PPHB
ENERGY INVESTMENT BANKING

MUSINGS FROM THE OIL PATCH

May 24, 2011

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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 and planning for the future. The newsletter is published every two weeks, but periodically events and travel may alter that schedule. As always, I welcome your comments and observations.* Allen Brooks

"And I Can't Wait To Get On The Road Again"

Once again, just as Willie Nelson has written and sung we're:

"On the road again
Goin' places that I've never been
Seein' things that I may never see again
And I can't wait to get on the road again"
(On The Road Again, music and words by Willie Nelson)

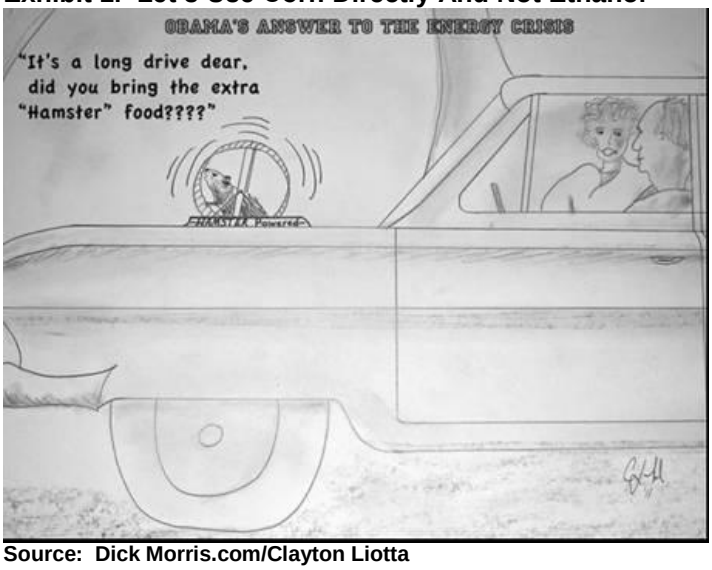
The funny thing this time was we finished the trip in two days, almost because we had to

Last Thursday morning my wife and I hit the road on our annual trip to our summer home in Charlestown, Rhode Island, some 1,900 miles distant from Houston. While we left early on Thursday – 6am – our plan was to take three days and two nights to make the drive. That pattern has become our norm in recent years as there has been less of a time-pressure to get there as quickly as previously. In those early years we made the trip in two days. The funny thing this time was we finished the trip in two days, almost because we had to. The reason why was, quite simply, there was less traffic (except for the George Washington Bridge) and fewer construction delays. So what does this say about the health of our economy?

Could it be that the morning commuting peak time has shifted during the past five years?

Our first major impression on the trip was how little early morning rush-hour traffic there was heading into downtown Houston for work. We were making the first leg of our trip on I-10 just as we used to for most of our career when we commuted to Houston for work. Maybe it's the recently widened highway with its High Occupancy Vehicle (HOV) and carpool lanes that eased the traffic load. Or maybe it was just the time of day. Could it be that the morning commuting peak time has shifted during the past five years since we stopped commuting downtown? Based on media reports of comments from economic forecasters, it's hard to think that downtown Houston – the home of many of this nation's leading oil and gas and oilfield service firms – is suffering from the national "slow growth" economy.

Exhibit 1. Let's Use Corn Directly And Not Ethanol



Source: Dick Morris.com/Clayton Liotta

We guess we can look forward to improved driving experiences in the future

While contemplating the meaning of the light commuting traffic, we were pleased to find that virtually all the highway construction on the east side of Houston has been completed. It sure made that part of the drive less challenging than in the past, and quicker, too. In general there was considerably less new highway construction and repairs ongoing on our route than at any time in the past decade. The projects underway at this time were those that had begun one or two years ago. Several of those projects involve significant expansions and rebuilding efforts for highways and bridges. Hopefully, we can look forward to improved driving experiences in the future, but our sense is that it will be another two or three years before these projects are completed.

Could this mean that Texas and Louisiana have decided that their police force must to be mobilized to increase their state's income?

The most surprising development, however, was that by the time we stopped for gasoline in Lafayette, Louisiana we had seen more police officers and "working" police officers than we normally see on the entire journey north. There were numerous cars pulled over with policemen writing traffic tickets, a significant number of police officers "shooting" their radar guns at the flowing traffic and police cars escorting oversized trucks hauling new bridge supports for the I-12 road upgrading project underway between Baton Rouge and Slidell. Could this mean that Texas and Louisiana have decided that their police force must to be mobilized to increase their state's income? A recent analysis by *The Houston Chronicle* of the contribution to the city's income from police citations showed that their contribution had declined due to the city's financial difficulties created by the recession. Houston's police force has had its overtime cut back, which has been pointed to as the reason for the drop in citations.

The police presence was further highlighted by our gasoline stop.

Instead of an officer bike ride, this looked like a serious police action

Once off the highway, we turned toward the gas station we had chosen only to find a sea of police cars with their lights flashing and an RV all heading toward the gas station across the street from our choice. The police cars were from the sheriff's department. It was only as we prepared to turn into our gas station that we discovered the police cars and RV were escorting a group of deputies riding bicycles. We kept looking for a sign as to the reason for the bike ride, but never saw one. Then, as we were heading back to the highway and were turning into the entrance ramp we saw another group of police cars with flashing lights and officers running toward a discount store. Instead of an officer bike ride, this looked like a serious police action. I wondered whether the police seeking to apprehend a possible criminal knew they had about two dozen backup officers merely on the other side of the highway.

We discovered during this stretch that New York has the most aggressive, least courteous and dangerous drivers we encountered anywhere

The only two times we hit serious traffic jams was the evening rush hour in Birmingham, Alabama on the first day and at the George Washington Bridge late our second night. One was the result of the natural functioning of the city while the other was due to night construction that restricted access to the bridge coupled with a broken down truck at the other end of the bridge. We discovered during this stretch that New York has the most aggressive, least courteous and dangerous drivers we encountered anywhere. Maybe that was because we were in the New York City metropolitan area and the pressures of living in the city turn people into aggressors. As we contemplated that cause-and-effect relationship, we wondered about the soundness of the recommendations of environmentalists who insist this country needs to reverse its suburban migration pattern in order to get more people into our cities in order to more efficiently utilize our energy and other resources.

Prior to leaving on our trip, our son had alerted us to the potential of encountering problems in getting access to services in areas where the spring tornadoes had hit in the southeastern region. We were quite familiar with the devastation in the Tuscaloosa, Alabama area caused by one set of tornadoes. As we approached that area on our drive, we did see some highway signs that had been twisted and bent. There were various highway signs that are used to signal the location of lodging, food and fuel that had been unbolted and laid over so they were not visible. Clearly, some or most of those advertisers were not functioning, although we did not verify that conclusion.

On both sides of the highway we could see the wreckage caused by one or more tornadoes that touched down in early April

The most shocking sight was a stretch of I-81 near Abingdon, Virginia. On both sides of the highway we could see the wreckage caused by one or more tornadoes that touched down in early April. We have seen storm damage over the years caused by hurricanes and tornadoes, but one can never get over the shock of seeing it. Tornadoes may be the worst because there is often a fine line between no damage and total destruction. We saw homes in all conditions: some with the notorious blue tarps covering their roofs;

Exhibit 2. Abingdon Was Hit By April Tornadoes

Source: Google Maps

Trees in the area looked like sharpened pencils stuck in the ground

two-story homes with only one or two partial walls standing; clean home foundations with a nearby rubble pile; and homes with virtually no damage. Trees in the area looked like sharpened pencils stuck in the ground; they were devoid of any limbs and had bright yellow pointed tops demonstrating the impact of having had their tops twisted off. There were large piles of rubble everywhere with bulldozers and backhoes moving and loading the trash into dump trucks that were hauling it off.

Exhibit 3. Abingdon Is Located At Red Dot

Source: *Wikipedia*

Across the highway was another iconic billboard asking: Where's the birth certificate?

Another thing that caught our attention was the sequence of messages contained in a string of billboards along I-10 in Louisiana. The first one was advertising classes at a technical training school and proclaimed that prison classes don't help. The second billboard was advertising bankruptcy help from a law firm that paid for the sign. Last was the billboard sponsored by a Christian religious group announcing that Judgment Day was coming and the world was going to end on May 21st. (If you're reading this then you can rest assured that the world didn't end.) Across the highway was another iconic billboard asking: Where's the birth certificate? We guess that sponsor hasn't renewed his contract!

Our lunch stops at various McDonald's (MCD-NYSE) restaurants provided some interesting observations. The first day we stopped early (11:30am) but there were very few patrons present. We found that somewhat surprising as that is almost the peak time for eating lunch in Houston. The next day we stopped for lunch in Lexington, Virginia where we confronted one of the most active

Exhibit 4. Prophecies Are Like Forecasts

Source: JudgmentDay2011.com

McDonald's since our stop last year at one in the Great Smoky Mountains in the middle of summer. Maybe the Lexington activity was due to it being a combined gasoline station and fast food restaurant near a highway, or maybe because it is located in a town that is home to two historic institutions of higher learning – Washington and Lee University and Virginia Military Institute.

What we noticed was that there were very few customers, something that struck us as strange

Dinner time also produced some interesting comparisons. The first evening we stopped at our favorite road trip restaurant – Cracker Barrel – in Gadsden, Alabama. Again we were on the early side – 5:30pm – but a time which is often dominated by the elderly and young families. What we noticed was that there were very few customers, something that struck us as strange. There didn't appear to be many locals eating, something we have always observed in our previous trips. A sign of the economy?

We wondered whether we had wandered into a convention for senior citizens

The second night was also interesting. We stopped in Clinton, New Jersey off I-78. The time was about 5:45pm and the restaurant was packed. As we were being escorted to our table, we wondered whether we had wandered into a convention for senior citizens. They were everywhere! When we got to our table in a third dining room, there were several senior citizens but probably more families. Of course, this was a Friday evening, but the senior citizens certainly overwhelmed the restaurant. As we were leaving after dinner we heard one elderly gentleman tell another that the bus was there, confirming our suspicion that we were in the midst of an organized seniors group.

Throughout the trip we were surprised by the lack of automobile traffic

Since traffic was light and there were few congestion issues, we made rapid progress heading north. With a new and shorter route, the faster travel time put us into New Jersey at dinner time making it worth the effort to push on to our house. As we finished dinner we estimated that if we kept up with our rate of progress up until then, we would reach Rhode Island between 10pm and 10:30pm. Unfortunately we were much too optimistic. The lost hour plus due to the traffic congestion at the George Washington Bridge meant we didn't arrive at our house until 11:30pm. Throughout the trip we were surprised by the lack of automobile traffic, which we have to attribute to the price of gasoline and the health of the economy.

Our perception of the truck traffic is consistent with what we believe the economic statistics are suggesting – a busier economy but not a booming one

We actually saw more trucks than we expected, especially along certain stretches of highway. The truck traffic on I-10 was normal. At one point it looked much heavier on the westbound side, especially as we crossed the Atchafalaya basin bridge. On the other hand, there was little truck traffic in Mississippi, Alabama and Georgia. The truck traffic in Tennessee and Virginia was heavier, but it almost always seemed to be bunched up. That bunching made us wonder whether the trucks were traveling together in a sort of drafting procedure, much like when bicycle riders stay in line behind the first rider letting him do all the blocking of the wind. We also noticed there were fewer trucks in the various rest stops. That may mean that more of them were trying to work longer hours, or maybe they were spending time at their pickup or delivery destinations. In any event, our perception of the truck traffic is consistent with what we believe the economic statistics are suggesting – a busier economy but not a booming one, and certainly not an economy commensurate with what existed before the 2008 financial crisis.

Exhibit 5. Atchafalaya Basin Causeway

Source: steelbuildingshq.com

Our final observation was related to the Mississippi River and the flooding situation in Louisiana. As we drove across the Atchafalaya causeway, we remarked about the level of the water and the fact that a certain area of it seemed to be moving fairly quickly. We also commented on the portable electric signs warning about wildlife crossing the highway, presumably being driven out of their normal habitat by the flooding. Since this flooding is unusual, there are no permanent signs warning about wildlife crossing.

We saw tow/push boats moving down river with barges, and later learned that several had broken loose, hit the bridge and sunk on Friday

As we approached Baton Rouge, we saw where levees had been buffered with additional dirt and padding to prevent overflowing. The other observation was the speed of the water flowing down the Mississippi River. We saw tow/push boats moving down river with barges, and later learned that several had broken loose, hit the bridge and sunk on Friday. On hearing that news, we were happy we crossed the bridge on Thursday.

Exhibit 6. Basin Gets Water From Mississippi River

Source: Louisiana.sierragroup.com

We found ourselves with many conflicting impressions

After driving 1,900 miles through 13 states and watching the traffic, the numbers of people eating at restaurants and staying at our hotel (packed), we found ourselves with many conflicting impressions. As we think about it, our impressions would seem to support the muddied view of the health of the economy.

Government, Energy Efficiency And Dirty Clothes

For the good of fighting global warming, all Americans will soon be subject to potential mercury poisoning

Most of us are familiar with the efforts of our politicians and bureaucrats to enact a policy that bans the sale in this country of the traditional incandescent light bulbs of the kind Thomas Edison worked so hard to develop in the late 1800s. Since these light bulbs are less energy-efficient than compact fluorescent light (CFL) bulbs, the powers-to-be in government decreed that the public must substitute these spiral-shaped bulbs for our traditional incandescent bulbs even though CFL bulbs introduce a more hazardous substance into our living areas. For the good of fighting global warming, all Americans will soon be subject to potential mercury poisoning should you ever break a CFL bulb in your home.

Does anyone find it interesting that today we are having a debate/battle over the amount of radiation emitted from the full-body scanners many of us must pass through at airports in order to board an airplane, but there was little or no debate about the amount of mercury in CFL bulbs and the potential harm it could bring to Americans? Now we have the regulators getting involved in other areas of our lives with equally sinister outcomes. Forget the Transportation Safety Authority (TSA) rules and regulations about

the amount of liquids you can carry on a plane or the fact that you have to take your shoes off to pass through the metal detectors or the Environmental Protection Agency (EPA) rules on carbon emissions.

Now what we are learning is that the government, in its effort to promote energy efficiency at all costs, is now mandating that you wear dirty clothes. Bet you didn't know that! The evolution of modern society has progressed on the backs of several revolutionary technologies. The harnessing of power through the development of the steam engine and its mechanical iterations utilizing progressively more energy-efficient fuels was a very important technology. The most important technology was arguably the perfection of electricity generation and the ability to distribute it among the population. Electricity enabled people to extend their work day and increase their productivity. Electricity led to the development of refrigeration that eliminated the need to obtain food every day in order to survive. Electricity enabled the development of labor-saving devices that eased the workload of people. One of the most important of these labor-saving devices was the washing machine.

One of the most important of these labor-saving devices was the washing machine

Hans Rosling, a demographic researcher, has called the washing machine the greatest invention of the Industrial Revolution. In his view, the washing machine defines the line between poverty and prosperity around the world as it frees women from the task of boiling water and washing clothes. Merely two generations ago, every woman was a slave to that task, but today in most of the world, no one is. Instead, women can read, do professional work, teach children or engage in other activities that build a better civilization.

The washing machine defines the line between poverty and prosperity

Exhibit 7. Hand-crank Washer

Source: Photobucket

Following World War II, electric automatic washing machines replaced the hand-cranked ones that had existed up until then.

In 1956, Wisk, the first liquid detergent was introduced

Soon thereafter, detergent replaced soap and eventually competition introduced new and better cleaning products. In 1956, Wisk, the first liquid detergent was introduced and in 1968 its famous "Ring around the collar" advertising program promoted the product into a market-leading position. These developments helped evolve the task of clothes washing from a weekly chore consigned to the woman in the home to a daily one that could be performed by anyone in the family.

Exhibit 8. Top-loading Washer

Source: Photobucket

The testing agency found that with plenty of hot water and any decent detergent, any washing machine would get your clothes clean

Today, the societal advances driven by the washing machine are slowly being eroded by the tight fist of government. *Consumer Reports* magazine tested 18 models of washing machines in 1996 and rated 13 models as "excellent" and five as "very good." The testing agency found that with plenty of hot water and any decent detergent, any washing machine would get your clothes clean. Just over a decade later, the testing organization assessed 21 models and rated none of them as excellent and seven as poor. The remaining machines were rated mediocre. All the old top-loading machines were rated mediocre or worse.

None of the new front-loading machines performed as well as a mediocre model from 1996 assortment

Consumer Reports found that in most cases your clothes were nearly as dirty as they were before washing. Additionally, it found that the newer front-loading machines worked better, but they were much more expensive and subject to developing mold. For most of us, the fact that you can't add that missing sock once the washing process has begun makes front-loading machines less desirable. Equally interesting was that none of the new front-loading machines performed as well as a mediocre model from 1996 assortment.

Less water means the machine uses less energy to spin the clothes

Between 1996 and 2007, the government's energy-efficiency standards were significantly increased. In order to meet those tougher standards, manufacturers had to switch from top-loading to front-loading machines, which were more "energy-efficient," and to design washers that used less water. Less water means the machine uses less energy to spin the clothes with the water and detergent, and it means there is less rinsing, which is vital for getting

clothes clean. The industry's response reminds us of the move to low-water-use toilets that have consistently drawn consumer ire at their lack of disposal capability.

Exhibit 9. Front-loading Washer

Source: Photobucket

The easy stuff like sweat is mostly removed, but all the tough stuff like grease and body oils largely remains

The result of the change in machine design is that clothes come out of the washer still dirty. According to the *Consumer Reports* tests, the easy stuff like sweat is mostly removed, but all the tough stuff like grease and body oils largely remains. Most people don't realize this problem. That's because they either have older machines, they don't do their own laundry or they are just oblivious to the problem.

Phosphates were banned because of the inability of local water treatment systems to remove the residual phosphates from the dirty water

Another problem with clothes washing is the ban on phosphates in laundry detergents. That ban was put in place in the mid-1990s, which just happens to coincide with the 1996 rating of washing machines. Phosphates were banned because of the inability of local water treatment systems to remove the residual phosphates from the dirty water, which was then discharged into rivers, lakes and streams polluting them. Last year, a similar near-ban for dish washer detergent went into effect. The percentage of phosphates was reduced from 8.7% to 0.5%, and as a result people began noticing that their dishes and glasses were coming out still dirty.

This means we use more water and energy rather than less

So how should we deal with dirty clothes and dishes? The popular recommendation is to do multiple, smaller loads, which assures that what is being washed has more water. Of course, this means we use more water and energy rather than less. Others have attempted to correct the problem by using more detergent, but that can create other problems such as reducing the life of the machines and of the clothes being washed. Once again we see the unintended consequences of politicians and bureaucrats trying to dictate a solution to one problem but actually creating others.

New England Wind Projects Struggle To Move Forward

A prime renewable – offshore wind power – continues to struggle even though several projects have received federal and/or state approvals to move forward

The BP Ltd. (BP-NYSE) oil spill in the Gulf of Mexico last year and the Japanese tsunami and nuclear power plant meltdown have cast a pall on the use of fossil fuels for meeting America's energy needs. Renewable energy, along with natural gas, has been the beneficiary of sentiment that these fuels will be the bridge to a cleaner U.S. energy industry. A prime renewable – offshore wind power – continues to struggle even though several projects have received federal and/or state approvals to move forward. Increasingly, these projects are running into economic challenges, which have been overcome so far by legislation and utility regulation circumventing the issues.

The leading contender for the nation's first ever offshore wind project – Cape Wind – has struggled to sell its power output and to find the funding necessary to build the wind farm. Just a little further south, the Block Island, Rhode Island demonstration offshore wind project is awaiting a ruling from the state's Supreme Court on whether the power contract it signed with National Grid (NGG-NYSE) is valid. The prospect of more offshore wind power in Nantucket Sound off Cape Cod, Massachusetts has been hit by several other blows including a federal government ruling cutting the area available for future wind energy leases in half and the recent sightings of North Atlantic right whales in the water where the Cape Wind turbines are to be located.

The reduction from 3,000 square miles to 1,300 was made following hearings and a public comment period that produced over 250 objections to the water's usage

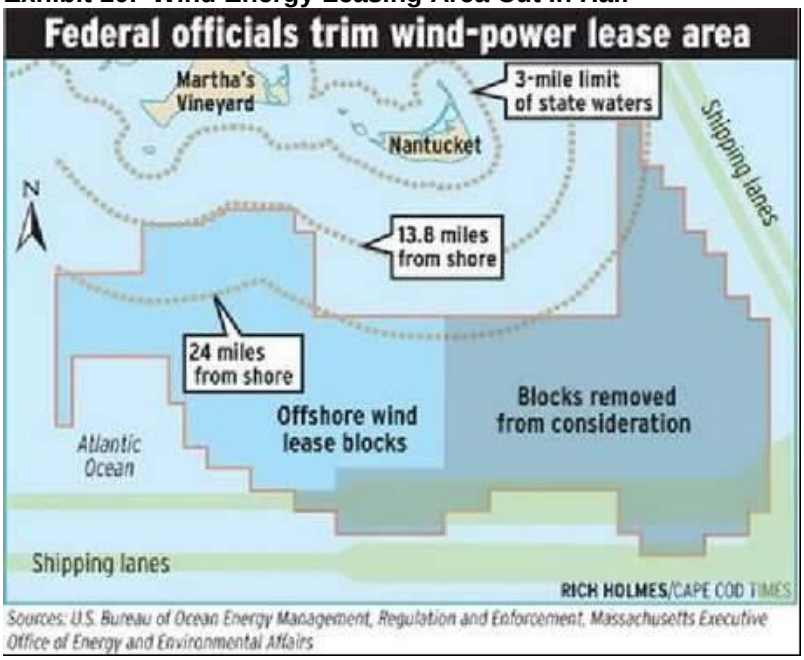
Less than two weeks ago, the Bureau of Energy Management, Regulation and Enforcement (BOEMRE) ruled that more than half the area in federal waters previous approved for leasing for development of wind resources would be withdrawn from leasing consideration. The reduction from 3,000 square miles to 1,300 was made following hearings and a public comment period that produced over 250 objections to the water's usage. The federal government will consult further with state and local officials and might reduce the approved acreage even more. BOEMRE Director Michael Bromwich noted that even with the elimination of close to 1,700 square miles from leasing, the remaining area can support turbines that could generate 4,000 megawatts (MW) of electricity.

So far, the developer has only been able to sell half the projected power output from the 130-turbine project

The bigger problem for Cape Wind is its economics. So far, the developer has only been able to sell half the projected power output from the 130-turbine project. That contract was signed with National Grid and calls for an initial price of 18.7-cents per kilowatt-hour (kWh) in the first year of the wind farm's operation, escalating at 3.5% per year for the remaining 20 years of the contract. The initial cost estimate is that the wind power cost will add $1.59 to the $94.31 monthly bill for a customer consuming 618 kWh of electricity.

In conjunction with Cape Wind receiving its federal approval to begin construction, it has become active as an intervener in two electricity

Exhibit 10. Wind Energy Leasing Area Cut In Half



Source: ***Cape Cod Times***

Observers wonder whether Cape Wind, with the tacit approval of the PUC, is using the merger review intervention to pressure NStar to buy its remaining power output

industry hearings at the Massachusetts Public Utility Commission (PUC). In January, Cape Wind intervened in the PUC hearing reviewing the proposed merger of NStar (NST-NYSE) and Northeast Utilities (NU-NYSE). NStar is the other major electricity provider in Massachusetts and Cape Wind has not been able to convince it to purchase the remaining 50% of its offshore power output. Observers wonder whether Cape Wind, with the tacit approval of the PUC, is using the merger review intervention to pressure NStar to buy its remaining power output.

In mid April Cape Wind tried to intervene in a rate hearing involving an electric utility and a clean energy project in Maine. Fitchburg Gas and Electric Light Company is seeking PUC approval for a long-term contract to purchase renewable energy certificates (RECs) and a long-term renewable energy contract adjustment mechanism tariff. The contract is with Black Bear Hydro Partners Holdings, LLC that is developing a 2.23 MW hydroelectric facility near Old Town, Maine. The contract is for 15 years and provides for recovery of the costs associated with long-term contracts for RECs.

The proposed Fitchburg contract would be the first of this type that the PUC would review pursuant to the Green Communities Act and the Global Warming Solutions Act

Cape Wind argued in its request to intervene that the rate request presented issues of general and precedential concerns to electric industry participants. The proposed Fitchburg contract would be the first of this type that the PUC would review pursuant to the Green Communities Act and the Global Warming Solutions Act. Cape Wind argued that the PUC needed to consider any reasonably foreseeable climate change impact in connection with its review.

Since Cape Wind was the developer of a "mature project" it claimed it is uniquely qualified to provide input to the review process. That view was predicated on the fact that Cape Wind had gone through extensive state, local and federal reviews in order to win its approval. The PUC examiner considered Cape Wind's arguments and concluded it would add nothing to the review process that the PUC didn't know, so he rejected the petition.

What may be a bigger problem for Cape Wind, however, is that the federal loan program it was seeking funds from to construct the wind farm has put the application "on hold" due to a lack of money. Cape Wind requested a loan of $2 billion, or about 80% of the estimated cost of the project. The Department of Energy loan program informed Cape Wind that it could not process the application before the September 30 deadline, so it put it on hold until new funds are approved in the next federal government budget cycle. Given the political temperature in Washington regarding government spending, there are serious questions about this program being at risk of a significant funding cut. The project also needs tax credits, which could also be at risk if construction does not begin before the end of the year. Since Cape Wind still faces additional legal challenges, the victory proclaimed earlier this year after the permit award by Energy Secretary Salazar may have been premature.

The federal loan program Cape Wind was seeking funds from to construct the wind farm has put the application "on hold" due to a lack of money

In Rhode Island, the Supreme Court heard an appeal of the approval of the power contract between Deepwater Wind, the developer of the demonstration wind farm project off Block Island and the larger 200-turbine proposal further offshore, and National Grid, the primary electric utility in Rhode Island. In 2009, then-Governor Donald Carcieri signed into law a statute requiring National Grid to sign long-term contracts to buy energy from wind farms, solar farms and other sources of clean, renewable energy.

Environmentalists heralded the law as a way to wean the state off polluting fossil fuels and address climate change. The governor supported the law because, he said, it would boost a new industry in a state suffering from a recession and a long-term decline in manufacturing, meaning new, green jobs. The law acknowledged that in the near-term renewable energy would cost more than power from fossil fuels, so it prescribed how National Grid would pay for these additional costs. The cost would be allocated to all the distribution customers of the company.

The law acknowledged that in the near-term renewable energy would cost more than power from fossil fuels

Rhode Island was the first state to deregulate its electric industry in 1996, and the law created two broad classes of customers: those that buy their power under what's known as the "standard offer" rate from National Grid and have it delivered by National Grid; and those that buy their power from a competitive supplier but still have it delivered by National Grid. Under the long-term contracting law for renewable power both classes of customers are charged for the additional costs incurred by National Grid for the power. Without

Under the long-term contracting law for renewable power both classes of customers are charged for the additional costs incurred by National Grid for the power

that provision, the additional cost of renewable power for standard offer customers would drive them to leave that offer. According to National Grid lawyer Ronald Gerwatowski in testimony before the PUC, "If we had to charge everybody on the standard offer, everybody would leave the standard offer and we'd have nobody to recover the costs."

In the final contract year, the rate for this renewable fuel would be 48-cents per kWh

William Moore, the chief executive of Deepwater Wind, stated, "Everybody has to share the costs of what regulators have decided are projects with society-wide benefits." The problem is that the PUC rejected the original contract and only approved it after the law about what it could and had to consider in determining the appropriateness of the power contract was modified by the legislature. Having no option, the PUC accepted the contract allowing National Grid to pay 24.4-cents per kWh in the first year with a 3.5% annual price increase for each year of the 20-year contract. In the final contract year, the rate for this renewable fuel would be 48-cents per kWh.

The Deepwater Wind rate is now more than three times the cost of power from other sources

As a result of what has happened to Rhode Island power prices due to low coal and natural gas prices, the standard offer rate has fallen from 9.6-cents per kWh to 6.9-cents for residential customers. The Deepwater Wind rate is now more than three times the cost of power from other sources. Using the 24.4-cent rate, the additional cost to customers over the 20-year contract life would be $390.5 million. Based on the new standard offer rate, the cost premium has increased to $415 million.

These customers represent 2.5% of the number of ratepayers but they consume about 35% of the total power supplied in Rhode Island

The majority of the competitive supply customers are commercial or industrial entities that generally use substantially more electricity than residential customers. These customers represent 2.5% of the number of ratepayers but they consume about 35% of the total power supplied in Rhode Island. At the Supreme Court hearing the two competitive supply customers challenging the Deepwater Wind contract argued that the agreement is not commercially reasonable and could harm their businesses.

One has to believe that having to compete, rather than negotiate, for a power contract has a lot to do with the low rate

While not part of the court argument, the revelation that Deepwater Wind has made an offer to sell power from its proposed 200-turbine project, known as Deepwater Wind Energy Center to be located in a 270 square mile tract offshore between Rhode Island and Massachusetts, to the Long Island Power Authority for a price estimated in the "low teens" muddies the reasonableness of the National Grid rate. The Long Island rate is about one-third below the price National Grid is paying Cape Wind for offshore power in Massachusetts and nearly half the rate Deepwater Wind has negotiated with the utility for offshore power in Rhode Island. While Deepwater Wind argues the lower rate reflects the economies of scale of a larger project, one has to believe that having to compete, rather than negotiate, for a power contract has a lot to do with the low rate.

According to the Pacific Research Institute, under a life-of-the-project assessment, it would take 30 years for a wind turbine to start saving on emissions

What we know is that offshore wind power is the second most expensive power in the market. According to the Pacific Research Institute, under a life-of-the-project assessment, it would take 30 years for a wind turbine to start saving on emissions. At the same time, we need to consider that even the most modern wind turbine has a 20-year life before needing to be replaced, a cost that is never acknowledged when environmentalists prepare their assessments of why wind energy is better than fossil fuel power plants. We expect this summer will prove interesting for the offshore wind industry in New England, and likely for the rest of the nation, too.

The Economic Pain Of Gasoline Prices

Both Wal-Mart and Lowe's indicated in their recent quarterly earnings reports that high gasoline prices had kept their customers home and spending less

Sky high pump prices have taken their toll on gasoline consumption and raise a question about their impact on the economy broadly. Both Wal-Mart (WMT-NYSE) and Lowe's (LOW-NYSE) indicated in their recent quarterly earnings reports that high gasoline prices had kept their customers home and spending less. A recent USA Today Gallup poll says that seven of ten Americans say that the high price of gasoline is causing financial hardships for their families. Some 21% say that the impact has been so dramatic that it is jeopardizing their standard of living.

Surprisingly, only 8% have resorted to car pooling while 15% purchased a more fuel-efficient vehicle

The poll asked a number of questions about how people were responding to the increase in gasoline prices. The responses were not particularly different than one would have expected. Mostly people stop driving and stay home more as 32% of those polled responded. There were several variations on that response with 15% running fewer errands and 12% driving less for leisure. Surprisingly, only 8% have resorted to car pooling while 15% purchased a more fuel-efficient vehicle.

Exhibit 11. High Gas Prices Impact People

Lifestyle Changes Due To High Gas Prices	
Drive less and stay home more	32%
Cut travel or vacations	16%
Got a more fuel efficient car	15%
Run fewer errands	15%
Less leisure driving	12%
Cut other expenses	12%
Car pool	8%
Changed Job or school	6%

Source: USA Today Gallup, PPHB

An interesting aspect of the poll was the "Would never consider" responses to a series of questions about how people might respond to high gasoline pump prices. Of the five questions asked, two of them are pet approaches of government, and the Obama

The one question with a positive response is about buying a more fuel-efficient car

administration in particular. Those questions – using mass transit and buying an electric car – have less than 50% support despite sharply rising gasoline prices. The one question with a positive response is about buying a more fuel-efficient car. That should be good news for auto manufacturers, except for domestic suppliers who seem to be buying in (or recognizing the mandate of their benefactor President Obama) to the electric car option.

Exhibit 12. Implications For Government Policies

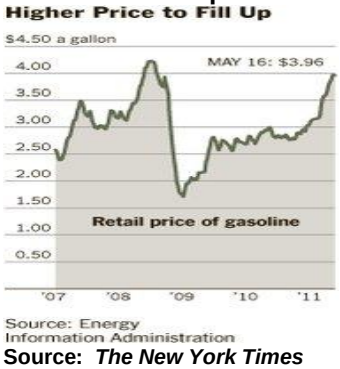
	Would never consider
Move closer to places you drive to most often	69%
Use mass transit	52%
Buy a more fuel-efficient car	38%
Change job or quit working	72%
Buy an electric car even though range limited	57%

Source: USA Today Gallup, PPHB

We may have seen the peak in pump prices for some time

With crude oil prices having slumped recently as economic growth projections are called into question and consumers balk at high gasoline prices, we may have seen the peak in pump prices for some time. Does that mean that consumers will return to auto showrooms seeking size, power and comfort in their next new car purchase?

Exhibit 13. Pump Prices Peaking?



Source: *The New York Times*

While Americans are not about to abandon their affair, they may be willing to adjust the relationship

Americans have a love affair with their automobiles. Their status is reflected by the vehicle they drive. Cars have been important to the growth and development of the western portion of the United States. They have provided Americans with employment flexibility and a higher standard of living. While Americans are not about to abandon their affair, they may be willing to adjust the relationship. Radical changes, however, are probably not in the cards, which is bad news for government policymakers who want to remake the domestic auto market in the name of promoting green energy and green jobs.

Wind Energy Rebound Confronting Economic Challenges

The industry entered the second quarter with a backlog of 5,600 MW under construction, nearly twice the figures reported at the same time in 2010 and 2009

The American Wind Energy Association (AWEA) has pointed to the huge increase in new wind turbine installations in the first quarter of this year, and the growth in the backlog of new projects, as a sign of the rebounding health of the industry. According to AWEA, the wind energy industry installed 1,100 megawatts (MW) of turbine capacity in the first quarter. While well below the 2,836 MW installed in the first quarter of 2009, the quarterly total was slightly more than twice the capacity installed in 2010, the lowest quarterly total since 2007. The industry entered the second quarter with a backlog of 5,600 MW under construction, nearly twice the figures reported at the same time in 2010 and 2009. Up until 2010, when wind capacity additions were cut in half, wind and natural gas have each claimed about 40% of the new power generation market.

The industry has clearly been helped by the extension of the renewable energy subsidies and the verbal and monetary support of the Obama administration. But probably the bigger factor in the success of the industry recently is the approaching deadlines for electric utility companies to meet the various state mandates on the amount of renewable energy they must purchase, and in many states it must be produced locally.

The 2.1-cent renewable energy production tax credit, extending the cost advantage for natural gas to 5.6-cents per kWh

According to recent figures from the Energy Information Administration (EIA) the cost of wind power is 9.7-cents per kilowatt hour (kWh). That is more expensive than the cost of power generated from new natural gas-powered plants, which is estimated to cost 6.3-cents per kWh. While the nearly 3.5-cent cost differential is significant, the gap between the two fuel costs would be even greater when one learns that the wind cost estimate reflects the 2.1-cent renewable energy production tax credit, extending the cost advantage for natural gas to 5.6-cents per kWh.

An additional cost that is beginning to impact wind power is the operations and maintenance cost of turbines. Early Department of Energy studies placed those costs at between a half and one cent per kWh for wind farms in the United States. Because large-scale deployment of wind turbines had not begun, these early estimates made five years ago or earlier, were subject to great uncertainty due to the lack of extensive real-world data. Now that more wind farms have been developed, more operators are finding they have better data upon which to determine these costs.

Scheduled maintenance and parts repair or replacement is essential for effective operation of wind farms, but unscheduled repairs are a cost killer

Wind turbines and their components can experience problems taking them out of commission. There can be mechanical problems with generators, gearboxes and blades. There can also be problems with turbine control systems, electrical systems and with turbine sensors. What operators have learned is that the largest cost factors in wind turbine operations and maintenance are the costs for parts and labor. Scheduled maintenance and parts repair or

replacement is essential for effective operation of wind farms, but unscheduled repairs are a cost killer.

The commonly used wind turbines in the United States have a tower that stands about 260 feet tall, a rotor assembly of blades and hub that weighs about 50,000 pounds and a generator that weighs around 110,000 pounds. The repair and maintenance of these turbines requires the use of cranes and hoists capable of lifting the equipment. In Europe where there are many offshore wind turbines, companies often are required to use helicopters to service the turbines. This can prove to be very expensive, although the alternative may be to have to mobilize a crane barge, which is not only costly but can require days of delay.

All things considered, a recent study of the operations and maintenance costs of wind turbines conducted by *Wind Energy Update*, estimates that the cost is about 2.5-cents per kWh. One thing that has held down these costs is that the brunt of the costs has been borne by the turbine manufacturer. As long as the turbines are within their warranty period, the equipment supplier is required to pick up the tab. While the costs associated with failed wind turbines falls on the supplier, the wind farm operator can be losing revenues. Each percentage point drop in availability in a year is estimated to cost a wind farm operator up to $500,000 in revenue.

One thing that has held down these costs is that the brunt of the costs has been borne by the turbine manufacturer

Probably more troubling for the wind power industry is that many of the turbines in their wind farms are coming off warranty. At the end of 2010, for the first time in the U.S., more wind turbines were estimated to be operating out of warranty than were covered according to *Wind Systems* magazine. Two conclusions come from this analysis: a market will develop for turbine equipment monitoring systems and failure analysis software; and that the cost to maintain and repair turbines will climb potentially adding to the cost disadvantage for wind energy. Without subsidies, wind power will continue to confront economic challenges.

Without subsidies, wind power will continue to confront economic challenges

The Green Energy Movement In Ontario May Be Changing

Canadian provincial elections are fast approaching and a new ingredient may have been recently introduced into the campaign in the province of Ontario. Ontario Conservative party leader Tim Hudah has pledged that if his party wins control of the provincial government it plans to shut-down the feed-in-tariff (FIT) that pays a premium for renewable energy. The FIT was part of the Green Energy Act (GEA) that had been enacted in response to efforts to clean up the province's environment and to create jobs. In the last issue of *Musings* we reported on a study sponsored by the Frontier Centre for Public Policy that examined the record of failed green energy job-creation efforts throughout Europe.

The FIT was part of the Green Energy Act (GEA) that had been enacted in response to efforts to clean up the province's environment and to create jobs

A recent op-ed by Ross McKitrick, a professor of economics at the

University of Guelph and a senior fellow at the Fraser Institute, challenged the benefits of the GEA on both fronts. Because most of his job-creation arguments were based on the study we previously reported on, we are only going to look at his challenges to the environmental imperative for the FIT. Professor McKitrick points out that Ontario gets 75% of its electricity from nuclear and hydro power plants that have no carbon emissions associated with their operation. As a result of the development of these power sources since the 1970s, each decade since then Ontario's air quality has improved and is today considered to be very good.

According to Environment Canada's emissions inventory, Ontario's coal-fired power plants released 699 tons of PM2.5 in 2009

What the environmentalists are attacking now is the emissions from the coal-fired power plants in the province, and in particular their main health concern is PM2.5, the ultrafine particles emitted that are smaller than 2.5 microns in diameter. According to Environment Canada's emissions inventory, Ontario's coal-fired power plants released 699 tons of PM2.5 in 2009. While seemingly a large number, Professor McKitrick noted that according to Environment Canada's own data, Ontario's residential wood-burning fireplaces released 1,150 tons of PM2.5, or nearly 65% more than the coal-fired power plants.

Ontario's Clean Air Alliance has made claims in written publications that the coal-fired power plants have been responsible for 316 deaths, 440 hospital admissions, 522 emergency room visits and 158,000 minor illnesses each year. This data came from a simulation study prepared for the province in 2005 that focused on the health effects of PM2.5. According to that same relationship, wood-burning fireplaces would be responsible for 520 deaths annually.

He went on to calculate that if the province paved eight-tenths of one percent of all its dirt roads, it would cut PM2.5 emissions by an amount equivalent to shutting down all of Ontario's coal-fired power plants

Professor McKitrick decided to look at another source of PM2.5 in the province – dust from unpaved roads. According to Environment Canada, the dust from unpaved roads kicked up into the atmosphere totals 90,116 tons of PM 2.5 a year. Using the same ratio as for coal-fired power plants, this dust would be responsible for 40,739 deaths a year. Since Ontario experienced 90,000 deaths from all causes in 2010, dust from unpaved roads would be responsible for nearly half of all deaths in the province. He went on to calculate that if the province paved eight-tenths of one percent of all its dirt roads, it would cut PM2.5 emissions by an amount equivalent to shutting down all of Ontario's coal-fired power plants. As Professor McKitrick pointed out, by paving roads the citizens of Ontario would be better off both health-wise and economically because they would get to enjoy the low cost and reliable power from the coal-fired power plants for many years into the future and have cleaner air at the same time. Ontario's GEA may represent another one of those "feel-good" laws that actually accomplishes little, or even has unintended negative consequences such as raising residents' cost of living.

NOAA 2011 Hurricane Forecast Repeats Last Year's Pattern

NOAA expects 12-18 named tropical storms with between six and 10 becoming hurricanes and three to six major hurricanes (Category 3, 4 and 5)

This is Hurricane Preparedness Week on the eve of the commencement of the 2011 hurricane season that begins on June 1st. The season lasts through November 30th and is expected to be an active storm season. The National Oceanic and Atmospheric Administration (NOAA) recently issued it forecast for tropical storm activity this year. NOAA expects 12-18 named tropical storms with between six and 10 becoming hurricanes and three to six major hurricanes (Category 3, 4 and 5). The agency characterizes the upcoming storm season as "above normal" and has provided a wide range of the number of types of storms. The NOAA forecast compares with the hurricane forecasting team at the Colorado State University who calls for 16 named storms, nine hurricanes and five major hurricanes. The AccuWeather.com forecast for this season is below the others with 15 named storms, eight hurricanes and three major hurricanes expected.

The historic average number of storms since the 1950s is 11 named storms, six hurricanes and two major hurricanes

This year's NOAA forecast reflects the agency's pattern of predicting wide ranges of types of storms with an expectation it will later tighten the forecast range as the season progresses. Last year, when it expected the hurricane season to be "extremely active," NOAA predicted 14-23 named storms at this time last year. The storm season last year produced 19 named storms, 12 hurricanes and five major hurricanes, all within NOAA's forecast range. The historic average number of storms since the 1950s is 11 named storms, six hurricanes and two major hurricanes, so this year's forecasts are significantly higher than the long-term average.

Exhibit 14. 2011 Expected To Be Active Hurricane Year

	NOAA	AccuWeather.com	Colorado St. U.
Named storms	12 - 18	15	16
Hurricanes	6 - 8	8	9
Major hurricanes	3 - 6	3	5

Source: NOAA, CSU, AccuWeather.com, PPHB

The reason we are anticipating a more active hurricane season is a function of three primary climatic factors all cited by NOAA and the other forecasters

The reason we are anticipating a more active hurricane season is a function of three primary climatic factors all cited by NOAA and the other forecasters. One is the continuing high activity era we are in for hurricanes. Second is the warm Atlantic Ocean waters, which are nearly two degrees warmer than average. Lastly, we have the continuing weakening of the La Niña weather phenomenon in the equatorial Pacific Ocean waters, which tends to reduce shear winds in the Atlantic basin that allows the formation and strengthening of tropical storms and hurricanes. With these forces at work, NOAA's characterization of this season as being "above normal" and Colorado State University's description of an "above average activity" year are probably both accurate.

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