies into their region, then they need to understand, and be prepared to face, the economic consequences of that decision.

## Saudi Arabia Unconcerned About Falling Oil Prices?

Saudi Arabian Oil Minister Ali Naimi last Tuesday killed hopes for an emergency OPEC meeting to address the fall in global oil prices. His comments that the ongoing oil price slump was merely “short-term price movements” and stressing that “the market is getting healthier” as the large overhang of petroleum stocks in industrialized countries are diminishing, he erased any momentum for the meeting. As crude oil futures prices were flirting with \$50 per barrel, OPEC members Venezuela and Iran repeatedly have called for an emergency meeting to take further actions to support oil prices.

So why are the Saudis so unconcerned about the state of the oil market? Is it, as some suggest, that the Kingdom is trying to apply subtle pressure on its neighbor, Iran, to get them to comply with the agreed to OPEC production cuts, or to hurt Tehran’s oil income and pressure the country over its ability to export its radical political views in the region. Maybe there is another explanation.

Quite possibly Saudi Arabia has allowed oil prices to fall as it saw a lack of strict compliance by its fellow OPEC members and viewed the overwhelming negative sentiment in the crude oil trading pits driven by the hedge funds as a way of getting its cohorts back in line. For the past several years, the hedge fund community has become a major force in commodity pits. They made substantial money in 2005 and the first half of 2006 as crude oil prices climbed to the upper \$70. But when futures prices reversed and started their extended fall, many of these traders lost substantial money. That continued until the hedge fund community turned negative on the outlook for crude oil prices and began shorting futures, helping to drive prices lower.

You may remember that Ali Naimi was a vocal critic of the rise in oil prices last year. His lack of concern now about falling prices may speak volumes. While the Iranian pressure issue might be correct, we wonder about another scenario. Could it be that Saudi Arabia is hoping to suck more and more of the hedge funds into the crude oil futures market on the negative side before it significantly cuts its production and drives global oil prices up in a violent updraft? If that were to happen, hedge funds who have been building these large crude oil futures short positions would be severely hurt – possibly making them think twice about playing such a major role in commodities markets in the future. As a side benefit, current low oil prices matched by record high corn prices have wiped out profitability for most U.S. ethanol producers. In the end, Saudi Arabia may be trying to restore greater stability to oil prices that would enable the fundamental players in the business to send and receive more realistic signals about consumption and investment needs. Remember, Saudi Arabia wants, and needs, a healthy oil market to sustain the value of its resource and to plan its output investment accordingly.

**For the past several years, the hedge fund community has become a major force in commodity pits**

**Current low oil prices matched by high corn prices have wiped out profitability for most U.S. ethanol producers**

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