PPHB
ENERGY INVESTMENT BANKING

MUSINGS FROM THE OIL PATCH

April 1, 2014

Allen Brooks
Managing Director

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

Does EIA Drilling Productivity Report Reflect Real World?

Drilling horizontal and hydraulically fracturing shale wells has changed the forecasting landscape

Last October, the Energy Information Administration (EIA) announced it would introduce a new publication that focused on the impact of drilling rig productivity on oil and gas output. This report was developed to assist the EIA in its forecasting of future oil production given that the American shale revolution has altered the historic relationship between active drilling rigs and oil and gas production. Drilling horizontal and hydraulically fracturing shale wells has changed the forecasting landscape. What the EIA concluded was that it could identify the additional barrels of crude oil and thousand cubic feet of natural gas that came from the addition of one average working rig in a basin. It also concluded that measuring this addition would enable the agency to forecast output two months into the future.

If more gas was produced while fewer rigs worked, there has to be an explanation tied to improved drilling performance

The logic of what the EIA is attempting to do makes sense, and reflects the need to capture technology innovations drillers are introducing. These innovations were allegedly responsible for the dramatic growth in shale gas output a few years ago while the rig count remained flat or declined. If more gas was produced while fewer rigs worked, there has to be an explanation tied to improved drilling performance. Capturing this dynamic has bedeviled the land drilling segment, which has struggled to understand exactly what types of new rigs to build, but more importantly, how many of them will be needed to produce the projected oil and gas output suggested by producers and industry forecasters.

We have dealt with this topic before and will continue to explore the nuances of technological change in the oilfield service industry and its impact on oil and gas output, not only because it is an interesting topic, but primarily because understanding the dynamic may enable us to anticipate changes in the underlying oil and gas industry

relationship that could create serious economic and industry upheavals.

Exhibit 1. One Of Two Star Oil Shale Basins In The U.S.

Source: OpTeryx Mineral Management

We were startled by the chart showing a steady increase in the basin's oil output and the accompanying forecast for future monthly increases

We recently authored an article in the *Musings* discussing the impact of the extremely cold winter on oil output in the Bakken basin of North Dakota. When we examined the EIA's March Drilling Productivity Report, we were startled by the chart showing a steady increase in the basin's oil output and the accompanying forecast for future monthly increases. That shock sent us back to look at all the monthly charts for the Bakken's output projected by the EIA. Every month showed a projected output increase. Given what we knew about the production output during the winter months obtained directly from the North Dakota Department of Mineral Resources (DMR) that showed a significant drop in production, and especially Bakken output, which is what dominates the state's oil production, we wondered about the EIA's forecasts.

To explore the subject, we plotted the monthly output estimated by the EIA along with its next month forecast. We then looked at what the starting point for production was the next month along with its projected output one month forward. We did that for each month from October 2013 through March 2014, which gave us an estimate of Bakken production for April 2014. Next, we went to the North Dakota DMR web site and got each of the month's preliminary and revised monthly production statistics for the entire state and for the Bakken formation. All of monthly data is presented in Exhibit 2.

That estimate contrasts with the EIA's January 2014 projected output of 1,025,000

As the DMR data is reported with a lag of two months, the last preliminary monthly output figure for the Bakken formation is for January 2014 of 871,672 barrels per day (b/d). That estimate contrasts with the EIA's January 2014 projected output of 1,025,000 b/d made in December 2013. That is a difference of 153,328 b/d, or

17.6% of the DMR estimate and 15% of the higher EIA estimate. If we measure the DMR Bakken production estimate against the EIA's starting point in January, the difference is 15.2%.

Exhibit 2. Understanding Bakken Output Estimates

	EIA Drilling Productivity Report							ND DMR	
	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	Total	Bakken
Oct-13	935,000							945,182	880,014
	26,000	41,000						946,030	879,870
Nov-13	961,000	976,000						973,045	911,292
		26,000	24,000					977,609	911,732
Dec-13		1,002,000	1,000,000					923,227	862,987
			25,000	11,000				926,687	865,641
Jan-14			1,025,000	1,011,000				933,133	871,672
				25,000	33,000				
Feb-14				1,036,000	1,044,000			Red = revised data	
					23,000	29,000		Blue = actual	
Mar-14					1,067,000	1,073,000		(All production in	
						18,000		barrels per day)	
Apr-14						1,091,000			

Source: EIA, North Dakota DMR, PPHB

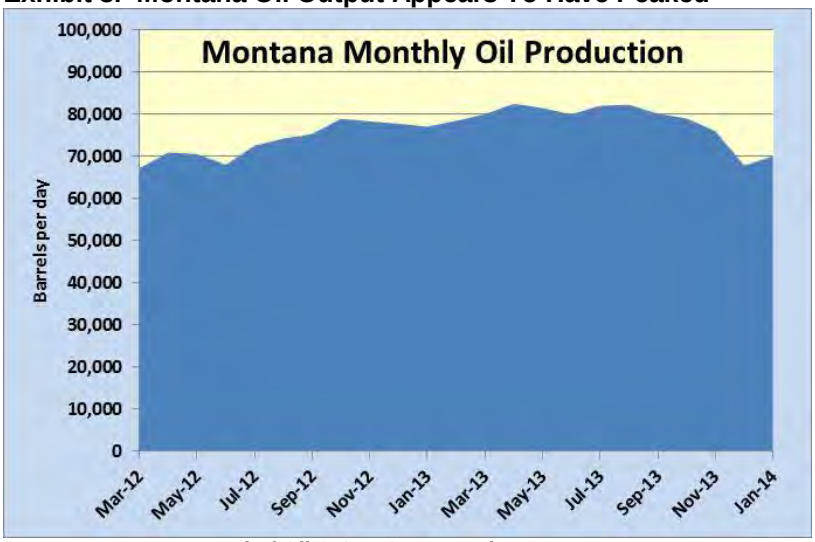
As of March 21, 2014, there were only seven drilling rigs working in Montana versus 179 in North Dakota

What is a possible explanation for this wide a difference? One suggestion is that the Bakken formation extends into Montana, so by only looking at North Dakota's output we are understating the basin's total production. We obtained the monthly oil production figures for Montana for March 2012 through January 2014, as compiled by the Montana Board of Oil and Gas. For the month of January, Montana produced 70,030 b/d, but that figure is for the entire state's oil output, not just for the Bakken. According to the state, the Bakken formation only impacts three of the 100 counties of the state. Moreover, as of March 21, 2014, there were only seven drilling rigs working in Montana versus 179 in North Dakota. Compared to a year earlier, there were 11 rigs in Montana and 174 in North Dakota. The significant point about Montana oil production is that it appears to have peaked last summer, although we don't know how much of the production drop-off in December and January is weather-related. It is also interesting that the active Montana rig count also peaked last summer at 14 rigs. The chart in Exhibit 3 shows the trend in Montana's monthly oil output.

If we question the forecast for one shale basin in the EIA's report, shouldn't we question all the basin forecasts?

Even if we assume that all of the Montana oil production is related to the Bakken, that still leaves the EIA forecast nearly 83,300 b/d higher than the data from the two state agencies responsible for monitoring the petroleum industry in their respective states. Despite the old joke that the EIA's estimate miss is "good enough for government work," we think that large a miss raises questions about the forecasting model. If we question the forecast for one shale basin in the EIA's report, shouldn't we question all the basin forecasts? The Bakken exercise was the easiest to undertake –- as it is not easy to secure the state production data for the other basins.

Exhibit 3. Montana Oil Output Appears To Have Peaked



Source: Montana Board of Oil & Gas Conservation, PPHB

Understanding these drilling dynamics will help to define the possible future for the oil and gas producing companies

We plan to further investigate the relationship between active drilling rigs and oil and gas production in future *Musings* articles. The industry must understand the dynamics shaping the future land rig market, as it will impact onshore drilling contractors. It is also an important factor in understanding the business trends impacting the onshore oilfield service sector. In the end, understanding these drilling dynamics will help to define the possible future for the oil and gas producing companies.

Saudi Arabian Royal Succession Clarified But Not Resolved

The royal decree, described as unchangeable

The night before President Barack Obama was scheduled to arrive in Saudi Arabia for a visit with King Abdullah bin Abdulaziz in an attempt to repair the deteriorating relationship between the two countries, the royal family announced the king's two successors. When we wrote about the challenges confronting the Saudi royal family a while ago, we pointed out that succession was a potential time bomb for the kingdom since (at the time) it was unknown whether power would remain with the current generation of princes or flow to the younger princes who likely view the social and geopolitical challenges the country faces differently than their elders. The royal decree, described as unchangeable, was a surprise, but acknowledges that a battle over succession could be destabilizing for the kingdom and possibly threaten its continued existence.

Crown Prince Salman bin Abdulaziz, the 79 year old son of the founder of the country, was designated as the successor to King Abdullah. Prince Muqrin bin Abdulaziz, age 69 and the youngest surviving son the founder of modern Saudi Arabia, was appointed second in line to the throne. This announcement means that several

of the standouts among the younger princes must wait longer before moving up to leadership roles. It also means that another surviving son of King Abdulaziz ibn Saud, Prince Ahmed, 72, and the senior prince closest to the Kingdom's religious conservatives, is unlikely to reach the throne.

It was noteworthy that the council of senior princes, created by King Abdullah in 2006 to weigh succession issues, voted by more than three-fourths, and in secret, to approve these appointments

There are two intriguing aspects of the surprise announcement. First, it was noteworthy that the council of senior princes, created by King Abdullah in 2006 to weigh succession issues, voted by more than three-fourths, and in secret, to approve these appointments. It suggests that the royal family wanted to make clear to President Obama that the Saudi's were thinking that their role in the Middle East geopolitical maelstrom was not likely to change in the foreseeable future. Therefore, whatever King Abdullah was about to tell Mr. Obama should not be dismissed.

He is considered a cautious reformer like his half-brother King Abdullah

The second intriguing aspect is that Prince Muqrin's mother is from Yemen and not of Saudi lineage, which had many succession watchers convinced he could never reach the throne. The Prince, a former air force pilot and educated in Britain, is reportedly the eyes and ears for King Abdullah. Moreover, he is considered a cautious reformer like his half-brother King Abdullah. This move suggests that social stability in Saudi's commitment to its rule under Islamic law was of greater importance than strict adherence to Saudi lineage. That view is supported by a statement in the decree, signed by the king, announcing the appointments. The statement said that the ruling family was acting "to maintain the structure of the state and its future, and to guarantee – with God's help – continuity on the basis on which it was founded."

Succession battles in the mid-19th century helped to bring down a kingdom of the House of Saud

The next significant milestone for the royal family will be developing a process for transferring leadership to the younger generation of princes. Saudi Arabia is only 82 years old in its present form, having been declared a modern state in 1932 by founder King Abdullah ibn Saud. Succession battles in the mid-19th century helped to bring down a kingdom of the House of Saud, so the current move provides more time for the family to develop a peaceful process to transfer power likely within the next two decades. If stability in Saudi politics and society is what the royal family desires, does that also mean stability for its oil policy?

Ukraine, Europe's Energy Situation And An American Rescue

The role of America's energy revolution is being cited as a lever to mitigate a potential European energy squeeze by Russia

It is an understatement to say the world's attention in recent weeks has been fixed on the confrontation developing between the West and Russia following the latter's move to annex the Crimea region of Ukraine. Leaving the politics aside, the role of America's energy revolution is being cited as a lever to mitigate a potential European energy squeeze by Russia. That point was driven home to us last week by a small news article in the *Financial Times* with the headline "US gas exports seen as bargaining chip."

The lead sentence (a paragraph in length) set forth the thesis that seems to be driving much of the economic power struggle underway. The *Financial Times* said, "Eastern European governments see the prospect of US natural gas exports as a bargaining chip they can use to secure lower prices from Russia's Gazprom (GAZ.SG) in negotiations over new long-term contracts." This bargaining chip theory received additional ammunition when on the day prior to the article's publication, the Department of Energy approved the Jordan Cove Energy Project for exporting liquefied natural gas (LNG) to non-free- trade countries such as Japan and India from an export terminal to be constructed in Coos Bay, Oregon. This approval was the seventh LNG export license to be granted, and the sixth one approved within the past ten months. More importantly, this would be the first terminal to be located on the U.S. West Coast. To date, the seven licenses have been granted to six terminals that when operating at maximum output will be exporting 9.27 billion cubic feet of gas per day, a volume approaching the upper limit of what consultants say is the maximum amount that could be exported without driving gas prices up and possibly crippling the gas-dependent segment of the U.S. economy.

This approval was the seventh LNG export license to be granted, and the sixth one approved within the past ten months

There has been speculation that the timing of this export terminal approval was helped by the geopolitical pressures from the Ukraine situation. However, there are about two-dozen export terminal applications still pending at the Energy Department, and pressure is building on the Obama administration to grant approvals faster. In fact, legislation has been introduced in Congress to approve all the terminal applications as being in the national interest and then allow their sponsors and financiers to decide which ones to build.

Legislation has been introduced in Congress to approve all the terminal applications as being in the national interest

Lithuania, Estonia, Hungary and Bosnia-Herzegovina need to negotiate new gas supply deals with Gazprom because they have contracts that expire next year. The countries are feeling emboldened by the prospect of additional U.S. LNG export terminals as U.S. exports would provide these nations with greater fuel supply flexibility, and possibly at lower costs. According to the reporter for the *Financial Times* who was shown a draft of the communique to be issued following last week's G7 meeting in The Hague, it says: "We welcome the prospect of US LNG exports in the future since additional global supplies will benefit Europe and other strategic partners." The problem with the draft, according to a European diplomat, was t hat the Obama administration was not comfortable with the statement, fearing a backlash from environmental supporters and U.S. manufacturers that use gas and who are concerned about the negative impact from higher fuel prices. It appears that this language was not part of the communique issued following the Brussels meeting last week.

The countries are feeling emboldened by the prospect of additional U.S. LNG export terminals as U.S. exports would provide these nations with greater fuel supply flexibility, and possibly at lower costs

The challenge for Europe is the nature of its energy supplies, of which a significant amount comes from Russia. As we pointed out in an article earlier this year about the decision by the government of

the Netherlands to reduce the output of the giant Groningen gas field due to concerns about earthquakes associated with the production damaging neighboring buildings, the beneficiary would be Gazprom who would be able to sell additional gas into Europe to replace the lost Dutch gas volumes. As it is, Europe receives about 30% of its gas imports from Russia.

Europe has largely depended on gas supplies from a few locations – Russia, Algeria, the North Sea and continental Europe

Europe has largely depended on gas supplies from a few locations – Russia, Algeria, the North Sea and continental Europe. That dependence is obvious when one looks at the map in Exhibit 4. Because the continent has been focused on cleaning up its energy supplies, coal, while an important energy source has been in decline both due to depletion of the resource and closure of mines. Europe has become an important destination for the growing global LNG trade.

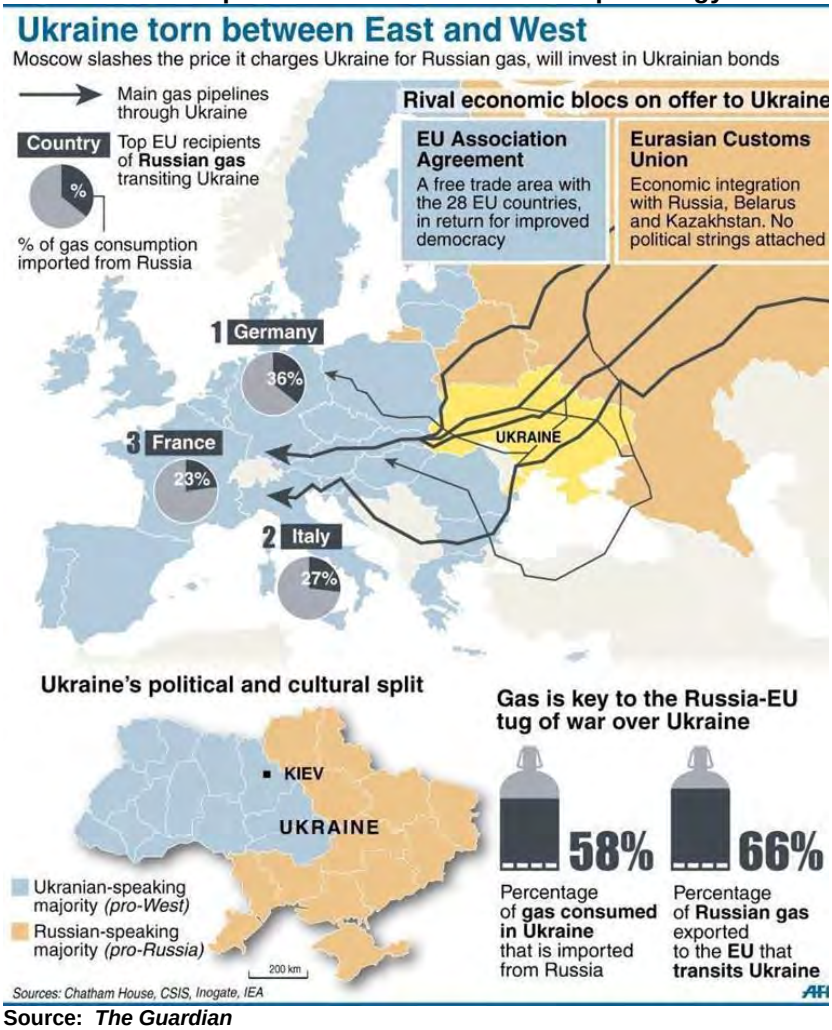
Exhibit 4. The Russian Dependent Gas Pipeline Grid

Source: www.kongregate.com

In the past decade, there were several times when Russia has cut off gas supplies to its Eastern European clients due to a lack of payment

The strategic importance of the Ukraine as a funnel for gas supply from Russia cannot be underestimated. In the past decade, there were several times when Russia has cut off gas supplies to its Eastern European clients due to a lack of payment. Whenever that has happened, there have been quick economic and political reactions throughout all of Europe as the economies depend on this supply for heat during the winter and electricity all year.

Exhibit 5. The Importance Of Ukraine For Europe Energy

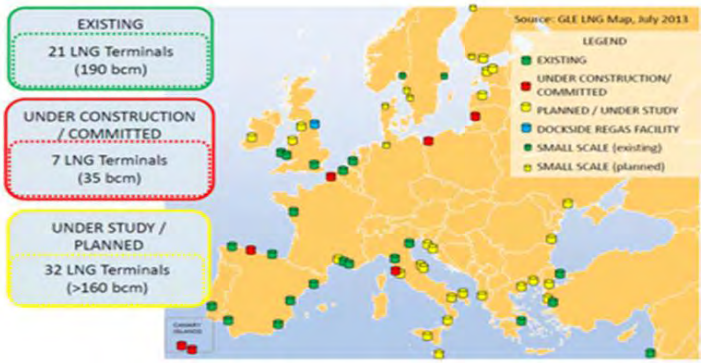


Source: ***The Guardian***

Europe has been building an energy infrastructure that would accommodate increased supplies of natural gas from foreign markets

While there is little the United States can do to alter the European gas-supply balance in the near-term, it could impact the balance in the future, depending on global price trends for LNG. Fortunately, Europe has been building an energy infrastructure that would accommodate increased supplies of natural gas from foreign markets. The chart in Exhibit 6 shows the current location of LNG import terminals and where plans exist to construct new terminals.

Exhibit 6. Existing And Planned LNG Import Terminals

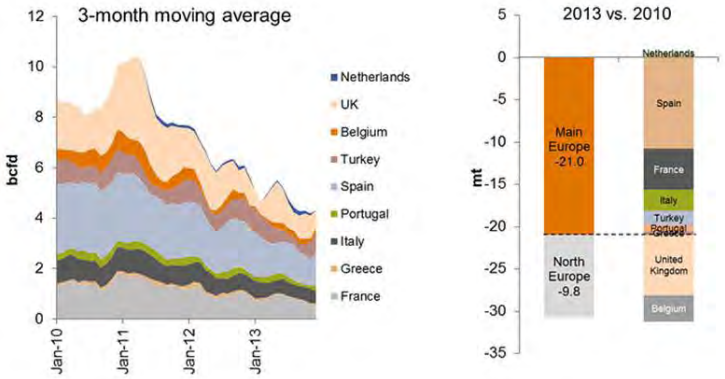


Source: CLE

According to data for 2013 from the IEA, Europe imported a total of 80.1 billion cubic meters of LNG

The problem for Europe isn't so much the number of LNG terminals, but rather their use. According to data for 2013 from the International Energy Agency (IEA), Europe imported a total of 80.1 billion cubic meters of LNG. But gas import volumes are down sharply due to the combination of warm weather, a weak economy and competing markets willing to pay substantially higher prices for LNG, opening the door for cheaper coal to gain market share.

Exhibit 7. Europe LNG Imports Are Down Sharply



Source: BG Group

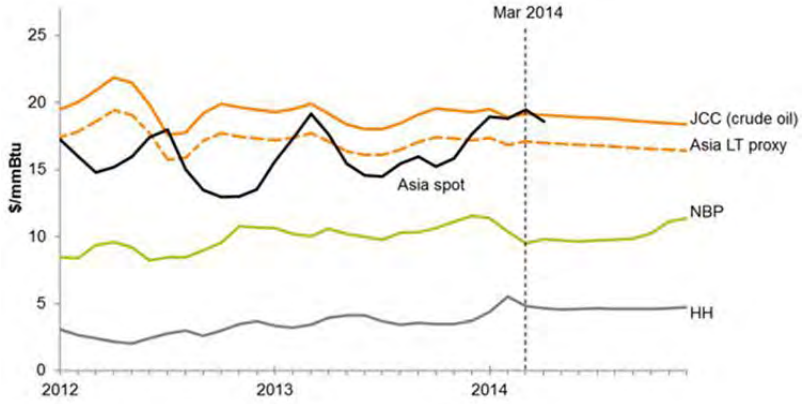
As of today, nine European countries have the capacity to re-export LNG, meaning the gas can be traded based on global profit opportunities

The BG Group (BRGYY-OTC), an active participant in the global LNG business, estimates that Europe imported 35 million tons of LNG in 2013, the lowest level since 2004, and well below the peak volume of 66 million tons imported in 2011. Of strategic significance is that of this LNG import volume, some 4.1 million tons were re-exported, with Spain accounting for more than half of the transshipments. As of today, nine European countries have the capacity to re-export LNG, meaning the gas can be traded based on global profit opportunities. With LNG prices in Asia well above those in Europe, and substantially above Henry Hub prices in the United States, the likelihood is high that new contractual LNG supplies from North America will target Asian markets, while spot prices will influence the volume of LNG that might wind up in Europe.

Current pricing trends highlight the challenge Europe faces in order to secure additional LNG supplies

Current pricing trends highlight the challenge Europe faces in order to secure additional LNG supplies. Because North American LNG shippers will be buying domestic natural gas at market prices, paying to transport it to the export terminals, liquefy the gas, ship it across oceans to markets and then turn it back into gas for delivery to pipelines for shipment to final customers, they will be looking to maximize profits; not accept losses.

Exhibit 8. Global Natural Gas Price Disparity



Source: BG Group

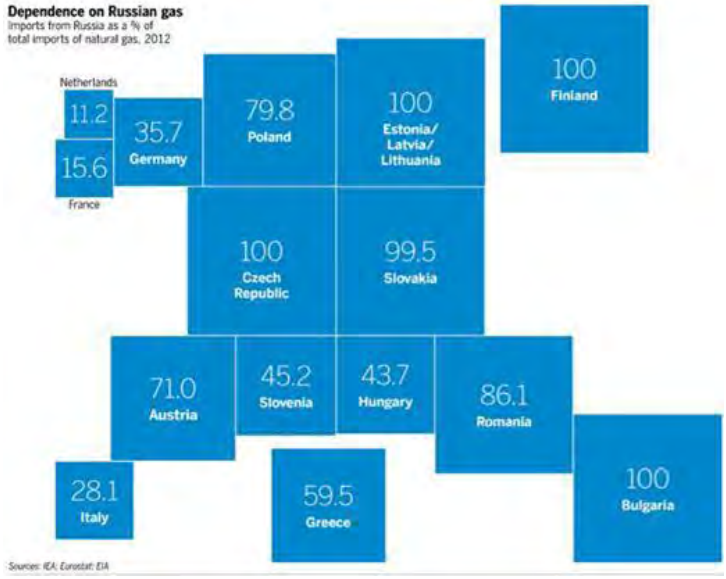
Of the seven export licenses, only one has all the necessary regulatory approvals and sufficient customer commitments to support the financing to build the terminal

The key issues for the various countries in Europe is their dependence on Russian gas imports, their access to alternative supplies and how the global natural gas industry may change over the next five years. People are arguing that American LNG exports, courtesy of the gas shale revolution, will not be available for several years. Of the seven export licenses, only one has all the necessary regulatory approvals and sufficient customer commitments to support the financing to build the terminal. That export facility will not be able to ship its first volume of LNG until late 2015. The other terminals currently approved by the Energy Department will probably not be able to ship LNG before 2017, and possibly later. While the total volume of gas that can be exported from all the terminals currently approved totals 9.25 bcf per day, if all of it were shipped to Europe, it would offset only about 60% of the current volume of gas Europe imports from Russia. The American shale gas optimists would suggest we can export substantially greater volumes of gas than currently approved, but it will be at least a decade before the U.S. could offset all of Europe's current Russian gas supplies.

Russia could elect to reduce the price of its gas going to Europe in order to lock up more of that market and freeze out more expensive LNG supplies

It is possible that in the interim, Russia could elect to reduce the price of its gas going to Europe in order to lock up more of that market and freeze out more expensive LNG supplies, including any U.S. volumes that might be targeting the market. On the other hand, Russia might shift its new gas supply development efforts toward the Chinese and Indian markets, or even Japan and Korea in an attempt to secure access to large, less price-sensitive markets. These

Exhibit 9. European Countries Rely Heavily On Russia



Source: ***Financial Times***

Regions where gas is presently cheap, but the owners are hoping to capture high-priced LNG market share, could see those opportunities disappear

strategies would reshape the global natural gas market. They could impact the pace of development for the next wave of LNG supply from high-cost regions such as Australia and Latin America. Regions where gas is presently cheap, but the owners are hoping to capture high-priced LNG market share, could see those opportunities disappear. That could lead to an extended period of oversupply due to gas volumes developed in anticipation of LNG export opportunities that evaporate. Welcome back to the gas bubble that became the gas sausage. While Russia is not China, it may be hoping to inflict the ultimate Chinese curse on North America, and in particular the United States – May you live in interesting times!

Are Renewables Helping Or Hurting Our Population?

According to data from the EIA, consumption of renewable fuels totaled 8.5 quadrillion British thermal units (QBtus) in 2013, up from 8.1 QBtus in 2012

The U.S. Congress is once again considering the question of whether to reinstate some of the tax subsidies for renewable fuels. As expected, the issue is controversial since subsidies and mandates are foreseen as the lifeblood of uneconomic energy projects across the nation. According to data from the Energy Information Administration (EIA), consumption of renewable fuels totaled 8.5 quadrillion British thermal units (QBtus) in 2013, up from 8.1 QBtus in 2012. The EIA, in its latest Short-Term Energy Outlook, suggested that in 2015 renewables consumption will rise to nearly 9 QBtus.

In 2013, hydroelectric power accounted for the largest component of renewable energy at 2.6 QBtus, with wood biomass second at 2.0 QBtus. When we add in the contribution from ethanol for gasoline of

The two primary renewable fuels are not given subsidies as the nation is largely done building dams and environmentalists frown on burning wood

1.1 QBtus, these three renewable fuels account for nearly 70% of U.S. consumption. The two primary renewable fuels are not given subsidies as the nation is largely done building dams and environmentalists frown on burning wood. The Environmental Protection Agency (EPA) has already rolled back the supply requirement for ethanol due to falling gasoline demand, which has reduced that fuel's subsidy. The renewable fuels proponents are focused on getting wind and solar energy subsidies reinstated. But is this a good use of America's tax revenues?

He questions whether government efforts, via energy subsidies, are helping the largest number of people at the least overall cost

One of the most iconic thinkers about the environment, social costs and government policies is Bjørn Lomborg, the director of the Copenhagen Consensus Center and author of several books questioning the environmental movement and its objectives. Mr. Lomborg recently authored an article, "The Poverty of Renewables," which attempts to demonstrate how the push to mandate more power generated from renewable fuels actually hurts the world's poor. He questions whether government efforts, via energy subsidies, are helping the largest number of people at the least overall cost.

He also points to the $19 billion in subsidies for biofuels that essentially have no climate benefit

In his article, Mr. Lomborg makes several points about subsidies for renewable fuels. First, he points out, based on data from the International Energy Agency (IEA), that solar and wind power was subsidized by $60 billion in 2012, yet the total climate benefit was only $1.4 billion, meaning that governments wasted over $58 billion. He also points to the $19 billion in subsidies for biofuels that essentially have no climate benefit. In his usual style, Mr. Lomborg questions whether the money could have been better spent improving health care, hiring more teachers, building better roads and infrastructure, or possibly reducing taxes.

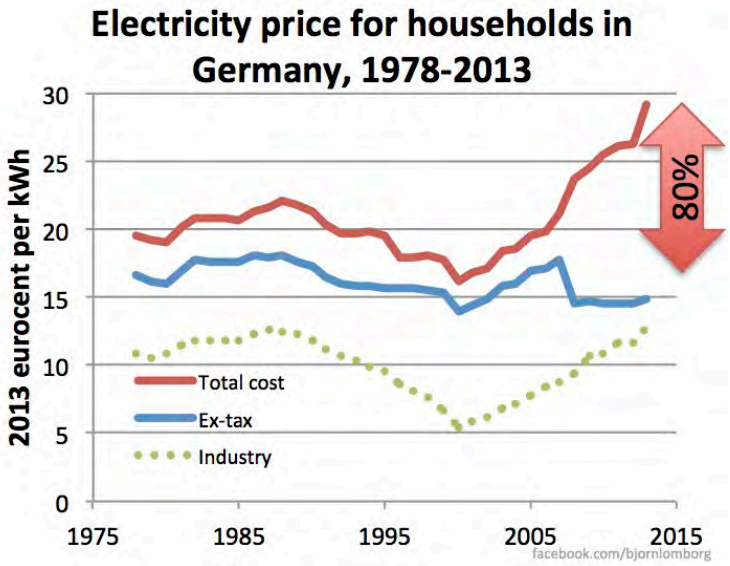
He points out that the German government says that 6.9 million households live in energy poverty, defined as spending more than 10% of their income on energy

Mr. Lomborg discusses the European Union's climate policy and its impact on the continent's poor. According to his article, the average of the macroeconomic models of the EU's energy/climate policy will cost €209 billion ($280 billion) per year from 2020 until the end of the century. In another report that Mr. Lomborg wrote, he points out that the German government says that 6.9 million households live in energy poverty, defined as spending more than 10% of their income on energy. This is partly the result of the government's *Energiewende*, when the country turned away from nuclear power and towards renewable energies as its energy policy. In 2014, this policy will cost German power consumers €23.6 billion ($33 billion) on top of their normal electricity bills for the "renewable energies reallocation charge." This policy has transferred money from the poor residents in the Ruhr Valley area to the wealthy homeowners in Bavaria who put solar panels on their roofs. The charge has increased from 1.15 cents per kilowatt-hour (ct/kWh) in 2008 to 6.24 ct/kWh in 2014. Between 2008 and now, it is estimated that this charge has pushed an additional 1.4 million households into energy poverty.

German consumers have already paid €109 billion ($150 billion) for renewable energies since 2000

He points out how German consumers have already paid €109 billion ($150 billion) for renewable energies since 2000. Greater future costs are on the horizon. Between 2000 and 2013, real German electricity prices for households have increased by 80%, resulting in about one-quarter of household electricity costs now stemming directly from renewable energy costs.

Exhibit 10. Germany's Painful Electricity Bills



Source: Bjørn Lomborg

Mr. Lomborg quotes a recent McKinsey & Company study showing that Germany's domestic energy prices for households rose to 48% above the European average

The impact of Germany's energy policy and its embrace of renewable energies has been an increased cost of electricity in the country – hurting not only the poor but also the country's manufacturing sector. Mr. Lomborg quotes a recent McKinsey & Company study showing that Germany's domestic energy prices for households rose to 48% above the European average. At the same time, European power prices have risen by almost 40% since 2005, while U.S. electricity prices have declined. This disparity is due to U.S. electricity utilizing more cheap natural gas and coal, both of which result from the shale revolution. Lower electricity costs, coupled with increased availability of low-cost natural gas, are behind the American manufacturing revival augmented by the decisions of European manufacturers to build new plants in the U.S. because of its lower power costs.

Spending a euro on green innovation will likely avoid €11 in long-term damages from global warming

In his article about the German energy market, Mr. Lomborg states that "research from some of the world's top climate scientists including three Nobel Laureates for the Copenhagen Consensus Center shows that subsidizing renewables does so little good that for every euro spent, 97% is wasted. However, spending a euro on green innovation will likely avoid €11 in long-term damages from global warming. This would make tackling global warming 500 times more efficient."

Since 1971, China has powered its economic machine almost exclusively with fossil fuels, in particular highly-polluting coal, while lifting 680 million citizens out of poverty

Mr. Lomborg is a proponent of innovation in green energy as the path to a cleaner and cooler planet. On the other hand, he points out that the key to lifting people out of poverty has been fossil fuels. He makes the point that in 1971, 40% of China's energy came from renewables. Since then, China has powered its economic machine almost exclusively with fossil fuels, in particular highly-polluting coal, while lifting 680 million citizens out of poverty. Today, China gets 0.23% of its energy from wind and solar. The Chinese government recently announced it would be tackling its serious air pollution problem through increased use of natural gas and other steps.

Many of them cook and keep warm by burning twigs and dung, producing indoor air pollution that causes 3.5 million deaths a year according to the UN

In Africa, as Mr. Lomborg points out, 50% of its energy comes from renewables and the continent remains poor. Because of their lack of access to electricity, three billion people are mired in poverty with little chance of escaping. Many of them cook and keep warm by burning twigs and dung, producing indoor air pollution that causes 3.5 million deaths a year according to the UN.

"By focusing on our climate concerns, we deliberately choose to leave more than three out of four people in darkness and poverty."

In closing many of his articles dealing with the inefficiency of renewable subsidies, Mr. Lomborg focuses on how they distort their desired effect. In his "Poverty of Renewables" article, he closes with the following statement: "Investing in renewables, we can pull one person out of poverty for about $500. But, using gas electrification, we could pull more than four people out of poverty for the same amount. By focusing on our climate concerns, we deliberately choose to leave more than three out of four people in darkness and poverty." Maybe we should spend more time assessing who benefits from the focus on improving our environment, how much that effort costs and whether there is a way to help improve the condition of more people at less expense.

Energy CEOs Fail To Make The Grade At *Barron's*

"We use no rigid formula to come up with the list"

A week ago, the financial newspaper, *Barron's*, ran one of its periodic special reports highlighting the World's Best CEOs. This is the tenth time the newspaper has produced a list of the 30 CEOs they consider the best in the world. The author of the accompanying story that discussed the list and many of the CEOs who made the grade, comes right out and says, "We use no rigid formula to come up with the list." As a result, the list is open to challenge – another point the writer felt obligated to acknowledge. He wrote in his concluding paragraph that there "may be worthy CEO's we have overlooked" and that "some readers may not agree with some of our selections." He then suggests that if readers have suggestions for worthy CEOs they felt should have been included in the list, they should send the editors of the newspaper an email with the CEO names. We will be interested in any future commentary from the article's author about the volume of names sent in by readers, and maybe who they were.

The value of CEOs is, and has been for years, a hot topic in investment circles

The article had two exhibits. One shows the 22 CEOs who continued on the list from last year along with the eight CEOs who fell off the list. The other exhibit lists the names of the CEO replacements. The value of CEOs is, and has been for years, a hot topic in investment circles. As the article's author pointed out, CEOs are often considered to be overpaid, arrogant and don't care about their shareholders. He went on to say that those CEOs who made the *Barron's* list were worth every dollar the shareholders paid them. The reasons being are that these CEOs are judged to have "qualities that enables their companies to stay ahead of their rivals and deliver market-beating returns for shareholders."

Exhibit 11. Star CEOs Going And Staying

Returning CEOs

CEO	Company	CEO	Company
Bernard **Arnault**	*LVMH*	Leslie **Moonves**	*CBS*
Jeffrey **Bezos**	*Amazon.com*	Alan **Mulally**	*Ford Motor*
Carlos **Brito**	*Anheuser-Busch InBev*	Michael **O'Leary**	*Ryanair Holdings*
Warren **Buffett**	*Berkshire Hathaway*	Larry **Page**	*Google*
David **Cote**	*Honeywell International*	Norbert **Reithofer**	*BMW*
Jamie **Dimon**	*JPMorgan Chase*	Howard **Schultz**	*Starbucks*
Laurence **Fink**	*BlackRock*	Fred **Smith**	*FedEx*
Hugh **Grant**	*Monsanto*	Lars **Sørensen**	*Novo Nordisk*
Nick **Hayek**	*Swatch Group*	Miles **White**	*Abbott Laboratories*
Ma Huateng	*Tencent*	Tadashi **Yanai**	*Fast Retailing*
Carol **Meyrowitz**	*TJX Cos.*	**Yang** Yuanqing	*Lenovo*

Off The List

CEO	Company	Reason
Morris **Chang**	*Taiwan Semiconductor*	Retired after more than 25 years at the helm
Ed **Clark**	*Toronto-Dominion Bank*	Top Canadian banker set to retire later this year
Warren **East**	*ARM Holdings*	U.K. technology leader retired after building chip maker
Larry **Ellison**	*Oracle*	Stock flagging amid threats from cloud computing
José Antonio **Fernández Carbajal**	*Femsa*	Tough Latin American beverage market crimping growth
Pablo **Isla**	*Inditex*	Slowing profit growth at Spanish clothing retailer
David **Novak**	*Yum! Brands*	Profits fell 10% last year amid China slowdown
David **Simon**	*Simon Property Group*	Earnings growth slowing; malls face online shopping threat

Source: ***Barron's***

Exhibit 12. The New CEO Stars

New To The List

CEO	Company	Comment
Richard **Anderson**	*Delta Air Lines*	Innovator boosts profits, cuts debt, pays dividend
Mark **Donegan**	*Precision Castparts*	Lucrative industrial firm mines niche in aerospace
Reed **Hastings**	*Netflix*	TV disrupter; biggest winner in the S&P 500 last year
John **Martin**	*Gilead Sciences*	Leading biotech has blockbuster hepatitis drug
Leonard **Schleifer**	*Regeneron Pharma*	Huge market winner with a fast-growing eye treatment
Masayoshi **Son**	*SoftBank*	Shrewd investor; should make killing from Alibaba IPO
Jeffrey **Sprecher**	*IntercontinentalExchange*	Built top commodity exchange in less than 15 years
Mark **Zuckerberg**	*Facebook*	Social network mints money from huge user base

Source: ***Barron's***

With a few exceptions, the companies headed by these outstanding CEOs are consumer-oriented, or at least touch consumers such as

"the shares of nearly every company on our list have outpaced the Standard & Poor's 500 during the CEO tenure"

commodity trading. Whether it is airlines, pharmaceuticals or auto companies, the ranking of the products with the public helps to explain the company's status. But as the article's author points out, "the shares of nearly every company on our list have outpaced the Standard & Poor's 500 during the CEO tenure. Harsh as it is to say, if CEOs can't beat the market over an extended period, they ultimately aren't adding a lot of value." For investors, this is the key metric for owning a stock.

But to be fair, there are periods in the commodity cycle when energy stocks vastly outperform the overall stock market – usually during recessionary periods

It was interesting that there were no energy company CEOs on this list. That is probably because energy stocks underperformed the S&P 500 last year – and often trail the market whenever commodity price trends are not high. But to be fair, there are periods in the commodity cycle when energy stocks vastly outperform the overall stock market – usually during recessionary periods. As we have observed in our investment career, over long periods that encompass complete business cycles, outstanding energy company managers will make money for their shareholders, assuming the shares were bought and held for the entire time. For many investors who understand the cyclical nature of the industry, maximum investment returns can be made by timing purchases and sales to capture those periods of strong earnings gains.

At the time of the deal, there was much skepticism about the strategy of owning a refinery in order to help hedge the airline's jet fuel expense

We were surprised about one of the new CEOs who made the list – Richard Anderson, CEO of Delta Air Lines (DAL-NYSE), a notoriously lousy industry. It seems for Mr. Anderson, timing is everything. He assumed his position just as the airline was emerging from bankruptcy into an industry that had experienced significant consolidation enabling airlines to raise fares, institute fees and shrink capacity, especially on the highly competitive international routes where competition is fierce. We were also intrigued by the fact that Mr. Anderson was behind Delta's purchase of a Pennsylvania refinery that is projected to become profitable this year. At the time of the deal, there was much skepticism about the strategy of owning a refinery in order to help hedge the airline's jet fuel expense. Talk about timing the refinery cycle right! He also has embraced other "out-of-the-box" strategies that have contributed to his company's recent 75% earnings increase and first dividend payment in a decade. He is leading the pack in shaking up his airline's frequent flier program to reward those travelers who pay the most to fly over those who fly on the cheapest tickets. Maybe the energy industry needs some "out-of-the-box" thinkers, too.

Senate Democrats And The Public's View Of Climate Change

On March 10th, 28 Democratic senators spent all night on the floor of the Senate talking about the potential impacts from climate change

On March 10th, 28 Democratic senators spent all night on the floor of the Senate talking about the potential impacts from climate change – notice we didn't say global warming. The discussion was orchestrated by Rhode Island Senator Sheldon Whitehead who has made climate change his central focus, but more on that later. The group of senators involved only those senators who either are not up

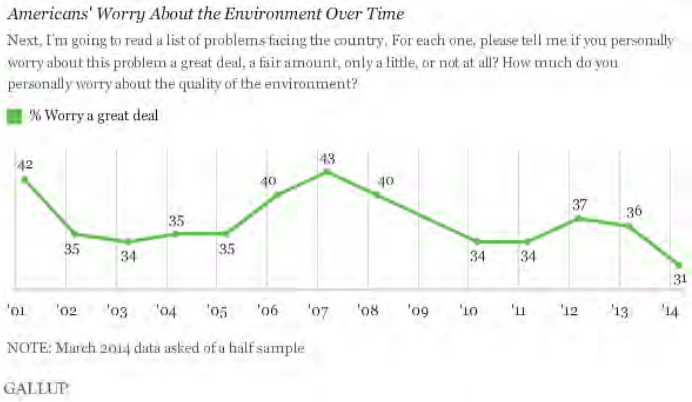
According to the survey, only 24% of Americans worry "a great deal" about climate, ranking it 14th out of 15 issues listed, and just ahead of concerns about race relations

for re-election in 2014 or are sufficiently secure in their re-election prospects that they didn't fear being associated with the topic. The amazing thing is that the day before this all-night talkathon, the national polling organization, Gallup, completed a three-day survey about the top concerns of the American public. This year's survey included an additional question about climate change to enable them to offer a report on the trend of climate change concern. According to the survey, only 24% of Americans worry "a great deal" about climate, ranking it 14th out of 15 issues listed, and just ahead of concerns about race relations. Some 51% of the Americans surveyed told Gallup they worry little or not at all about climate change. Does this prove that our Congress is truly dysfunctional?

Thirty-one percent of Americans worry about this issue a great deal, marking the lowest level of worry about the environment broadly since Gallup began measuring the issue in 2001

This was the first year Gallup added climate change as a separate issue. Immediately ahead of climate change was the 13th ranked issue – "The quality of the environment." Thirty-one percent of Americans worry about this issue a great deal, marking the lowest level of worry about the environment broadly since Gallup began measuring the issue in 2001. Americans were most worried about the environment in 2007 when 43% worried "a great deal," and which happened to coincide with the intense media focus on global warming (a.k.a. climate change) following the award of the Nobel Peace Prize to former U.S. Vice President Al Gore and the UN Intergovernmental Panel on Climate Change.

Exhibit 13. Environmental Concern Is At All-time Low



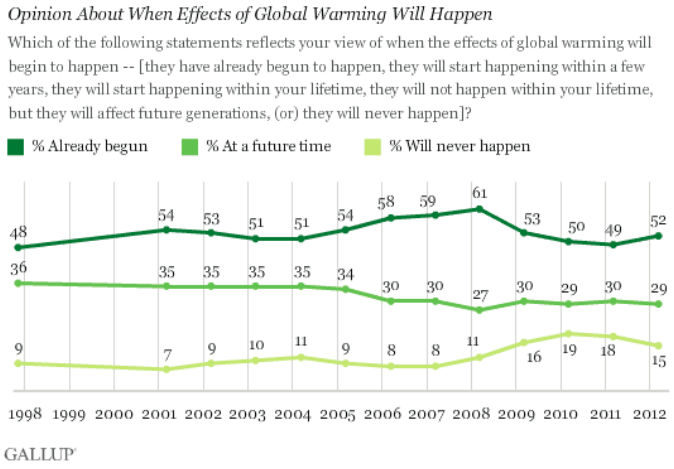
Source: Gallup

When asked about when the effects of global warming will be felt, there was a steady increase in concern during the mid-2000s until 2008

Reading through this year's Gallup report and the observations from prior surveys that questioned respondents about environmental concerns, we were struck by how views are shifting. When asked about when the effects of global warming will be felt, there was a steady increase in concern during the mid-2000s until 2008, but then there was a sharp decline. The decline bottomed out at about the same level of concern as back in 1998 when the issue was first surveyed by Gallup. Since then, there has been a slight increase. The data from the 2014 survey showed that "Already begun" was up to 54%, while "Will never happen" also rose by three percentage

points in 2012 to 18%, which is near the peak value ever reported. The category of "At a future time" declined to 27%, the lowest level ever posted.

Exhibit 14. Public Accepts Global Warming Presence

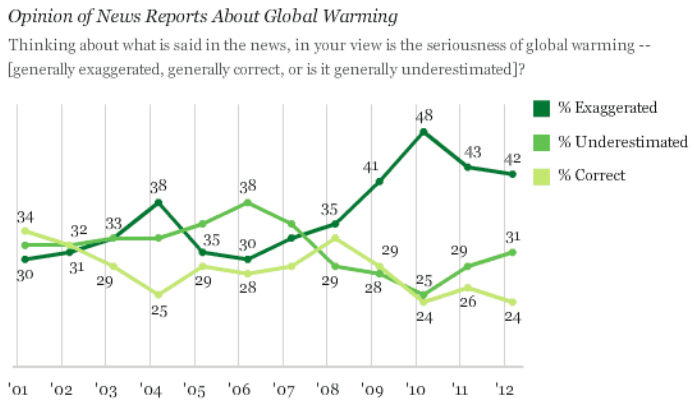


Source: Gallup

The increase in the percentage of those surveyed who believe the impact of global warming has already begun is probably a function of the attention from the media and climate change proponents

The increase in the percentage of those surveyed who believe the impact of global warming has already begun is probably a function of the attention from the media and climate change proponents who are focused on linking the incidents of storms such as Sandy that hit New Jersey, the California drought and an obsession with tornadoes with global warming. This focus on supposed climate-related weather incidents has been discredited by climate specialists, yet that doesn't dissuade politicians and climate-change religionists desperately seeking attention by hyping the potential horrors. This leads to another question Gallup has asked over the years about global warming – is the issue being exaggerated by the media?

Exhibit 15. Public Is Skeptical Of Media On Climate



Source: Gallup

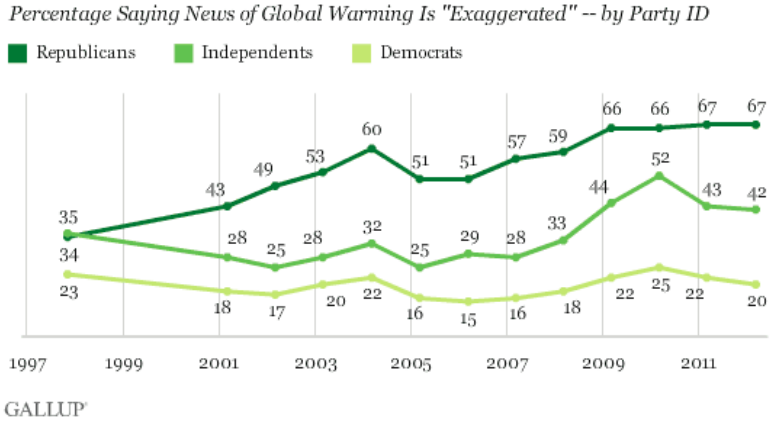
The 2014 Gallup poll shows that 42% of respondents believe the seriousness of global warming is being exaggerated

The 2014 Gallup poll shows that 42% of respondents believe the seriousness of global warming is being exaggerated, which is down from its peak of 48% in 2010, but still remains well above the average concern through virtually all of the decade of the 2000s, as shown in Exhibit 15 on the previous page. Those who believe that the media hype is correct fell to a new low of 23% while the percentage of people who feel the coverage is underestimated rose to 33% this year, but still remains five percentage points below its 2006 peak that occurred during the period when Al Gore's movie, An Inconvenient Truth, was airing.

It is interesting that since 1998, the Democratic view remained fairly steady at around 20%, while the view of Republicans and Independents increased

As might be expected, when the view of whether the media's coverage of global warming is exaggerated is measured based on political affiliation, nearly two-thirds of Republicans agree that it is. Their margin is more than 50% greater than the percentage of Independents who believe it is being exaggerated and more than three times the percentage of Democrats who hold that view. It is interesting that since 1998, the Democratic view remained fairly steady at around 20%, while the view of Republicans and Independents increased – the Republican view rising steadily over the entire time period while the view of Independents soared during the past five years. Since Independents are considered by pollsters as the key swing group in American society, changes in their sentiment are considered an important bell-weather of sentiment shifts in social movements. In this case, one has to wonder why Independents suddenly believe that global warming media coverage is exaggerated. Is it because climate data doesn't support the predictions of the climate model-driven outcomes? Or maybe it is because they understand the advice given by trial lawyers – when the facts don't support your case, argue the law; and when the law doesn't help you, argue the facts. In this case, the facts haven't supported the global warming case, and, unfortunately, there is no law about climate.

Exhibit 16. Politics Tied To Global Warming Coverage

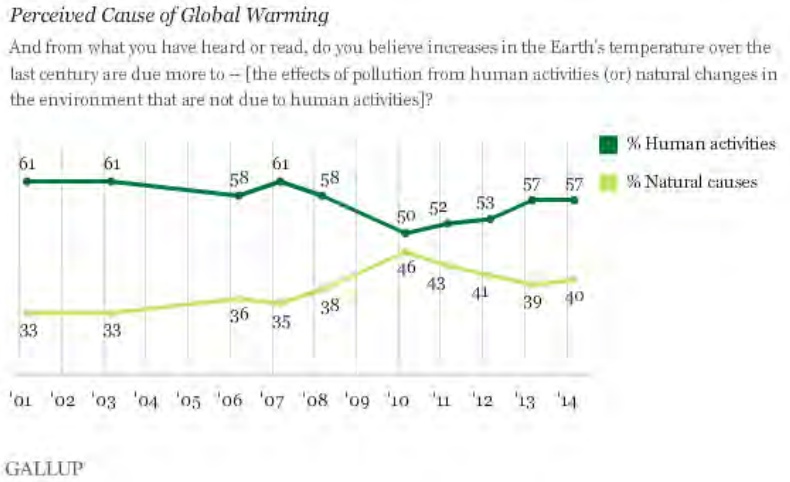


Source: Gallup

The recent increase in Americans believing humans are the problem with our climate likely explains why the environment is now favored over economic growth

Skepticism about climate change facts may help explain why the nearly two-to-one gap in favor of humans being the cause of global warming a decade ago drew close to a 50-50 split by 2010. Since then, the gap in the percent of Americans who believe humans are the cause of global warming compared to those who don't agree has widened to 17 points – 57% to 40%. The recent increase in Americans believing humans are the problem with our climate likely explains why the environment is now favored over economic growth after that relationship was reversed following the 2008 financial crisis and resulting recession.

Exhibit 17. The Public Believes Humans Cause Warming



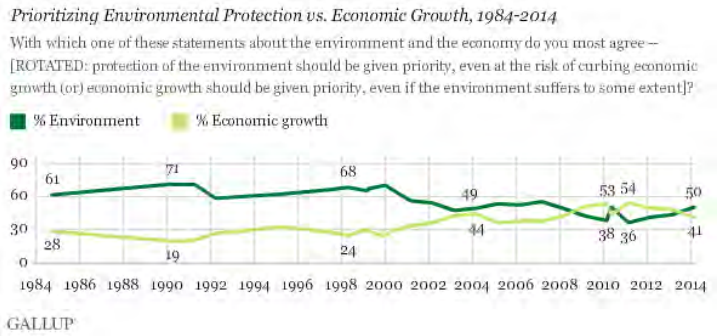
Source: Gallup

Do the results of the 2014 survey mean that Americans are feeling better about their economic future so they are willing to yield income gains for a better environment?

When looked at since 1984, Americans favored environmental protection over economic growth until the dot.com bust in 2000. Between 1984 and 2000, the American economy operated on the philosophy that we could "have our cake, and eat it too." It was only after the dot.com bust and its recession, which was followed by 9/11 and the war on terror that economic growth became more important to Americans than protecting the environment. Since 2004, the spread between favoring the economy versus the environment has been close and actually reversed a few times during the most recent years. Do the results of the 2014 survey mean that Americans are feeling better about their economic future so they are willing to yield income gains for a better environment? Or maybe they have become overly concerned about their environmental future, if one believes the view about media exaggeration of the harm from climate change. This debate brings us back to Senator Whitehouse.

Once a week, Senator Whitehouse gives a "Time to Wake Up" climate change speech on the floor of the Senate. He is now up to 60 such speeches. He was a schoolmate of billionaire, former hedge fund manager and avowed environmental activist Tom Steyer who has pledged to give $50 million to the Democratic Party and to

Exhibit 18. Views Of Environment Vs. Economy



Source: Gallup

Senator Whitehouse's environmentalism comes at the expense of the citizens in Rhode Island that he represents

raise an additional $50 million as long as the party and its candidates push for climate change legislation. The Democratic Senate talkathon was part of meeting that commitment. Yet Senator Whitehouse's environmentalism comes at the expense of the citizens in Rhode Island that he represents. The state's February unemployment rate is the highest in the nation at 9.0%. The rate improved by 0.2 percentage points from January and represented the best rate reported since October 2008.

Senator Whitehouse has done little to help the Rhode Island economy except load more costs on its citizens through environmental rules that push expensive green energy mandates, state and local pension bailouts, and high health insurance costs

The problem is that Rhode Island's economy remains mired in recession with little growth, while the state's tax burden is the highest and its business-friendly ranking is at the bottom of all states. Unfortunately, Senator Whitehouse has done little to help the Rhode Island economy except load more costs on its citizens through environmental rules that push expensive green energy mandates, state and local pension bailouts, and high health insurance costs. The latest spectacle is the results, through March 15th, of signups for the Affordable Care Act. HealthSouth RI, the state's Obamacare web site, announced it has signed up 68,292 citizens, or 6.5% of the state's population of slightly over 1 million residents. Of those signups, 48,602 went into Medicaid – a 1960s federal government paid medical insurance program.

That would mean an annual bill for users of between $1,000 and $1,200 each

Some 19,690 Rhode Islanders signed up for private health insurance plans through the web site, but 17% or 3,345, have not paid their first monthly premium, meaning they are not insured. But potentially the biggest scandal is the cost of the web site and its annual operating budget. The web site carries an annual price tag of $24 million. The problem is that the state doesn't have the money. In discussing where to get it, the idea of billing the users of the web site has been put forth. That would mean an annual bill for users of between $1,000 and $1,200 each. Talk about making affordable health care quickly unaffordable! Maybe the state will decide to tax every worker in Rhode Island, as that would only cost them a little over $50 a year. For low-income workers, the vast majority of the new jobs being created in the state, the cost would be a huge burden.

Is it any wonder why young people are leaving the state in droves

So while Senator Whitehouse lectures his fellow Senators about the evils of global warming and climate change, his constituents struggle with a weak economy, high living costs, high taxes, and potentially even higher expenses in the future. Is it any wonder why young people are leaving the state in droves and the first step for a retiring state or local employee is to go to Florida and establish residence so they no longer have to pay the burdensome Rhode Island income tax? Maybe if Senator Whitehouse spent more time on growing the economy and less time on burdening it with environmental rules, regulations and taxes, his constituents would be faring better.

Contact PPHB:
1900 St. James Place, Suite 125
Houston, Texas 77056
Main Tel: (713) 621-8100
Main Fax: (713) 621-8166
www.pphb.com

PPHB is an independent investment banking firm providing financial advisory services, including merger and acquisition and capital raising assistance, exclusively to clients in the energy service industry.