
MUSINGS FROM THE OIL PATCH

September 9, 2014

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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

What Does Winter Outlook Say About Natural Gas Demand?

Three-quarters of the nation will experience below-normal temperatures

The *Farmers' Almanac*, published since 1818, issued its forecast for the upcoming winter, calling for the season to be “more shivery and shovelry.” According to Caleb Weatherbee, the fictional name assigned to their weather forecaster, three-quarters of the nation will experience below-normal temperatures. In particular, they expect the most frigid temperatures to hit the region extending from the Northern Plains into the Great Lakes, and the coldest days to arrive during the final week of January and extend into the first half of February. In fact, Mr. Weatherbee believes frigid arctic air could drive temperatures in the Northern Plains to possibly 40° below zero.

The forecast also calls for an active storm track with a number of storms delivering “copious” amounts of snow and rain

The forecast also calls for an active storm track with a number of storms delivering “copious” amounts of snow and rain. Once again, the *Farmers' Almanac* has targeted the first 10 days of January and the first week of February along the Atlantic coast for winter-weather featuring bouts of heavy precipitation and strong winds. Another weather event could spread wintry conditions in the middle of March and extending from the middle of the country to the East Coast.

The *Farmers' Almanac* suggested there was no guarantee of an El Niño

The brief summary of the *Farmers' Almanac* winter forecast we read discussed the impact formation of an El Niño in the southern Pacific Ocean, which the National Oceanic and Atmospheric Administration (NOAA) suggests is possible, would have on their weather forecast. It usually brings a milder winter for the nation's frigid northern tier and more rain for drought-stricken California and the Southern States. The *Farmers' Almanac* suggested there was no guarantee of an El Niño. That's an important point given the back-and-forth about whether there will be or won't be an El Niño this fall or winter and whether it will be huge or marginal.

Exhibit 1. *Farmers' Almanac* Calls For 2013-14 Winter Repeat



Source: *Farmer's Almanac*

This suggests the Eastern portion of the U.S. may experience a cooler fall

The September issue of the *Browning Newsletter* authored by Evelyn Browning Garriss, covers climate, behavior and commodities, and highlights the challenge of predicting an El Niño given, that at the moment, conditions are not meeting the technical definition of the weather phenomenon, but the warm water conditions in the Tropical Pacific Ocean are creating El Niño-like weather in places such as the U.S. (dry for California and good for the Midwest farmers) and China (drought in the northern region). As Mrs. Garriss points out, tropical weather responds immediately to El Niño conditions while the weather in subtropical latitudes lags by two to three months in its response. This suggests the Eastern portion of the U.S. may experience a cooler fall. Another outcome is that the Atlantic hurricane season will become more active in September and October, a reason why meteorologists are upping their forecasts of the total number of hurricanes that will be experienced this year, also in response to the fact that the first three tropical storms of the season have all turned into hurricanes.

There is a question of whether we will experience polar vortex weather as we did last year?

Another aspect of winter weather forecasting is the question of whether we will experience polar vortex weather as we did last year. There are several forecasts suggesting that we are likely to see more, although whether this is due to the low amount of Arctic ice cover or shifts in the jet stream is being hotly debated, especially among environmentalists. What could all these weather outlooks mean for natural gas demand this winter season?

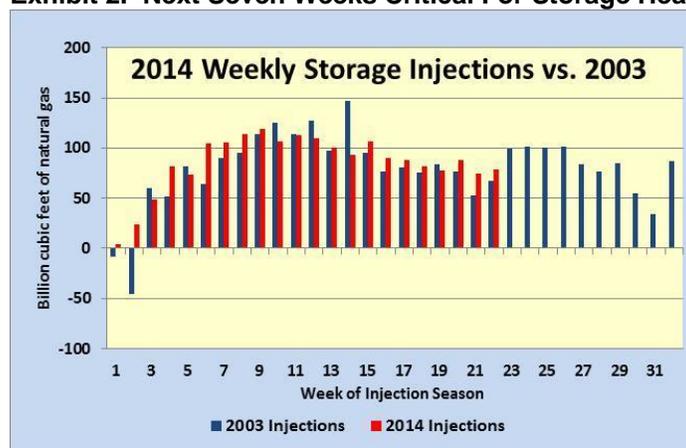
If the rest of this injection season follows that historical pattern we will wind up at 3,445 billion cubic feet (Bcf) of gas in storage

We are still in the gas injection season so we do not know at what level winter storage inventories will start. The model we have used to project final injection volumes is based on a pattern following the 2003 injection season. If the rest of this injection season follows that historical pattern we will wind up at 3,445 billion cubic feet (Bcf) of gas in storage. That volume would represent 385 Bcf below the 5-year average and 369 Bcf below 2013's inventory at the start of the withdrawal season. The key issue for the gas industry for how much

Matching our model – the 2003 injection season – the industry will add 94 Bcf more, or 647 Bcf, to storage

gas winds up in storage will depend on what happens during the remaining injection weeks. Last week, 79 Bcf of natural gas was injected into storage, 5 Bcf more than analyst estimates and 21 Bcf more than the same week in 2013. Over the next seven weeks, if we match last year's comparable weekly injections, the industry will add 553 Bcf to storage. Matching our model – the 2003 injection season – the industry will add 94 Bcf more, or 647 Bcf, to storage. The significance of this crucial period is demonstrated by the weekly injection chart below.

Exhibit 2. Next Seven Weeks Critical For Storage Health



Source: EIA, PPHB

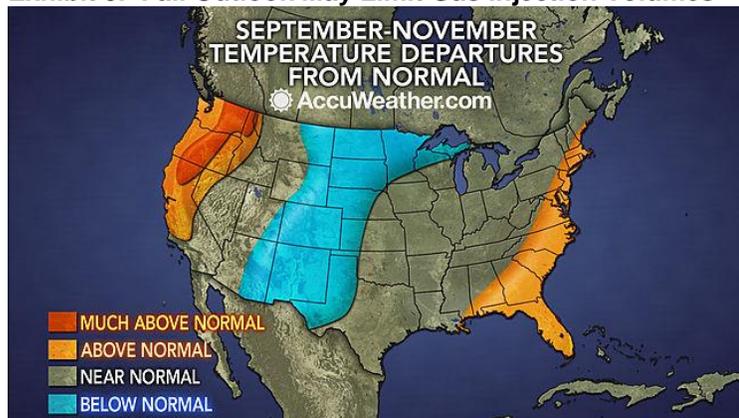
Injection volumes for the next seven weeks will be dependent on the weather, especially temperatures, and the availability of alternative power sources

If we only match last year's injections during the remainder of the injection season, we will have 110 Bcf of gas less than our model forecasts. Injection volumes for the next seven weeks will be dependent on the weather, especially temperatures, and the availability of alternative power sources. So far this week, the South is experiencing warmer temperatures than normal, which is bad news for additional gas supply. After a warm first half of the week in the East, temperatures are turning slightly cooler that could help gas supply. On the other hand, the longer term weather outlook, as presented by *AccuWeather.com*, shows above-normal temperatures all fall along the populous East Coast that could hinder the building of gas storage.

Should the *Farmers' Almanac* projection prove accurate, we might be facing another winter in which natural gas prices trade north of \$6/Mcf for some period of time

While natural gas prices, currently in the \$3.80 per thousand cubic feet (Mcf) range, appear to reflect the view that gas storage levels at the end of the injection season will be sufficient for the upcoming winter, should the *Farmers' Almanac* projection prove accurate, we might be facing another winter in which natural gas prices trade north of \$6/Mcf for some period of time. The question then becomes whether the excursion into high price territory represents a brief spike or becomes an extended time period. If the latter, we could be looking at an interesting change in natural gas market dynamics with various knock-on effects as E&P companies react to much better than expected prices.

Exhibit 3. Fall Outlook May Limit Gas Injection Volumes



Source: *AccuWeather.com*

If gas storage is drawn down as much as it was last winter, we could have a problem as we would end the 2014-15 winter with the lowest volume of gas in storage, 488 Bcf, at any time during the past 21 years!

If the coming winter matches last winter's bitterly cold periods and gas storage is drawn down as much as it was last winter, we could have a problem as we would end the 2014-15 winter with the lowest volume of gas in storage, 488 Bcf, at any time during the past 21 years! We have listed in Exhibit 4 the five largest winter gas storage drawdowns since 1994. Note that three of the top five were the last three winters. The greatest risk for the gas industry – and consumers – will be if there is a repeat of last winter's bitter cold temperatures. Even if we experience a winter gas demand equal to the winter of 2002-03, gas storage would end up at 969 Bcf, or about where the industry started the injection season of 2003, and 147 Bcf more than where we began this year's season. Any of the remaining three top winter drawdowns during the past 20 years were repeated, it would still leave the gas industry with well over 1,000 Bcf of storage, a level that would not create high anxiety among consumers. Therefore, other than a repeat of last winter, it is likely that natural gas prices will remain strong – at the current level or higher – but not so high as to alter perceptions of a comfortably-supplied natural gas market. That price outlook likely would not drive drilling activity substantially higher, given the uncertainty about prices, winter demand and shale formation performance.

Exhibit 4. Largest Winter Draws

Winter	Bcf
2013-14	2,957
2002-03	2,476
2010-11	2,242
1995-96	2,230
2012-13	2,221

Source: EIA, PPHB

For a base load plant operating at 90% efficiency, those coal plants being shut down would power 4.2-5.3 million homes

Issues to keep an eye on that could alter our view that only a repeat of last winter's weather would bring a gas price explosion are the availability of coal supplies, along with how much coal-fired electricity generation capacity is available as well as how much nuclear power generating capacity is also available. The utility industry has been rapidly closing coal-fired power plants that can no longer meet the environmental restrictions on various greenhouse gas emissions. Between June 2013 and June 2014, coal-fired generation capacity has shrunk by 2%, or 5,888 megawatts (MW). For a base load plant operating at 90% efficiency, those coal plants being shut down would power 4.2-5.3 million homes. Besides shrinking coal generation capacity, there is the question of coal supplies that were seriously decimated during last winter because of weather complications. While substantial additions to electricity generation capacity have come from natural gas, wind and solar, the two renewable fuels are often limited in their contribution during the winter. For the 12 months ended June 2014, natural gas generation capacity is up 3,800 MW, or 0.9%, while wind added 1,600 MW, or 2.7%, and solar gained 3,000 MW for a 93% increase. Regionally, the New England states could be exposed to another winter of extremely high electricity costs as the region remains pipeline-constrained for delivering more gas to power plants forcing the electric utilities to rely more on coal, oil and imported Canadian electricity. Even then, the power transmission lines into and within the region have not been expanded possibly limiting the amount of additional power that can be imported.

The fact that the economies and population growth of New England states are anemic may actually help the utilities in the near-term by limiting power demand growth

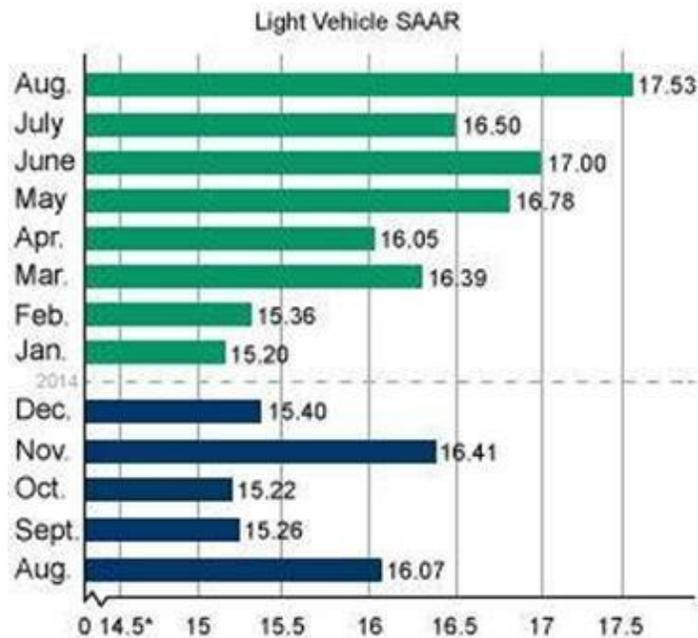
Given the outlook for power fuel supplies in New England this winter, we would have expected consumers to be more enraged about the protests by environmentalists fighting expansion of gas pipeline projects such as those being proposed by Algonquin and Kinder Morgan (KMI-NYSE) to bring more Marcellus gas to the region. As we wrote in a recent *Musings*, the upcoming closure of the Vermont Yankee nuclear power plant at the end of this year, which has consistently supplied about 5% of the region's electricity at low cost and free of emissions, utilities in New England will be under pressure to build more power plants, primarily natural gas-fired, to replace that lost supply, and likely mount more aggressive conservation efforts. More wind farms and solar installations in the region will help, but increasingly may also create grid stability challenges for utility companies. The fact that the economies and population growth of New England states are anemic may actually help the utilities in the near-term by limiting power demand growth. Keep an eye on upcoming winter weather forecasts as a guide as to where natural gas prices may trade over the next few months. It may also tell you who might be freezing in the dark.

Booming Car Sales And Rising VMT To Change Oil Demand?

The August sales figure was one million units higher than analysts had expected as the average of analysts' estimates called for only a 16.6 million SAAR

The August vehicle sales results of the automakers in the United States were released last week showing that, the industry sold cars at a 17.5 million seasonally adjusted annualized rate (SAAR), up 6% from the same month last year, according to an analysis by *Automotive News*. For the eight month period through August, vehicle sales are 5% higher than for the same period in 2013. The August sales figure was one million units higher than analysts had expected as the average of analysts' estimates called for only a 16.6 million SAAR. One analyst commented that he remembered when one of the auto executives who was testifying before Congress during the debate over bailing out General Motors (GM-NYSE) and Chrysler during the 2008 financial crisis said he would love for the industry to ever return to a 13 million unit sales year. Of course, he was in the midst of what turned out to be a nine million unit sales year, so any year with a double-digit unit sales growth would certainly portend a much better financial outcome than what was driving his company into bankruptcy.

Exhibit 5. U.S. Auto Sales Soaring



*In millions
Source: Automotive News Data Center and the BEA
Source: *Automotive News*

While many analysts and investors were very happy with the August sales figures, some commented that they were growing concerned that the automakers were beginning to repeat the mistakes of the pre-financial crisis years that contributed to the companies' financial

Those mistakes included utilizing aggressive financial incentives to spur sales and relying on loans to lower credit-worthy borrowers in order to enable buyers to stretch their monthly payments to afford new car purchases

Embracing zero-interest loans is a reflection of the “end of season” time period when dealers try aggressively to empty their lots providing room for the newly arriving models

13% of dealers’ loans were issued at 0% interest in July and August, up from 11% last summer and the highest percentage since December

collapse. Those mistakes included utilizing aggressive financial incentives to spur sales and relying on loans to lower credit-worthy borrowers in order to enable buyers to stretch their monthly payments to afford new car purchases. Those analysts concerned with the industry possibly repeating past mistakes point to the volume of new manufacturing capacity being added to the industry, employing zero-interest car loans with terms lengthened to six or seven years, higher loan-to-value ratios suggesting that expensive add-ons such as extended warranties or high-end sound systems were being included in the loans, the rapid growth in the share of auto loans made to borrowers with FICO scores of 660 or lower – considered poor credits - plus the weakening of used car prices suggesting a growing glut of used cars and a shrinking pool of prospective auto buyers. As *Automotive News* points out, “Analysts say much of the pent-up consumer demand that has driven industry volumes in recent years has been tapped, prompting automakers to sweeten some deals in search of incremental sales.”

The auto industry’s response to these concerns is typical and largely reasonable. The companies are suggesting that they have not forgotten what got them into financial problems in the past and are not on the road to repeating those mistakes. Adding new manufacturing capacity is normal in an industry upturn, but the plants are new and mostly located in more favorable labor markets helping the companies with respect to their manufacturing costs. Embracing zero-interest loans is a reflection of the “end of season” time period when dealers try aggressively to empty their lots providing room for the newly arriving models. That probably means the 17.5 million sales’ rate will prove unsustainable. However, the sales success so far this year – five straight months with SAAR sales above 16 million units – supports analysts’ estimates of a 16.3 million unit rate for 2014, the best sales rate since the 16.6 million sales’ rate of 2006.

The concerns over whether a bubble is growing for subprime loans reflects the recovery of the higher risk loan sector that was nearly eliminated during the financial crisis years. Average credit scores of subprime borrowers for used cars peaked in 2010 at around 653, but fell to 646 in the fourth quarter of 2013. These scores, according to a report from the credit rating agency Moody’s, have edged up over the past two quarters. Total loan volume attributed to riskier borrowers has increased but the amount has remained fairly level for the past year and still well below the level reached in the financial crisis era. A possible concern is that according to auto statistics firm Edmunds, 13% of dealers’ loans were issued at 0% interest in July and August, up from 11% last summer and the highest percentage since December.

With respect to falling used car prices, it is not a complete surprise as more young used cars have entered the market given the recent string of strong new car sales years. As this pool of modern used

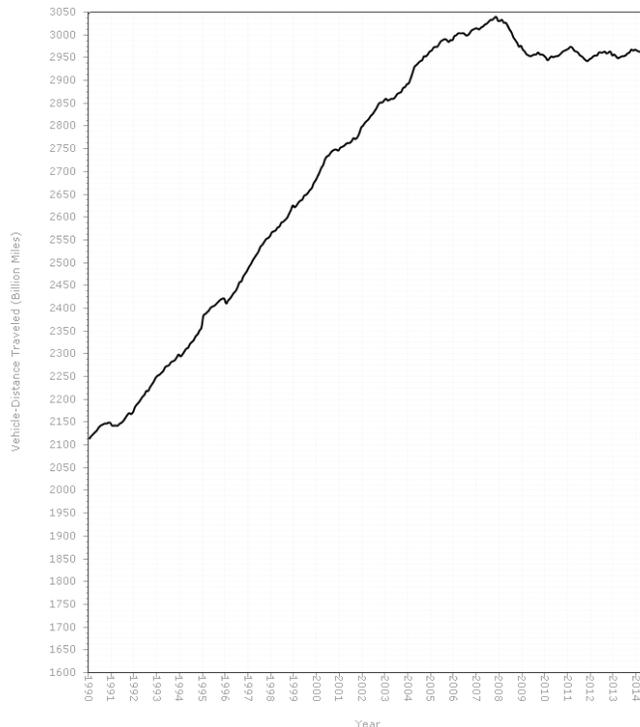
For the first six months of 2014, VMT are the highest they have been since 2008, immediately before the outbreak of the financial crisis

cars grows, one would expect their prices to weaken. This doesn't mean that used car prices are unusually low or that they are creating a problem for the auto market. Rather, this is a typical pattern experienced following every recession in which auto sales contract. That contraction contributes to the average age of vehicles in the fleet to rise, which is ultimately what drives people to purchase new cars or modern used cars when economic conditions and their own financial situations improve.

Another significant development in the auto market with implications for the energy business was the announcement by the Federal Highway Administration in its latest monthly Traffic Volume Trend report for vehicle miles traveled (VMT) that people are traveling more by vehicle. The latest data for June showed that VMT were at the highest level for the month since 2007. For the first six months of 2014, VMT are the highest they have been since 2008, immediately before the outbreak of the financial crisis. That performance is also true for the moving 12-month total of VMT through June.

What we see when we examine the 12-month moving total chart that FHWA publishes each month is a small uptick carrying it to the highest point within a relatively flat trend that has existed,

Exhibit 6. Trend In VMT Showing New Life



Source: FHWA

While we will need to monitor these trends, along with future monthly VMT totals, we cannot ignore the possibility that what we are experiencing is the Jevons paradox at work as more fuel-efficient new cars are encouraging drivers to use their vehicles more

Over this time period, vehicle fuel economy has increased by 5.7 mpg, a 28% increase, which goes a long way to offsetting the rise in average gasoline pump prices

The impact of changes in fundamentals underlying the auto industry and auto use could prove significant as the nation and the energy industry begin debating whether to overturn the 1975 law banning U.S. oil exports

despite a certain amount of volatility, since 2009. While it is too early to make a definitive judgment about whether the VMT trend has changed and will now begin a steady upward climb, the possibility of such a change cannot be discounted. That could mean higher energy consumption in the future.

What is the significance of a new upward trend after so many years of essentially a flat VMT trend? The conventional view lists a number of factors to explain the peak in VMT and its subsequent decline. Besides the financial crisis and subsequent recession, changing demographics impacting the primary driving age groups, living arrangements and lifestyles such as working from home and shopping online were part of their explanation. Millennials reportedly have different social attitudes about driving, car ownership and car usage. In addition, shifts in residency patterns away from the suburbs and toward urban areas that provide a greater range of transportation options including hourly car rentals and smart phone options for summoning taxi and ride-sharing services further hurts driving. While we will need to monitor these trends, along with future monthly VMT totals, we cannot ignore the possibility that what we are experiencing is the Jevons paradox at work as more fuel-efficient new cars are encouraging drivers to use their vehicles more. The Jevons paradox means that as technology progresses, the increase in efficiency with which a resource is used tends to increase the rate of consumption of that resource

While gasoline prices remain high by historical standards, they are lower now than in previous years, meaning that more fuel-efficient vehicles are experiencing even lower operating costs, thus encouraging drivers to drive more. The latest statistics for vehicle fuel-efficiency from the University of Michigan's Transportation Research Institute show that for the month of August, average fuel economy of new vehicles sold in the U.S. was 25.8 miles per gallon (mpg), up 0.2 mpg from July's figure and the highest value since tracking began in October 2007. Over this time period, vehicle fuel economy has increased by 5.7 mpg, a 28% increase, which goes a long way to offsetting the rise in average gasoline pump prices.

As we ponder the new dynamics of vehicle sales and the change in the trend in VMT, we are contemplating how significant they may be for transportation fuel sales. As the economy continues to improve and employment and incomes grow, we could see gasoline sales rise and begin eroding some of the oil import improvement the nation has experienced over the past several years due to the shale oil revolution that has reinvigorated domestic oil production. The impact of changes in fundamentals underlying the auto industry and auto use could prove significant as the nation and the energy industry begin debating whether to overturn the 1975 law banning U.S. oil exports. Expect to see these latest auto sales and VMT figures promoted prominently in the debate.

Brits: Are You Ready For A Winter Of Discontent?

It really refers to the winter of 1978–79 in the United Kingdom

While the phrase in the title to this article comes from the opening line of William Shakespeare's *Richard III*: "Now is the Winter of our Discontent / Made glorious summer by this sun of York...", it really refers to the winter of 1978–79 in the United Kingdom. That time, known as "winter of discontent" was marked by widespread strikes by public sector trade unions demanding larger pay raises, following the pay caps instituted by the governing Labor Party led by Prime Minister James Callaghan in an effort to control the 1970s inflation driven by spiking oil prices. The winter also turned out to be the coldest winter since 1963, further depressing the populace. These events contributed to the eventual election of Margaret Thatcher in 1979 to lead the British government.

By the end of the decade, oil prices doubled again when Iran's royal family was overthrown and replaced with an Islamic Republic

The 1970s was a very difficult era for Britain, as well as the rest of the western world, as economic stagnation was accompanied by recessions and shockingly high inflation, largely in response to the quadrupling of oil prices in 1973 following the Arab boycott of western countries that supported Israel in its war with Egypt, crippling high interest rates and social and labor unrest. By the end of the decade, oil prices doubled again when Iran's royal family was overthrown and replaced with an Islamic Republic. As a side event to that turmoil, in 1979, 52 Americans were seized from our embassy in Tehran and held hostage for 444 days, only to be released at the time of the inauguration of Ronald Reagan as President of the United States.

Prime Minister Edward Heath introduced the Three-Day Week, whereby commercial users of electricity were limited to three specified consecutive days' consumption each week

At the start of 1974, in response to strikes by coal miners that had depleted coal inventories at UK power plants, coupled with the effects of the 1973 oil crisis, Conservative Prime Minister Edward Heath introduced the Three-Day Week, whereby commercial users of electricity were limited to three specified consecutive days' consumption each week. During this time, Mr. Heath called a general election but was voted out of office and replaced by the Labor Party's Harold Wilson. By March, the normal work week was restored, although other restrictions on the use of electricity remained in force. During these months, many London office workers labored by candlelight.

Offices and factories will be offered compensation to undergo 1970s-style energy rationing and shut down for up to four hours a day

This period of British history came to mind with the announcement last week that National Grid (NNG-NYSE), the primary provider of electricity in the UK, announced that emergency measures will be introduced to prevent the "lights going out" this winter on the island kingdom. Offices and factories will be offered compensation to undergo 1970s-style energy rationing and shut down for up to four hours a day, between 4 pm and 8 pm, in order to prevent households being darkened. They will be paid a retainer for volunteering for the four month period, even if they are never called on to close early. If they do shut down, they will be paid an above-market rate for the electricity they do not use.

The owners of old power plants recently closed will be asked to restart them to help meet the power shortage

This situation is an unintended consequence of the UK's green energy plan that has forced the closure of fossil fuel and nuclear plants thus pushing the nation's surplus power availability to a razor-thin margin that might disappear this winter as a result of the power plant outages

"Models suggest capacity margins will tighten towards the end of this decade"

Additionally, the owners of old power plants recently closed will be asked to restart them to help meet the power shortage. National Grid has begun contacting these owners to see if the plants could be up and running before the start of winter. While many of the plants are gas-powered, some powered by coal and oil will be asked to participate, also. The plant owners will be paid the costs of resurrecting their plants. Once up and running, they must be available from 6 am to 8 pm during November through February. They will be paid an above-market rate for their electricity. National Grid said the measures will be used as a "last resort."

National Grid commented that it had planned to possibly employ these actions during the winter of 2015, but due to fires at two coal plants, a gas plant that remains closed and two nuclear plants that are offline and not likely to be up by the coldest period of the winter, it had to resort to these steps. This situation is an unintended consequence of the UK's green energy plan that has forced the closure of fossil fuel and nuclear plants thus pushing the nation's surplus power availability to a razor-thin margin that might disappear this winter as a result of the power plant outages. It may also be caused by the lack of renewable energy at times when the wind doesn't blow and the sun doesn't shine.

A policy document on the web site UK.gov sets out the workings of the government's Electricity Market Reform (EMR) plan. The overarching policy objective is that "the reformed electricity market will deliver the low carbon energy and reliable supplies that the UK needs, while minimizing costs to consumers." Sounds like nirvana.

Quoting from the web site and without getting into many of the details, the workings of the plan are to secure the UK's energy supply and to keep consumer power bills down. With respect to the supply, the plan states:

"The risks to the security of the UK's energy supply will increase, if there is not significant investment in the UK's energy network. The Department of Energy & Climate Change (DECC) and the Office of Gas and Electricity (Ofgem) markets models suggest capacity margins will tighten towards the end of this decade, significantly increasing the risk to reliable supplies.

"The Capacity Market will help keep the lights on by driving new investment in gas and demand side capacity, as well as getting the best out of our existing generation fleet as we transition to a low carbon electricity future.

"By supporting all forms of low-carbon generation, CFDs [Contracts for Difference] will diversify the UK's domestic energy supply. This will help improve the UK's energy security and reduce reliance on energy imports. It will also ensure we keep the lights on and protect consumers against global spikes in fossil fuel prices."

“Our latest analysis suggests that EMR will reduce household electricity bills by £41 (\$67) or 6 per cent per year on average over the period 2014-2030”

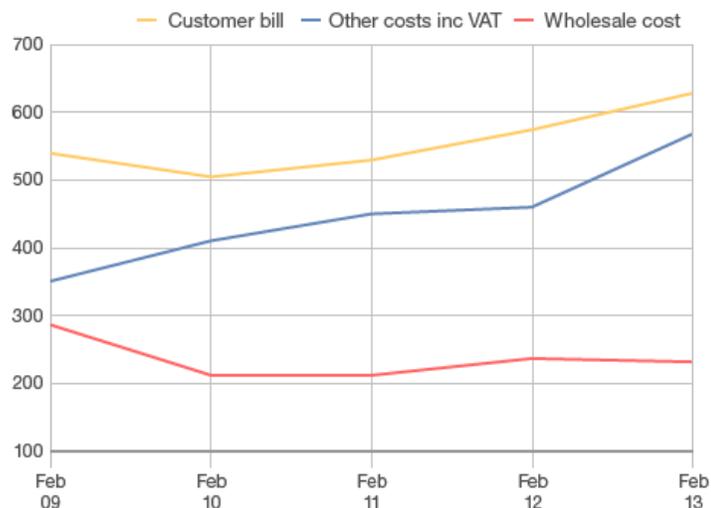
With respect to keeping consumer bills down, the EMR states:

“The ultimate aim of these reforms to the electricity market is to create a competitive environment in which low-carbon technologies compete fairly on price and so deliver the best deal for the consumer. Our latest analysis suggests that EMR will reduce household electricity bills by £41 (\$67) or 6 per cent per year on average over the period 2014-2030 compared to meeting the Government’s objectives using existing policy instruments.”

Exhibit 7. Brits’ Power Bills On The Rise

Typical electricity bill, 2009-2013

£/customer/year



Notes: Customer bill is for standard tariffs, weighted by payment method and market share. Average figures assume electricity consumption of 4MWh/yr. Figures rounded to nearest £5 and may not sum due to rounding.
Source: Ofgem

Source: Ofgem

According to government figures through January 2014, electricity prices rose by 6% while prices for natural gas used for heating increased 7% during 2013

It is interesting to see what has happened to average customer annual electricity bills between 2009 and 2013. After dropping in 2010, customer electricity bills have risen steadily into 2013. According to government figures through January 2014, electricity prices rose by 6% while prices for natural gas used for heating increased 7% during 2013. We wonder about the government’s goal of cutting electricity prices by 6% on average per year from now through 2030 compared to alternative power structures. How much is the government betting on reduced costs from wind and solar, which are being developed aggressively, but so far have not been able to overcome the shrinking supply margin challenge National Grid is facing now? The government policy statement acknowledged that the supply margin would narrow as the end of the decade approaches, but with a few mishaps the future is now. We also are unsure how much the EMR is counting on renewables to help bring electricity bills down per their projection.

This potentially devastating power supply situation could derail the operations of businesses and in turn disrupt the expected growth of the UK economy, the lone star of the European Union economy

National Grid has £800 (\$1,306) million available to spend on this volunteer power program, and it estimates that it will only add £1 (\$1.63) to household bills. After three winters of essentially full utilization of the UK's fossil fuel-fired power plants, regulators and possibly utility managements may have become complacent. One can never guarantee 100% uptime for power plants. This potentially devastating power supply situation could derail the operations of businesses and in turn disrupt the expected growth of the UK economy, the lone star of the European Union economy. Add the UK now to the list of Germany, Spain and Portugal as struggling economies shackled with the fallout from aggressive green energy pushes. Should this be a warning for the U.S.?

After Hiatus, Keystone XL Pipeline Battle Resumed Friday

A hearing was held Friday about the decision by Lancaster County District Judge Stephanie F. Stacy claiming that the law under which the state's governor had approved the route of the Keystone XL pipeline was unconstitutional

In the chambers of the Nebraska Supreme Court in Omaha, a hearing was held Friday about the decision by Lancaster County District Judge Stephanie F. Stacy claiming that the law under which the state's governor had approved the route of the Keystone XL pipeline was unconstitutional. The judge, in a case brought by three landowners, decided that LB1161, the law passed by the state's legislature at the end of its session in 2011 that shifted the approval of the pipeline route from the state's Public Service Commission (PSC) to the governor, was unconstitutional, and as such the judge instituted a permanent ban against Governor Dave Heineman (Rep.) or any other defendant in the case "from taking any action on the governor's January 22, 2013 approval of the Keystone XL Pipeline route." The surprise ruling that was handed down on February 19th of this year was immediately appealed by the governor and has now advanced to the Supreme Court.

The issue is whether the Keystone XL pipeline, traveling for something over 200 miles through the state of Nebraska but neither accepts or delivers product within the state, is a common carrier pipeline that is regulated by the PSC

The issues in dispute involve the siting of a pipeline, in this case the Keystone XL pipeline, when the state did not have a specific siting law for a non-common carrier pipeline, and the issue of who should approve a non-common carrier pipeline. At the heart of the case is the issue of whether the Keystone XL pipeline, traveling for something over 200 miles through the state of Nebraska but neither accepts or delivers product within the state, is a common carrier pipeline that is regulated by the PSC. The judge ruled that Keystone was a common carrier and should be regulated as such, meaning that the approval of the pipeline route rests with the state's PSC. The governor's lawyers argued that Keystone was not a common carrier and that the route could be approved in other ways outside of the PSC's authority. The purpose of the newly enacted law was to establish another way that non-common carrier pipelines could be approved, including Keystone XL. The judge also determined that this law as written specifically for TransCanada (TRP-NYSE), another questionable action. We don't know whether the issue of the standing of the landowners bringing the suit, which was raised by TransCanada but ignored by the district judge, will be explored in

If the court upholds the county judge's decision, then TransCanada, the sponsor of Keystone, would be forced to restart its permit application process in Nebraska that could setback the federal government approval into 2016 or possibly 2017

this hearing. The Keystone XL pipeline route did not cross or even touch the land of any of the three landowners who brought the suit.

As a result of the court ruling, the Obama administration determined that the legal uncertainty over the pipeline's route required the President to defer any ruling on the pipeline's application for a permit to build the interconnector segment crossing the Canadian/U.S. border. It was fairly quickly determined that the Nebraska Supreme Court would not deliver its verdict on the appeal until after the November mid-term elections. It is still uncertain when the ruling might be issued – any time between mid-November and the spring of 2015 have been offered up as likely decision points. If the court upholds the county judge's decision, then TransCanada, the sponsor of Keystone, would be forced to restart its permit application process in Nebraska that could setback the federal government approval into 2016 or possibly 2017. However, should the court overturn the lower court ruling then it is likely TransCanada, along with its political and union supporters, would begin an active lobbying effort to persuade President Barack Obama to approve the pipeline permit. That effort, however, could be derailed by events and personnel changes at the Department of State during the past eight months.

One of the first events was the release in late February of the investigation by the State Department's Inspector General into the selection process of the consultant who conducted and wrote the Environmental Impact Statement (EIS) stating that the Keystone XL pipeline would not contribute to increased carbon emissions as those Canadian oil sands would be developed with or without the pipeline. This eliminated one of President Obama's critical tests for fossil fuel projects that they do not contribute to increased emissions as a result of their operation. President Obama set forth that test in his Earth Day speech last year.

“(vi) this prior work had not impaired ERM's objectivity; (vii) the totality of information provided by ERM to the Department was not misleading; and (viii) the Department's conflict of interest guidance is consistent with pertinent regulations and case law.”

As the IG report concluded: “Specifically, OIG's [Office of Inspector General] review found the following: (i) ERM [the consultant] had fully disclosed the prior work histories of its team members as part of its proposal; (ii) L/OES [Legal Advisor/Oceans, Environment and Science] attorneys had reviewed and researched the nature of the prior work and had discussed the prior work with ERM in the pre-selection interview; (iii) L/OES attorneys had determined that the prior TransCanada work occurred before the staff began work at ERM and that none of the prior work had involved Keystone XL; (iv) the Department's prescribed conflict of interest guidance provides four factual scenarios that may create impairments to objectivity; (v) the employees' prior work histories did not involve any of those four scenarios; (vi) this prior work had not impaired ERM's objectivity; (vii) the totality of information provided by ERM to the Department was not misleading; and (viii) the Department's conflict of interest guidance is consistent with pertinent regulations and case law.” While granting a clean bill of health to the State Department's consultant selection process, the IG did say that the department "did

The environmental movement was outraged, calling the IG report a “whitewash”

not fully document its process," which it suggested included the details on how officials weighed potential conflicts of interest at ERM before selecting it. Do you sense this might be an area an environmental lawsuit might want to explore?

As expected, the environmental movement was outraged, calling the IG report a “whitewash” and calling for civil protests if a more “serious” investigation into the conflict was not undertaken. Leading politicians in the climate change community requested an “unbiased” investigation into the IG’s report and the conflict from the General Accountability Office. A review of the GAO’s web site listing investigations doesn’t show any report having been issued yet. That search was undertaken after a Google search failed to uncover any stories about a GAO report.

Mr. Benes was a long-time employee of a Washington, D.C. law firm that performed work for TransCanada

So as everyone awaits the Nebraska Supreme Court’s decision, it is also instructive to note that since January a number of key State Department officials involved in the Keystone XL permit approval process have left the department. Included in those departures was Keith Benes, an advisor to the department who fielded industry and environmentalists’ concerns. Interestingly, Mr. Benes was a long-time employee of a Washington, D.C. law firm that performed work for TransCanada. Carlos Pascual, State Department Special Envoy and Coordinator for International Energy Affairs, Kerri-Ann Jones, U.S. Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs, and Genevieve Walker, NEPA [National Environmental Policy Act] Coordinator have all left the State Department. Without these people, some of whom were likely proponents of Keystone XL, will any pushback or a legal attack on the EIS have greater success than efforts in the past when these people were there?

Grasping for a legacy in 2015 and 2016, the President might determine that the permit is worthy of denying in order to boost his standing with his loyal Democratic environmental supporters

Depending on whether the light at the end of the Keystone XL pipeline approval tunnel is either a train or daylight will only mark the next stage of the environmental battle. We still have the possibility that Secretary of State John Kerry, a long-time environmentalist, might decide to overturn the judgment of his predecessor who stood for Keystone XL. There certainly will be an avalanche of legal challenges to an approval of the permit on multiple grounds. Some of the challenges are determined to push up the cost of the project and delay its timing for TransCanada. Lastly, we still have no idea what President Obama will decide. Grasping for a legacy in 2015 and 2016, the President might determine that the permit is worthy of denying in order to boost his standing with his loyal Democratic environmental supporters. That’s the scenario we are leaning toward.

Can You Trust The Financial Data Used To Analyze Energy?

The world continues moving toward one where everything can be defined by data, thus enabling analysts, bureaucrats and politicians

“An innovation boom is bringing lower costs and higher productivity, but how long will it last?”

A key point made by the author was that “No oil boom can last for ever,” so conditions will change at some point in the future

We knew that E&P companies were producing better financial results, but interestingly some of that improvement was driven by activist shareholders

to model and predict outcomes from shifts in policies. From the early days when computers first debuted, however, the concept of “garbage in, garbage out” was born to describe those situations where programmers entered bad data into a computer program that then produced answers that made no sense. We still suffer from that phenomenon despite the best efforts to avoid such situations. Usually, these failures reflect times when the people inputting the data fail to assure its accuracy. We think that may have happened in an assessment of the profitability of shale explorers.

A recent article in the *Financial Times* discussed the future of the shale revolution in the United States. The title of the article was: “US shale: What lies beneath,” but the thrust of the article could be best summed up in the tag line under the headline that read: “An innovation boom is bringing lower costs and higher productivity, but how long will it last?” The question the article’s author poses has been and continues to be actively debated with important implications for the future of the U.S. economy and our energy industry that will reverberate throughout the world.

The article presents data points and comments from companies active in the shale formations highlighting the operating and technical improvements they have made in the past few years that explain the dramatic increase in U.S. oil and natural gas production. It also quoted analysts critical of the nation’s reliance on a never-ending shale boom along with those who hold to the optimistic view of shale’s contribution to energy independence. A key point made by the author was that “No oil boom can last for ever,” so conditions will change at some point in the future. He went on to try to figure out how that future might look by asking analysts about their view of the trend in future oil prices as well as the economics of shale wells. An important point he made was that the exploration companies active in the shale formations are now seeing their financial positions improving rapidly. This is where we found a problem with the article. It is not that things aren’t improving as higher production and healthy commodity prices are boosting companies’ cash flows, but the chart used to illustrate this point may have some flaws that possibly undercut that conclusion.

The chart in Exhibit 8 on the next page shows the free cash flow per share for the exploration and production companies included in the Standard & Poor’s 500 Stock Index. We noticed the chart showed a steady rise in that measure following the collapse associated with the financial crisis of 2008. Recently, free cash flow per share, which was level during the second half of 2013, started climbing sharply higher during the first half of 2014. We knew that E&P companies were producing better financial results, but interestingly some of that improvement was driven by activist shareholders pressuring managements to cut spending, sell assets and focus on returning more capital to shareholders. We decided to investigate which E&P companies were in the S&P 500

Exhibit 8. Is This Data Really Accurate?**S&P 500 exploration and production companies cash flow**Free cash flow per share
(\$)

Source: Thomson Reuters Datastream

Source: *Financial Times*

to better understand the movements in the chart. What we found was surprising.

So of the six integrated oil and gas companies, at least two should be shifted to the E&P subsector while a third should be moved into the oilfield services space

There are currently 44 companies classified as energy in the S&P 500 Index. Seventeen of them are oilfield service, pipeline or solar energy companies. Of the remaining 27 companies, they fall into one of two energy subsectors – Oil & Gas, E&P or Integrated Oil & Gas. This would seem to be an easy categorization as most analysts understand that an integrated oil and gas company has both oil and gas production operations and refining facilities to process crude oil and natural gas into petroleum products. It is clear Chevron Corp. (CVX-NYSE), Exxon Mobil Corp. (XOM-NYSE) and Murphy Oil (MUR-NYSE) are integrated oil operations. A company that has transitioned from being an integrated operation into an E&P company under duress from an activist shareholder is Hess Corp. (HES-NYSE), suggesting that it should be reclassified. More troubling was finding Noble Corp. (NE-NYSE), a leading offshore drilling contractor classified as an integrated oil and gas company. Surprisingly, Chesapeake Energy (CHK-NYSE), the subject of attack from activist investors that led to the exit of the founding CEO, Aubrey McClendon, and massive sales of producing and fallow acreage in order to improve the financial condition of the company, was also classified as an integrated oil and gas company. So of the six integrated oil and gas companies, at least two should be shifted to the E&P subsector while a third should be moved into the oilfield services space.

The inclusion of these three companies in the E&P subsector could easily distort the determination of the group's free cash flow per share since pipeline companies tend to have large and steadily rising free cash flows

We remain cautious about the implications the charts convey when we are aware of possible data quality issues

Turning to that E&P subsector, the 21 companies in the S&P 500 index included a couple of surprises. First was ONEOK (OKE-NYSE), a pipeline company with an E&P division. The second surprise was finding Peabody Energy (BTU-NYSE), the leading coal producer in the U.S., listed as an E&P company. We also found Williams Companies (WMB-NYSE), a significant nationwide owner and operator of pipelines included in the E&P subsector. We have to believe that the inclusion of these three companies in the E&P subsector could easily distort the determination of the group's free cash flow per share since pipeline companies tend to have large and steadily rising free cash flows. What we don't know is whether *Thomson Reuters Datastream* adjusted the data for these non-E&P companies. We also don't know what the subsector looked like in the past as we didn't try to go back in time to see whether the composition of the group had changed, especially given merger and acquisition activity in the industry during the past decade. Additionally, we don't know whether the two energy subsectors were lumped together in preparing the chart, which would further distort the data. If they were grouped together, the integrated oil and gas companies that have very large cash flows could distort the overall group's numbers, and in turn distort the conclusion about the financial performance of the true shale E&P explorers.

We fully understand and appreciate the challenge for a newspaper to seek easy to prepare chart illustrations to accompany their business articles, so we don't blame the *Financial Times*. The problem really lies with Standard & Poor's for not appropriately determining companies that fall into subsectors. For those of us who know, understand and appreciate the challenges of managing data for illustrating charts, we remain cautious about the implications the charts convey when we are aware of possible data quality issues. In this case, because we know of possible data issues, without greater disclosure of what data went into the chart we remain skeptical of the article's conclusion about the profitability of E&P companies, especially those focused on the shale formations.

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