

## MUSINGS FROM THE OIL PATCH

March 18, 2008

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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

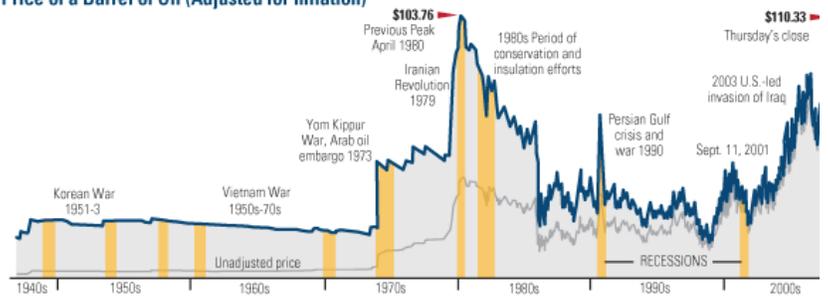
## Oil Prices Skyrocket While IEA Ponders Conditions

**Oil prices have been establishing records almost daily for the past two weeks**

By the time you read this, we may have heard the results of a meeting held by the International Energy Agency (IEA) in Paris on Monday to examine the causes of the recent leap in global crude oil futures prices. As oil prices have been establishing records almost daily for the past two weeks, the IEA is struggling to understand the industry dynamics underlying the price move. To try to resolve the conundrum, it has summoned representatives from the oil industry, global financial agencies and crude oil trading venues for a meeting in Paris where it hopes to gain a better understanding of the forces at work in setting current oil prices.

### Exhibit 1. IEA Wants To Know Why Oil Prices Are So High

Price of a Barrel of Oil (Adjusted for Inflation)



Sources: Federal Reserve; Energy Information Administration; Bloomberg Financial

Source: *The Wall Street Journal*

According to media reports, representatives from ExxonMobil (XOM-NYSE), Total (TOT-NYSE), Repsol (REP-NYSE) Shell Oil (RDS.A-NYSE) and ConocoPhillips (COP-NYSE) along with officials from the International Monetary Fund (IMF), the World Bank, the European

**The IEA has needed three months to assemble people who can help the agency understand the current market dynamics**

Central Bank and the New York and London commodities exchanges will gather to discuss the issue under Chatham House rules. Those rules allow for the use of data and ideas presented and discussed, but with no attribution. According to the IEA web site, planning for this meeting began three months ago, which suggests that it should not be considered an “emergency” meeting as we have seen it described in various energy publications.

It is also interesting that the IEA has needed three months to assemble people who can help the agency understand the current market dynamics. If the agency needs help and recognized that need three months ago, then quite possibly the IEA’s forecasts and analysis have been flawed. We already know that the IEA has begun a comprehensive examination of the production capabilities of the roughly 800 significant producing oil fields in the world to understand their capacity and potential decline rates. Again, we see an admission by the agency of a significant data deficiency that underlies the IEA’s forecasts. We guess it is better that they acknowledge their limitations and work to correct them before being totally discredited. That is probably a reason why we shouldn’t be too hard on the IEA in their forecasting.

**According to the IEA, their oil demand forecast for 2008 for OECD countries was cut by 190,000 barrels per day**

The beginning of last week, the IEA issued its March Monthly Oil Report in which it reduced slightly its forecast for 2008 global oil demand, while presenting the reduction in a neutral to positive tone. While the IEA admitted that \$100-a-barrel crude oil prices were continuing to chip away at oil consumption, it said this was only happening in the United States and other industrialized countries meaning Europe and other countries that are members of the Organization for Economic Cooperation and Development (OECD). However, the IEA said that there would be little price relief because of “brisk” demand in China and other emerging markets. According to the IEA, their oil demand forecast for 2008 for OECD countries was cut by 190,000 barrels per day to 49.27 million barrels per day (mmbd).

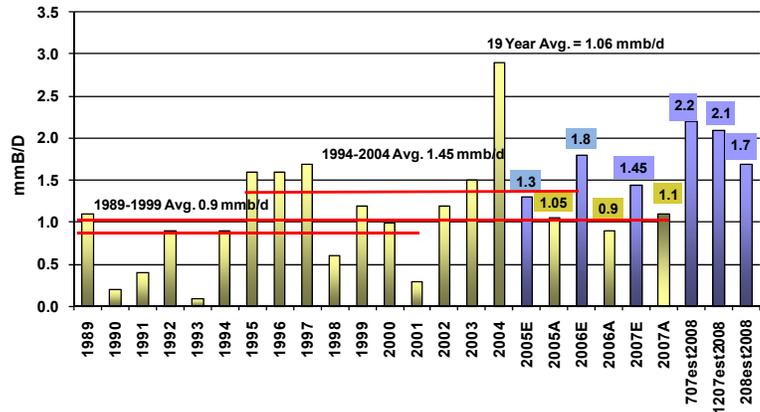
**The IEA boosted its 2008 oil demand forecast for China and other non-OECD countries by 120,000 barrels a day**

The IEA made a telling statement about its outlook and oil demand forecast when it stated: “In past years, falling demand in those areas [OECD countries] typically delivered some relief from high oil prices. But that rule-of-thumb carries far less weight today because most of the oil demand growth is coming from China, India and other fast-growing emerging markets, where consumers are largely protected from the effects of high oil prices due to fuel subsidies that reduce incentives for conservation.” Based on that philosophy, the IEA boosted its 2008 oil demand forecast for China and other non-OECD countries by 120,000 barrels a day to 38.27 mmbd.

In another one of those magical forecasting moments, due to baseline adjustments, meaning that it now has better data for 2006 and 2007 that raised demand in those years, the IEA increased its world oil consumption growth forecast by 60,000 barrels a day over its February demand forecast. The increase comes despite the net effect of its OECD and non-OECD demand adjustments that would

imply a net 70,000 barrels a day reduction. The agency now sees oil demand growth in 2008 increasing by 1.7 mmbd.

**Exhibit 2. IEA Forecasting Record Is Open To Challenge**



Source: IEA, PPHB

**This doubling in oil demand comes despite the IMF's recent reduction in its global economic growth forecast for this year that already was below the growth recorded last year**

In light of this new demand forecast we are confronted with several factors that make us wonder what we are missing in assessing global oil demand in 2008. The IEA's global forecast calls for a near 80% increase in the annual growth of oil consumption between 2007 and 2008, 1.1 mmbd versus 1.7 mmbd. (The 2007 actual may be revised lower.) This doubling in oil demand comes despite the IMF's recent reduction in its global economic growth forecast for this year that already was below the growth recorded last year. If we examine the economic data that has been issued in the U.S. over the past two months, it is clear that the economy is sliding toward zero or negative growth for the first quarter of 2008. The mushrooming credit market problems are taking a toll on U.S. economic growth and business and consumer sentiment suggesting that any recovery will be slow developing. Is it likely that U.S. economic growth will be greater this year than last? We think not.

**Exhibit 3. IMF 2008 Forecast Shows Slowing Growth**

|                      | 2005  | 2006  | 2007  | 2008  |
|----------------------|-------|-------|-------|-------|
| World                | 4.4%  | 5.0%  | 4.9%  | 4.1%  |
| Advanced Economies   | 2.5%  | 3.0%  | 2.6%  | 1.8%  |
| United States        | 3.1%  | 2.9%  | 2.2%  | 1.5%  |
| Euro15               | 1.5%  | 2.8%  | 2.6%  | 1.6%  |
| Japan                | 1.9%  | 2.4%  | 1.9%  | 1.5%  |
| Developing Economies | 7.0%  | 7.7%  | 7.8%  | 6.9%  |
| Asia                 | 9.0%  | 9.6%  | 9.6%  | 8.6%  |
| China                | 10.4% | 11.1% | 11.4% | 10.0% |
| Africa               | 5.9%  | 5.8%  | 6.0%  | 7.0%  |
| CEUR                 | 5.6%  | 6.4%  | 5.5%  | 4.6%  |
| Former USSR          | 6.6%  | 8.1%  | 8.2%  | 7.0%  |
| Middle East          | 5.6%  | 5.8%  | 6.0%  | 5.9%  |
| South America        | 4.6%  | 5.4%  | 5.4%  | 4.3%  |

Source: IMF, PPHB

**The European Parliament recently has proposed raising the minimum tax on diesel fuel to match the unleaded gasoline tax to prevent “fuel tourism”**

While European economic activity appears to be stronger than in the United States at the current time, the continent's 2008 outlook still calls for slower growth than it achieved last year. It is also significant that the European Parliament recently has proposed raising the minimum tax on diesel fuel to match the unleaded gasoline tax to prevent “fuel tourism.” The European Union wants the minimum tax raised for all but five EU member countries to prevent trucks from making detours to fill their tanks with cheaper diesel and unnecessarily damage the environment. The other five countries would be given an extra year to raise their minimum diesel fuel tax.

**China's economic growth forecast for this year has been lowered by almost two percentage points below the 11% growth recorded in 2007**

Historically, European countries have taxed diesel fuel at a rate lower than gasoline, which has encouraged the rapid growth of the diesel-powered automobile and truck fleets on the continent. While the final decision must be agreed to by all 27 members of the EU, proposals coming from the European Parliament are seldom rejected. Depending on when that tax adjustment goes into effect, other than a temporary demand surge right before its enactment, diesel consumption growth will slow as a result of higher taxes.

More importantly, China's economic growth forecast for this year has been lowered by almost two percentage points below the 11% growth recorded in 2007. China's oil consumption jumped in January and February (transportation fuel demand rose by 12% in January and gasoil consumption increased by 18%) as the country confronted the economic fallout from the late January snowstorms that disrupted coal shipments and, as a result, electricity output. Many businesses, homes and power plants started up small, portable power generators.

The late January snowstorms walloped China just as the country's traditional new year's celebration was beginning, stranding thousands of people planning to travel home or already in route. However, in February China's crude oil imports increased by 18% and it halted all oil exports to boost domestic oil supplies. The government also instituted tax hikes on domestic fuels designed to curb consumption.

**The EIA announced that it was increasing its forecast for the average price of crude oil this year to \$94.11 a barrel from its prior target price of \$86.46**

Last week the U.S. Energy Information Administration (EIA) announced that it was increasing its forecast for the average price of crude oil this year to \$94.11 a barrel from its prior target price of \$86.46. In 2007, the price of a barrel of oil averaged \$72.32. The decision to raise the forecast price reflects the trend in oil prices during the first two months of this year and the agency's view that oil demand will keep upward pressure on oil prices for much of the balance of this year.

**Exhibit 4. China's Export Sector Is Weakening**  
**Export Growth — Value vs Volume**

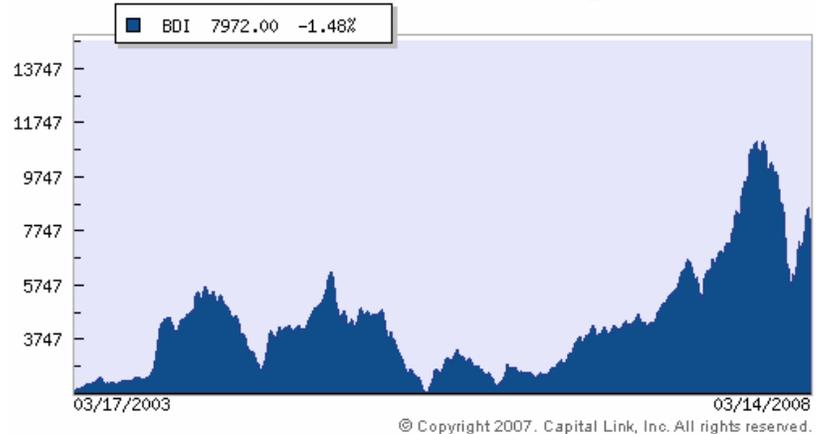


Source: Deutsche Bank, US Global Funds

**Recent economic figures from China point to the fact that its exports are declining while its imports are rising**

In order for the IEA's 2008 oil consumption growth forecast to occur, it has to fully embrace the decoupling theory of global economic activity. Yet recent economic figures from China point to the fact that its exports are declining while its imports are rising. The decline in exports is being attributed to the impact of the winter storms, just as the increase in energy supplies is touted as the primary reason for the increased imports. But what we have learned over the past several years is that China is no longer "the" low cost manufacturer. Increasingly it is becoming an assembler of components manufactured in other Asia countries, thus the reason for the strong growth in imports, along with its growing consumption of base minerals.

**Exhibit 5. Baltic Dry Index Reflects Weakening Global Trade**



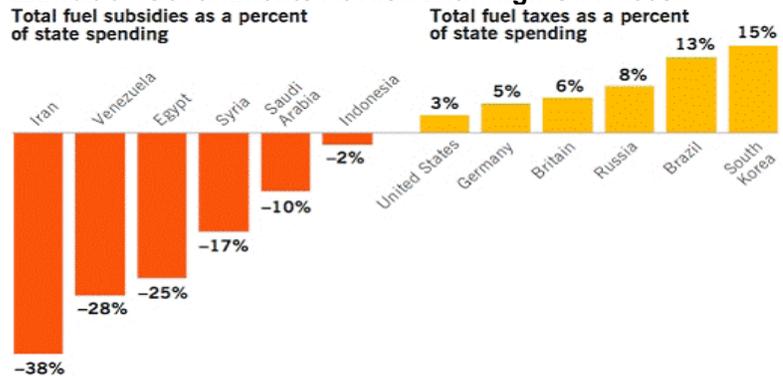
Source: Baltic Exchange

**Part of the rationale for continued oil demand growth in non-OECD countries is their continued willingness to subsidize fuel costs**

Part of the rationale for continued oil demand growth in non-OECD countries is their continued willingness to subsidize fuel costs. However, in a number of Asian countries we are beginning to see efforts to raise prices either directly or by restricting the amount of fuel that can be purchased. Other countries are starting to limit imports even though they are not raising prices, which will eventually reduce energy demand growth. With global crude oil prices above

\$100 a barrel, one has to wonder how long this practice of subsidizing fuel prices can go on before the governments go broke. In that situation, you could be faced with another Asian financial crisis as experienced in 1997-8.

#### Exhibit 6. Governments At Risk With High Oil Prices



Source: *The Economist*

**We are hard pressed to believe that oil demand growth will be twice the rate experienced last year when the world's economy was in better shape than it is now**

Given all these conditions, we are hard pressed to believe that oil demand growth will be twice the rate experienced last year when the world's economy was in better shape than it is now and looks to be for the balance of 2008. We acknowledge that there are more people in the world and that will account for some additional energy demand growth, but that has been true every year. One has to wonder what, if any, impact on energy consumption might occur after the August Olympic Games in China.

**Investment research shows that commodities, of which oil is a major one, provide a significant counterbalance to investor portfolios**

Clearly today's oil price is more a reflection of the supply and demand of U.S. dollars rather than barrels of oil and the role commodities represent in investment portfolios. How long will that situation last? Investment research shows that commodities, of which oil is a major one, provide a significant counterbalance to investor portfolios. That research is becoming gospel, which suggests that commodities will continue to play an investment role for a lot longer than many previously believed. However, the U.S. dollar and hard assets (commodities) cannot retain their vaunted status forever. At some point crude oil prices will return to their normal focus on the physical conditions within the global oil market. It may still be possible that oil prices will remain high because research shows that global supply is failing to grow sufficiently fast enough to keep up with even a slowly growing global oil demand. If so, then world economies will have additional and potentially more serious challenges than they are wrestling with now. That scenario will not be pretty. Let's hope we don't get there.

## Washington, D.C. Bureaucrats Practice to be Alchemists

We enjoy watching a segment of one cable news show entitled "What were they thinking?" that we always find fascinating and puzzling. But in Washington, D.C. some government bureaucrats

**The U.S. Energy Independence and Security Act of 2007 was designed to address a number of pressing energy supply issues confronting the country**

have to be pondering that very question when they examine the actions of Congress in making energy legislation. Last December, with great fanfare, Congress passed and President George W. Bush signed into law the U.S. Energy Independence and Security Act of 2007. The Act was designed to address a number of pressing energy supply issues confronting the country, but ultimately it became a patchwork of provisions designed to boost vehicle and appliance fuel efficiency and mandate the greater use of alternative energy supplies. The principle areas of focus of the legislation was to: 1) raise the corporate automobile fuel efficiency (CAFE) standards to 35 miles per gallon on average for the combined fleet of automobiles and light trucks by the 2020 model year; 2) boost the production of renewable fuels from 9 billion gallons in 2008 to 36 billion gallons in 2022; 3) increase the energy efficiency of lighting and residential and commercial appliance equipment; and 4) repeal the bulk of the oil and gas tax incentives previously provided the industry in the 2005 Energy Bill.

Buried in the legislation is Sec. 526, which triggers the “What were they thinking?” question. The following is the language of the controversial section that has called into question the use of a number of alternative energy sources the government has been counting on to meet our future transportation fuel needs.

**“SEC. 526: PROCUREMENT AND ACQUISITION OF ALTERNATIVE FUELS**

**Buried in the legislation is Sec. 526, which triggers the “What were they thinking?” question**

“No federal agency shall enter into a contract for procurement of an alternative or synthetic fuel, including a fuel produced from unconventional petroleum sources, for any mobility-related use, other than for research or testing, unless the contract specifies that the life cycle greenhouse gas emissions associated with the production and combustion of the fuel supplied under the contract must, on an ongoing basis, be less than or equal to such emissions from the equivalent conventional fuel produced from conventional petroleum sources.”

**One significant impact of this legislation is to ban the use of fuel produced from Canadian oil sands**

One significant impact of this legislation is to ban the use of fuel produced from Canadian oil sands. As the United States almost begged Canada several years ago to accelerate the development of its oil sands resources, reportedly the world’s second largest petroleum reserves behind Saudi Arabia, the U.S. government has now legislated that the largest fuel purchaser in the country, the federal government, would be prohibited from using fuel refined from this unconventional oil. The U.S. Department of Defense is the largest transportation fuel purchaser today. Already Rep. Henry Waxman (D-CA) has written Defense Sec. Robert Gates about how the military will guarantee that the fuel it purchases does not come from Canadian oil sands synthetic oil or from coal-to-liquids output. The Air Force recently tested a batch of jet fuel produced from coal and found it equal to conventionally produced jet fuel.

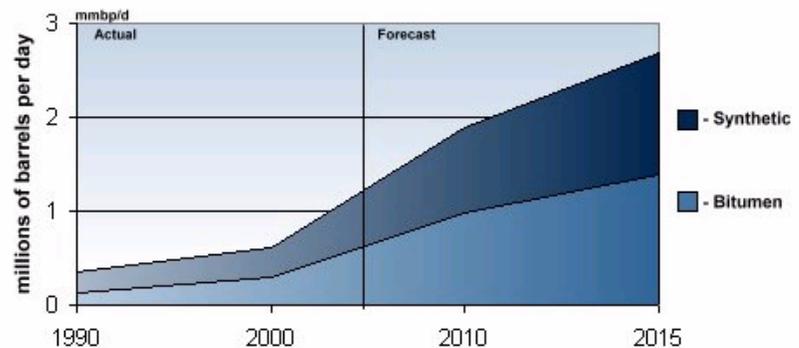
Additionally, the military would be prohibited from buying ethanol

**The life cycle greenhouse gas emissions over a 30-year period are twice as high from ethanol as those emitted from regular gasoline**

since it requires 1.3 gallon of oil to produce 1 gallon of ethanol. This conclusion is based on two recent studies – one published Feb. 7, 2008, in *Science Magazine* and a Feb. 7, 2008, study done by the University of Minnesota and Nature Conservancy. These studies show that the life cycle greenhouse gas emissions over a 30-year period are twice as high from ethanol as those emitted from regular gasoline.

#### **Exhibit 7. Oil Sands Are Crucial For U.S. Energy Supplies**

Alberta Oil Sands Production 1990 - 2015



Source: Alberta EUB

**The members of the interdepartmental working group are attempting to become alchemists**

We have recently learned that an interdepartmental working group is hard at work on trying to get oil sands oil reclassified as conventional oil. The argument they are trying to advance is that the oil sands deposits are well established. Oil sands production is currently averaging 1 million barrels a day (mmbd) and is projected to climb to 3 mmbd by 2015 and eventually to 5 mmbd. Based on the history of oil sands and its current and future production, that this is no longer a “science project” is what the bureaucrats believe should be the defining point separating conventional from unconventional oil resources. Clearly the members of the interdepartmental working group are attempting to become alchemists. In today’s world with oil prices of \$110 a barrel, oil sands oil turned into conventional oil is almost the equal of changing base metals into gold.

## **Dust Bowl Story a Grim Reminder of Humans Impact**

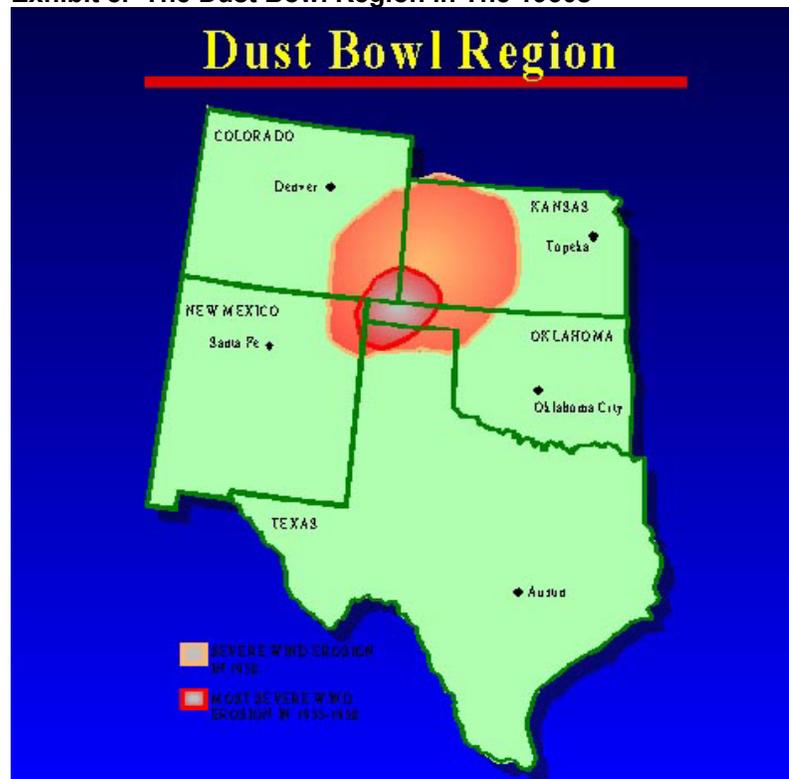
**Legendary oilman Boone Pickens has been playing this nation’s Paul Revere by spreading the word about our upcoming water crisis**

We have been following the discussion in the media and investment circles about the impending crisis for water resources both in the United States and globally. Legendary oilman Boone Pickens has been playing this nation’s Paul Revere by spreading the word about our upcoming water crisis, but he also has been actively positioning his investment fund to participate in the explosion in the value of water that will result. His view about water in the Southwest is similar to his view about oil and gas and that is that they are finite commodities and we are using them up so fast that we are bound to hit a peak in their availability sooner rather than later. When that happens, oil, gas and water prices have nowhere to go but up.

**Mr. Egan tells us what it was like to live in the region where the soil was dying and killing the economy, and the living conditions contributed to early deaths and lives of deprivation because of the constant dust**

While thinking about these issues, we recently finished reading Timothy Egan's book, The Worst Hard Time (Houghton Mifflin Company, 2006) which relates the story of people living in the region of the country that became known as the Dust Bowl during the 1930s. While most of us are familiar with the basic story of the Dust Bowl, when a multi-year drought and soaring temperatures combined with aggressive farming activity to destroy the soil and the economy of the region bringing social deprivation to the populace, we probably do not have a full appreciation for what it took to live and survive those conditions during that time. Many of us have read John Steinbeck's The Grapes of Wrath, which is identified with the Dust Bowl fallout, but it is really the story about those who were driven to move to California by the region's devastating economic and living conditions. Mr. Egan's book is quite different. He tells the story of the people who went to the region in search of new lives, struck it rich in the late 1920s and early 1930s because of unique economic conditions that drove agricultural prices sky high, and then how they struggled to survive when the weather and their farming practices wrecked havoc throughout the region. Using diaries and personal recollections, Mr. Egan tells us what it was like to live in the region where the soil was dying and killing the economy, and the living conditions contributed to early deaths and lives of deprivation because of the constant dust. This is an excellent book and we recommend it to our readers.

**Exhibit 8. The Dust Bowl Region in The 1930s**



Source: Wikipedia.com

**A vicious cycle commenced that found that the lower crop prices went, the greater crop acreage planted**

**He describes other storms that in some cases grew to measure 1,800 miles wide and covered a rectangle from the Great Plains to the Atlantic Ocean**

The book was published in 2006, and we cannot tell whether or not Mr. Egan's story-telling is influenced by the global climate change debate, or if it is an accurate representation of the politics and discussions surrounding the causes of and solutions for the Dust Bowl. The economic boom in the U.S. in the late 1920s offered new homesteaders in the Dust Bowl region that extended from the Texas Panhandle across the western strip of Oklahoma and western Kansas to the southeastern corner of Colorado and the northeastern top of New Mexico, the opportunity to grow wheat and other farm crops and become wealthy from the skyrocketing commodity prices. People who went there looking for a better opportunity for their families, or to start life after marriage, soon become wealthy. From horse-drawn plows to tractors and mechanized harvesting equipment, these farmers progressed. New homes, pianos, Model Ts and Model As, and all the other trappings of wealth were soon the norm in the region. But when the weather changed along with the economic health of the country as a result of the Great Depression, crop prices declined. In response to lower prices, and in order to sustain their incomes, farmers expanded their plantings. More crop land, even with declining crop yields, pressured prices. A vicious cycle commenced that found that the lower crop prices went, the greater crop acreage was planted.

The big miscalculation was that the prairie land in this region was never designed for massive agricultural operations. Poor soil, aggressive planting and worse land management practices contributed to the dust when the winds started blowing. Mr. Egan is good at describing the resulting storms such as the famous Black Sunday, of which there are number of well-known photos available. But he describes other storms that in some cases grew to measure 1,800 miles wide and covered a rectangle from the Great Plains to the Atlantic Ocean. These storms deposited dust over Scranton, Pennsylvania and Boston and even created partial darkness for New York City at times.

**Exhibit 9. Black Sunday, April 14, 1935**



Source: Western History Dept., Denver Public Library

**Exhibit 10. Garden City, Kansas 15 Minutes Apart Oct. 1935**

Source: U.S. Public Health Service, 1935

**A Harvard geologist told President Franklin Roosevelt that an irrevocable shift in nature was underway**

The Roosevelt Administration wrestled with what to do to solve the Dust Bowl problems. But there were conflicting views within the Administration and amongst its advisors. A Harvard geologist told President Franklin Roosevelt that an irrevocable shift in nature was underway, that the climate itself had changed and the cycle would last a hundred years or more and leave the southern plains a “desert waste.” The Agriculture Department said it was merely a severe drought cycle and that the country was already in year four of a 15-year cycle.

**Dust pneumonia swept the region killing young and old alike**

In 1935 it was estimated that 850 million tons of topsoil had blown off the southern plains or the equivalent of eight tons of dirt for every resident of the United States. For the farmers in the Dust Bowl, they had lost 480 tons of soil per acre, a devastating amount that left the region devoid of any hope of returning to its former agricultural glory. Besides destroying the economy of the region, it also destroyed the people who tried to endure living in a place where dirt and dust penetrated every orifice of the body and every square inch of living space. Dust pneumonia swept the region killing young and old alike. What was the government to do? Given the conflicting views within the Roosevelt Administration, the solutions were equally as conflicted.

**A tree cut down in 1936 showed from its rings that the plains of Nebraska had been through 20 droughts over the previous 748 years**

The Great Plains Drought Area Committee was organized to study the problem and offer solutions. In its preliminary report, it rejected the view that the problems came from climate change. It was a drought – a severe drought, but something the plains had experienced before. A tree cut down in 1936 showed from its rings that the plains of Nebraska had been through 20 droughts over the previous 748 years, and the region was now entering its 21<sup>st</sup> drought period. The shock for President Roosevelt, whose political and social philosophy was based on a belief in human initiative aided by government goodwill as a guiding force, was that people – not weather or bad luck – had caused the problem.

It was at this point we began to notice similarities in the reaction of President Roosevelt to this explanation and Vice President Gore’s view of the UN report on global warming – it’s all about people. In the case of President Roosevelt, who was in love with big, bold government projects and solutions for the country’s economic woes, he embraced a positive report from the Forest Service about trees

**Recently a report was published in Geophysical Research Letters suggesting that the only way to stop the rise in global temperatures will be to cut greenhouse-gas emissions to zero**

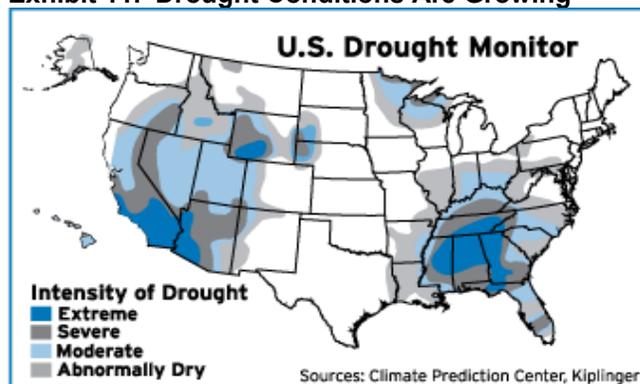
**Our drought areas appear to be growing, but quite possibly it is only a matter of time before local weather conditions change and reservoirs fill**

and their contribution to the environment. His vision was to plant a belt of trees hundreds of miles wide that would extend from the North Dakota border with Canada to just south of Amarillo, Texas. After an initial success, he sent his crews out again following a period of ferocious dust storms with the goal of planting two hundred million trees.

While Mr. Gore hasn't quite embraced the idea of planting trees on a massive scale, he does embrace making a lot of other radical changes to the lifestyle of average citizens in the name of preserving the environment. But just recently a report was published in Geophysical Research Letters suggesting that the only way to stop the rise in global temperatures will be to cut greenhouse-gas emissions to zero, about as ambitious a goal as one could imagine. It goes beyond the objective of legislation pending in Congress and about to be voted on. But then again, we were left shaking our head after reading the statement from the chairman of the White House Council on Environmental Quality, James L. Connaughton, who said, "We've done this kind of thing before. We will do it again. It will just take a sufficient amount of time." Even the anti-climate change Bush Administration has been pushed into supporting this concept. However, Mr. Connaughton was wise enough to imply we can "win one for the Gipper," unfortunately we don't know which game it will be.

What we do know about our climate and resources is that our water supplies are shrinking rapidly as our demand on them escalates. The drought that has hit various sections of the U.S. has forced cities and citizens to adjust their lifestyles to accommodate shrinking water supplies. Our drought areas appear to be growing, but quite possibly it is only a matter of time before local weather conditions change and reservoirs fill. A recent study by several scientists at the National Oceanic and Atmospheric (NOAA) has discovered a phenomenon that mid-week storms tend to produce more rain than weekend storms. Their view is that the increase in human activity during the week contributes to build up in climate forces that increase the volume of moisture that comes from these midweek storms in contrast to the forces being dissipated over the weekend.

**Exhibit 11. Drought Conditions Are Growing**



Source: Kiplinger Letter

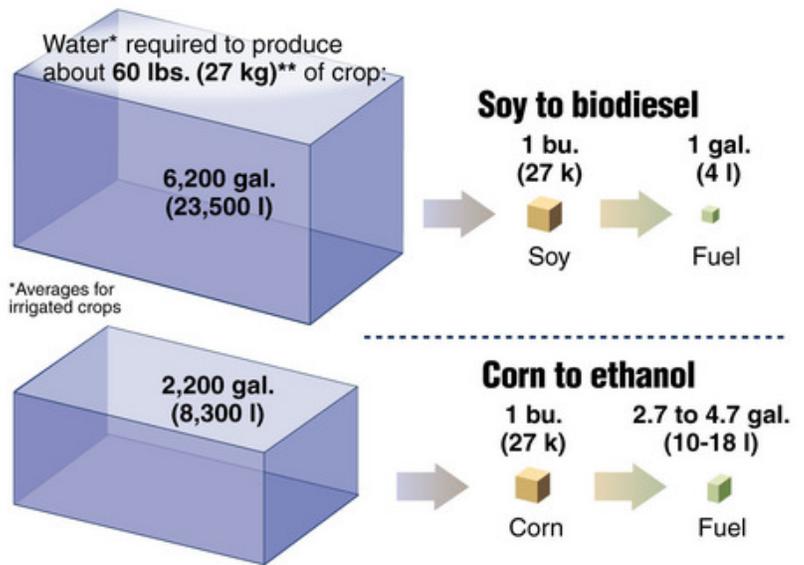
**Water is clearly becoming the third leg of the energy stool to power the United States**

Another problem with our water resources is that as a country we have adopted a philosophy that we need to promote the use of crop-based alternative energy sources in place of hydrocarbons. While water is an essential ingredient in creating these fuels, water also plays a role in the extraction and reformulation of hydrocarbon-based fuels. The bottom line is that without water, our ability to produce energy to power our economy will be severely challenged. Water is clearly becoming the third leg of the energy stool to power the United States. We may be beginning to witness the recognition that investment in water resources needs to grow as much as our investment in new oil and gas wells, coals mines and alternative energy sources, if the country is to avoid economic and social deprivation.

**Exhibit 12. Water Is The Third Leg of Our Energy Stool**

**Water essential to make energy**

*Water is needed for mining coal, drilling oil, refining gasoline and generating and distributing electricity. The amount of water needed to produce a gallon of fuel from corn and soybeans:*



Olympic pool holds about 648,000 gal. (2.5 million liters)

\*\*Equal to approximately one bushel

Source: U.S. Department of Energy

Graphic: Lee Hulteng, Judy Treible

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Source: McClatchey News Service

**Daylight Savings Time: Is Its Energy Saving Promise Valid?**

**The issue of whether any meaningful energy savings come from DST use are being questioned**

As the nation struggles to adjust to the start of daylight saving time – going to work or school in the dark and coming home in the daylight – the issue of whether any meaningful energy savings come from its use are being questioned. The idea of moving our clocks ahead one hour in the spring to gain additional daylight hours before turning

them back in the fall is to try to save energy. As the web site for the California Energy Commission puts it:

“One of the biggest reasons we change our clocks to Daylight Saving Time (DST) is that it saves energy. Energy use and the demand for electricity for lighting our homes are directly connected to when we go to bed and when we get up. Bedtime for most of us is late evening through the year. When we go to bed, we turn off the lights and TV.

“In the average home, 25 percent of all the electricity we use is for lighting and small appliances, such as TVs, VCRs and stereos. A good percentage of energy consumed by lighting and appliances occurs in the evening when families are home. By moving the clock ahead one hour, we can cut the amount of electricity we consume each day.

“Studies done in the 1970s by the U.S. Department of Transportation show that we trim the entire country’s electricity usage by about one percent EACH DAY with Daylight Saving Time.”

**Recent studies of the impact on electricity consumption from the use of DST are showing that there is little or no savings, and quite possibly it is actually costing consumers**

Recent studies of the impact on electricity consumption from the use of DST are showing that there is little or no savings, and quite possibly it is actually costing consumers. One study published in 2007 based on actual energy use in Australia with and without DST showed that the energy saved in the evenings was more than made up for by more energy needed in the darker morning hours. The study, performed by two professors at the University of California at Berkeley’s Department of Agricultural and Resource Economics, utilized data from two states in Australia that extended DST by two months to accommodate the 2000 Olympic Games in Sydney. The professors broke down energy consumption into 30-minute increments and incorporated weather and energy prices. Their conclusion was that there was no energy savings at all.

**The net effect was an estimated one-half of one percent energy savings, although the researchers suggest the savings could just as easily be zero**

The Australian study mirrors an energy use simulation study reported on by researchers with the California Energy Commission. That study found that if people maintain their daily schedules, early spring and later fall DST extensions would probably result in a two to five percent drop in the evening peak electric load, but morning electricity demand would grow. The net effect was an estimated one-half of one percent energy savings, although the researchers suggest the savings could just as easily be zero. In other words, there is no compelling evidence that DST saves energy.

A third study, conducted by a University of California-Santa Barbara economics professor and a Ph.D. student, measured electricity consumption in Indiana over the past three years and the impact of DST. Up until two years ago, only 15 of Indiana’s 92 counties observed DST. That was changed to put the entire state on DST beginning in the spring of 2006. This situation enabled the researchers to study seven million monthly electric meter readings from Duke Energy Corp. (DUK-NYSE) covering nearly all the

**Duke Energy did not endorse the conclusions that even the researchers admitted were “very preliminary”**

households in southern Indiana for a three-year period both before and after observing DST. The study concluded that observing DST in 2007 resulted in between a one percent and four percent increase in energy consumption, costing these Indiana households an additional \$8.6 million in electricity bills. The reduced cost of lighting in the afternoons during the extended DST is more than offset by the higher air conditioning costs on hot afternoons and increased heating costs on cool mornings. The study also showed that the social costs from increased emissions were estimated at between \$1.6 million and \$5.3 million per year.

Duke Energy has said that even though they provided the researchers the data, it did not endorse the conclusions that even the researchers admitted were “very preliminary.” The company’s concerns about the conclusions are based on the fact that it did not fully analyze the impact of weather conditions (although the researchers claim to have adjusted for weather), failed to consider that most Duke customers do not use electricity to heat their homes, and did not include energy data from business and industry, the largest user of electricity. However, the chief economist for Duke admitted that this study provided some interesting data and conclusions.

The effort to push through the extended DST period as part of the 2005 energy legislation was based on the conventional wisdom about energy savings arising from 1970s research. A 1975 study by the U.S. Department of Transportation that examined the 1974 and 1975 emergency DST extensions employed during the oil embargo concluded that they reduced electricity demand by one percent in March and April. That conclusion was later refuted by a 1976 evaluation done by the National Bureau of Standards of the 1975 analysis, which found that there were no significant energy savings from the DST extensions. As often happens, the correction was relegated to a footnote of history.

**Fewer traffic accidents and crimes occur as a result of lengthened daylight hours can justify DST even if energy savings do not**

Regardless of the conclusions of the recent studies, and even the rejection of the estimated savings from the 1975 study, DST appears to be ingrained in our economic and social existence. While energy savings does not appear to be a reason to sustain the practice, there are other significant reasons why it probably should be embraced. Those reasons relate to studies that show that fewer traffic accidents and crimes occur as a result of lengthened daylight hours. Extended DST may also contribute to more family time and greater social activities, and certainly to increased physical exercise opportunities. All of these are great reasons to continue with DST, but counting on it as a partial solution to our energy challenges appears to be a misguided conclusion.

## **New England Wind Power Plans Still Unsettled**

Last Tuesday evening, the first of four scheduled public hearings soliciting comments on the Minerals Management Service’s

**The Cape Wind EIS was released in January and showed that there would be at most minor or negligible impacts on wildlife, tourism, fishing and navigation in the area**

Environmental Impact Statement (EIS) on Cape Wind's proposed 130 turbine wind power project to be located in the Horseshoe Shoals area of Nantucket Sound was held in South Yarmouth, Massachusetts. The EIS was released in January, almost a year after being ordered, and showed that there would be at most minor or negligible impacts on wildlife, tourism, fishing and navigation in the area. The Cape Wind project is designed to supply the equivalent of 75% of Cape Cod's electricity needs with environmentally friendly renewable power.

To help push this greenhouse-gas-free energy solution along, a lobbying group, Clean Power Now, has brought people from Appalachia to the hearings to describe the impact that mountaintop-removal coal mining has had on the environment of that region. These people will also discuss the impact on the lives of the residents in the region. Coal still accounts for slightly over 50% of all the fuel that produces electricity in this country.

**Blue H Technologies has proposed an offshore wind farm to be located 23 miles south of Martha's Vineyard in deep water**

On the same day the hearings were set to begin, a proposal for a new deepwater wind power project in the Cape Cod region was announced. Blue H Technologies, a private European company, has proposed an offshore wind farm to be located 23 miles south of Martha's Vineyard in deep water. This "out of sight" wind farm proposal is being viewed somewhat skeptically by Cape Wind proponents who question the timing of the announcement. There are significant technological challenges to anchoring wind turbines in very deep water in contrast to Cape Wind's turbines that would be located in water depths ranging between 12-ft. and 45-ft.

#### **Exhibit 13. Nantucket Sound is Ground Zero in Wind Debate**



Source: Yahoo.com

**CRMC will be working with officials from the University of Rhode Island to determine which coastal areas are candidates for offshore power projects and which areas are too sensitive or inhospitable for facilities**

**The RI governor's goal is for the state to generate 15% of its electricity from renewable sources in ten years**

About the same time as the hearing and new proposal, Rhode Island's Coastal Resources Management Council (CRMC) met to consider a proposed one-year moratorium on proposals for new offshore power projects. The moratorium request was made by CRMC's Executive Director who said CRMC needs the time in order to survey the coastal waters and define zones that would be appropriate for offshore energy projects. CRMC will be working with officials from the University of Rhode Island to determine which coastal areas are candidates for offshore power projects and which areas are too sensitive or inhospitable for facilities. Among attendees at the meeting who objected to the moratorium proposal was the governor's energy advisor. His concern was the message the enactment of a moratorium would send to possible energy project developers and their possible investors.

Now that Rhode Island will not ban offshore alternative energy proposals from being submitted, there are potentially other trends that may stimulate them. Rhode Island Senate President Joseph Montalbano introduced four bills promoting renewable energy sources. These bills are in concert with the governor's goal for Rhode Island to generate 15% of its electricity from renewable sources in ten years. Sen. Montalbano's most important bill would require the state's largest energy provider, National Grid plc (NGG-NYSE), to enter into contracts with renewable energy providers for a "commercially reasonable" amount of time. While that time period has not been defined, the thrust of the legislation would be to forge a market for renewable energy even if it costs more than alternative conventionally-produced energy.

#### **Exhibit 14. Newport, RI Wind Turbine**



Source: Betty Brooks photo 2006

Our sense is that the environmental movement in New England is starting to win the battle over what energy sources will supply electricity in the region. The political class in the region is splitting

**With energy costs climbing and environmentally-friendly fuels gaining increased acceptance, we are nearing a tipping point for offshore wind power projects in the region**

with those objecting to clean energy proposals because of visual pollution. These Not-in-my-back-yard (NIMBY) people are starting to lose the legal and media battles over clean energy projects. With energy costs climbing and environmentally-friendly fuels gaining increased acceptance, we are nearing a tipping point for offshore wind power projects in the region. Whether they can impact our national energy supply remains a big question mark, but they can have some marginal impact on energy supply in the Northeast. We will likely need every bit of every alternative fuel to meet our future energy needs, especially in an environmentally-friendly way.

## **NOIA Preps For Democrats With Program Lineup**

The National Ocean Industries Association (NOIA) annual meeting held last week in Washington, D. C. featured two presentations that seemed to be a subconscious acknowledgement of the past administration of President Bill Clinton and the possibility that the current campaign promise of Democratic presidential contender Sen. Hillary Clinton (D-NY): two for the price of one, might become a reality. We have heard from the Democratic campaign trail the Clintons using the idea that voters will get two great leaders for the price of one if they vote for Sen. Clinton, since the former president will become a de facto vice president. The most recent version of this two-for-one marketing approach was Sen. Clinton's offer to have her presidential adversary, Sen. Barack Obama (D-IL), fill the vice presidential slot on her ticket. However, under either of these Clinton-Clinton or Clinton-Obama tickets, the voters get a double dose of the same philosophy.

**What was different about the NOIA twofers is that they involved participants from opposite ends of the political spectrum who actually agree about certain fundamentally important energy and/or political issues**

What was different about the NOIA twofers is that they involved participants from opposite ends of the political spectrum who actually agree about certain fundamentally important energy and/or political issues. One twofer involved Rep. Neil Abercrombie (D-HI) and Rep. John Peterson (R-PA) who have reached the same conclusion that our citizens and politicians can no longer fight over energy legislation because the issue is too important for the future of the country. They acknowledge differences in how things should be done, but they believe that the public needs to be educated about where the country is in its energy supply situation and why that position has contributed to the recent rise in energy costs. These two representatives believe that if educated and presented with the facts and the alternatives, Americans will embrace the correct course of action that will best serve everyone going forward, and not necessarily the cheapest or easiest solution. This means politicians should not be battling to win mandates for particular fuels or alternative energy solutions at the expense of other possibilities, but rather we should let the people determine which fuels and life style changes they are prepared to support and adopt.

The other twofer panel paired conservative syndicated newspaper columnist Cal Thomas (and former Houston Channel 2 newsmen) and liberal Democratic political consultant Bob Beckel. These two

**Their message: if we can turn down the volume and listen to the ideas of our opponents and debate the merits of those ideas rather than becoming emotionally enraged at the person, we would find many more areas of agreement than presently perceived**

**We have always believed that if informed, Americans will make the right decisions**

gentlemen are collaborating on a column for *USA Today* and have written a book in an attempt to find “common ground” that can unite all Americans. Their message, which comes from the opposite ends of the political spectrum, is that if we can turn down the volume and listen to the ideas of our opponents and debate the merits of those ideas rather than becoming emotionally enraged at the person, we would find many more areas of agreement than presently perceived. That style, they believe, could go a long way to putting the country back on the right track for solving many of the highly explosive social, economic and political issues confronting our country. For those who are tired of the ranting and ravings of the hosts and guests on cable news and talk radio shows, this message is very appealing. Unless some change occurs, one has to worry about the future course of our country and its leadership role in the world.

We thank the program organizers at NOIA for showing us that there are twofers coming from significantly different political starting points that can unite on these critically important issues. We have always believed that if informed, Americans will make the right decisions. The actions are always too slow for some, and too fast for others, but over time they have proven just right in helping build this fabulous country we live in.

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