IER INSTITUTE FOR ENERGY RESEARCH

COMMENT ON THE DEPARTMENT OF ENERGY'S QUADRENNIAL ENERGY REVIEW

FR DOC. 2014-20114

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Introduction

The initial focus for the Quadrennial Energy Review is America's infrastructure for transporting, transmitting, storing and delivering energy. Any focus on our nation's infrastructure for transporting, storing, and delivering energy should address the ways in which the federal government is currently standing in the way. As the Department of Energy's notice in the Federal Register soliciting comments on the QER rightly points out:

> "...Non-Federal actors are crucial contributors to energy policies. Because most energy and related infrastructure is owned by private entities, investment by and engagement of the private sector is necessary to develop and implement effective policies. State and local policies; the views of nongovernmental, environmental, faith-based, labor, and other social organizations; and contributions from the academic and non-profit sectors are also critical to the development and implementation of effective energy policies."[2]

Before federal agencies take on new responsibilities, the first task should be to streamline and reduce current responsibilities. Far too often the problem with transportation infrastructure is the federal government.

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[1] The Institute for Energy Research (IER) is a not-for-profit organization that conducts intensive research and analysis on the functions, operations, and government regulation of global energy markets. IER maintains that freely functioning energy markets provide the most efficient and effective solutions to today's global energy and environmental challenges and, as such, are critical to the well being of individuals and society.

[2] Energy Department, Quadrennial Energy Review: Notice of Deadline for Public Comments, Federal Register, August 25, 2014, https://www.federalregister.gov/articles/2014/08/25/2014-20114/quadrennial-energy-review-notice-of-deadline-for-public-comments

Before the QER task force develops a new "to do" list for federal agencies, we urge it to first take full account of the ways federal agencies currently hamstring the American people and businesses who produce, transport, and deliver the energy that powers our lives. The QER task force is well positioned to take a fresh look at the impact of federal agencies on the stated goals expressed in the QER memo and to suggest smart regulatory changes that can provide immediate progress on those goals.[3]

As a preliminary matter, the President's focus on the transport, storage, and delivery of energy seems misguided given the enormous untapped potential for energy *production.*[4] Improving the infrastructure necessary to transport, store, and deliver energy is critical, but those improvements mean nothing without production.

Here are seven ways in which federal agencies could immediately improve America's energy outlook:

1. Approve the Keystone XL pipeline
2. Allow more oil and natural gas production on federal lands
3. Leave hydraulic fracturing regulations to state and local governments
4. Avoid picking favorites in energy markets
5. Approve new natural gas and oil pipelines
6. Conduct a comprehensive assessment of grid reliability
7. Expedite the regulatory morass required for transporting, transmitting, storing, and delivering energy

If the federal government can embrace the energy renaissance that is occurring in the state, local, and private spheres, the U.S. could welcome the dawn of a bright new energy future.

1. Approve the Keystone XL Pipeline

The federal government has no credibility to discuss improving America's "infrastructure for transporting, transmitting, storing and delivering energy" while it continues to stall and delay the Keystone XL pipeline approval.

TransCanada's application to build the Keystone XL pipeline has languished in federal hands for over six years, despite the fact that the pipeline would create jobs for Americans, provide an

[3]The White House, Presidential Memorandum -- Establishing a Quadrennial Energy Review, Office of the Press Secretary, January 9, 2014, http://www.whitehouse.gov/the-press-office/2014/01/09/presidential-memorandum-establishing-quadrennial-energy-review.

[4] For a comprehensive look at the massive energy resources of the U.S., please see IER's North American Energy Inventory: http://www.energyforamerica.org/wp-content/uploads/2012/06/Energy-InventoryFINAL.pdf

engine of economic growth, and is an environmentally-preferred alternative to other methods of transporting the oil. The Department of State's review of the pipeline project earlier this year noted that construction would create roughly 42,100 jobs, contribute $3.4 billion to U.S. GDP, and increase property tax revenue for many counties. The department explained,

> "During construction, proposed Project spending would support approximately **42,100 jobs** (direct, indirect, and induced), and approximately **$2 billion in earnings** throughout the United States. Of these jobs, approximately **3,900 would be direct construction jobs** in the proposed Project area in Montana, South Dakota, Nebraska, and Kansas (3,900 over 1 year of construction, or 1,950 per year if construction took 2 years). Construction of the proposed Project would contribute approximately **$3.4 billion** (or 0.02 percent) **to the U.S. gross domestic product (GDP)**. The proposed Project would generate approximately 50 jobs during operations. Property tax revenue during operations would be substantial for many counties, with an increase of **10 percent or more** in 17 of the 27 counties with proposed Project facilities."[5] [emphasis added]

The State Department's report also concluded that the pipeline would be unlikely to have significant climate change-related impacts. It noted,

> "Assuming construction of the proposed Project were to occur in the next few years, climate conditions during the construction period would not differ substantially from current conditions. However, during the subsequent operational time period...climate changes[6] are anticipated to occur **regardless of any potential effects from the proposed Project**."[7] [emphasis added]

IER senior economist Robert Murphy pointed out in his analysis of the State Department report that critics of the pipeline ignore marginal analysis.[8] That is, they cannot simply say, "Moving oil

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[5] U.S. Department of State, Final Supplemental Environmental Impact Statement for the Keystone XL Project, Executive Summary, Bureau of Oceans and International Environmental and Scientific Affairs, January 2014, http://keystonepipeline-xl.state.gov/documents/organization/221135.pdf, page ES-19.

[6] The changes listed are: Warmer winter temperatures; A shorter cool season; A longer duration of frost-free periods; More freeze-thaw cycles per year (which could lead to an increased number of episodes of soil contraction and expansion); Warmer summer temperatures; Increased number of hot days and consecutive hot days; and Longer summers (which could lead to impacts
associated with heat stress and wildfire risks).

[7] U.S. Department of State, page ES-17.

[8] Robert Murphy, An Economic Analysis of Keystone XL, Institute for Energy Research, February 7, 2014, http://instituteforenergyresearch.org/analysis/an-economic-analysis-of-keystone-xl/.

sands from Canada to Texas will cause climate change." In order to make the case for blocking Keystone, the critic must demonstrate what would happen in the alternative scenario and explain why that outcome would be preferable.

In this case, the alternative scenario is unlikely to be one in which no pipeline is built. A Canadian pipeline is likely, regardless of whether it runs through the U.S. As the Wall Street Journal pointed out recently, Canadians are investing in a project called "Energy East"--a pipeline that would transport oil sands in Alberta and Saskatchewan to refineries in St. Johns, New Brunswick. From there, Canada would be able to ship oil east to Europe and has already lined up customers in India.[9]

If a pipeline is inevitable (and thus, potential emissions from a pipeline are also inevitable), there is little good reason why it shouldn't run through the U.S. Approving Keystone XL in the U.S. would have clear economic benefits, minimal costs, and our Nation would forego those benefits by allowing Canada to build the pipeline in their own country instead.

2. Allow More Oil and Natural Gas Production on Federal Lands

The recent oil and natural gas boom in the United States has been driven by production on state and private lands, as opposed to on federal lands. A report by the Congressional Research Service points out that, since 2009, oil production on federal lands is down by 6 percent, and natural gas production on federal lands is down 28 percent.[10]

Compare these production levels to non-federal lands, where, since 2009, overall oil production is up by 61 percent, and natural gas production is up by 33 percent.[11] As figures 1 and 2 below from the CRS report demonstrate, the spike in U.S. oil and natural gas production has mostly been driven by exploration on state and private lands:[12]

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[9] Home-Team Advantage, Wall Street Journal, October 9, 2014, http://online.wsj.com/articles/home-team-advantage-1412900487.

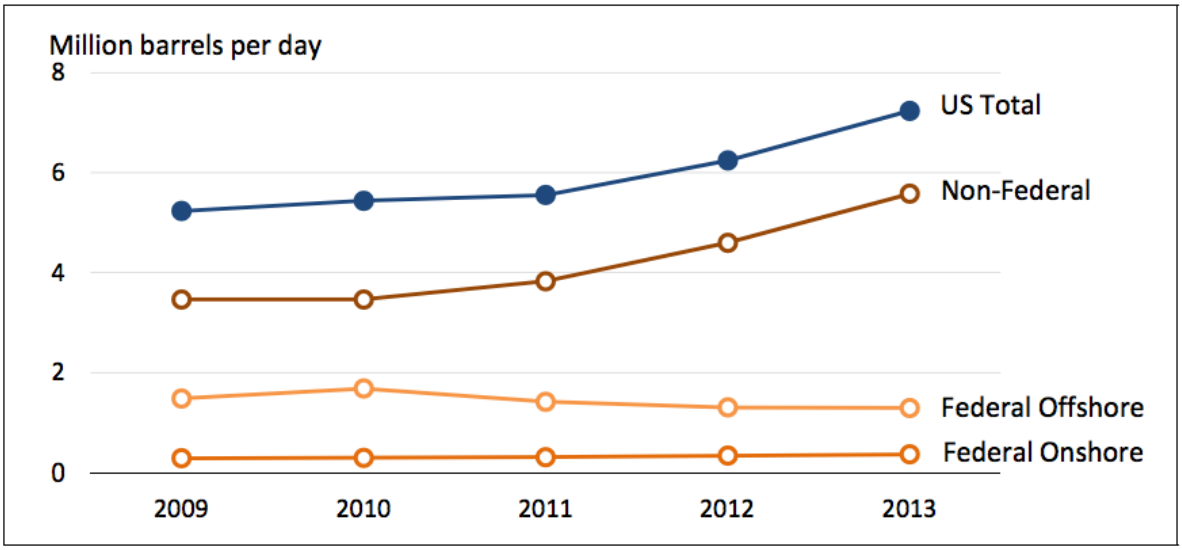
[10] Marc Humphries, U.S. Crude Oil and Natural Gas Production in Federal and Non-Federal Areas, Congressional Research Service, April 10, 2014, http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/20140410CRS-US-crude-oil-natural-gas-production-federal-non-federal-areas.pdf.

[11] Institute for Energy Research, Oil and Gas Production on Federal Lands Still a Disappointment, April 24, 2014, http://instituteforenergyresearch.org/analysis/oil-and-gas-production-on-federal-lands-still-a-disappointment/.

[12] Humphries, see note 9.

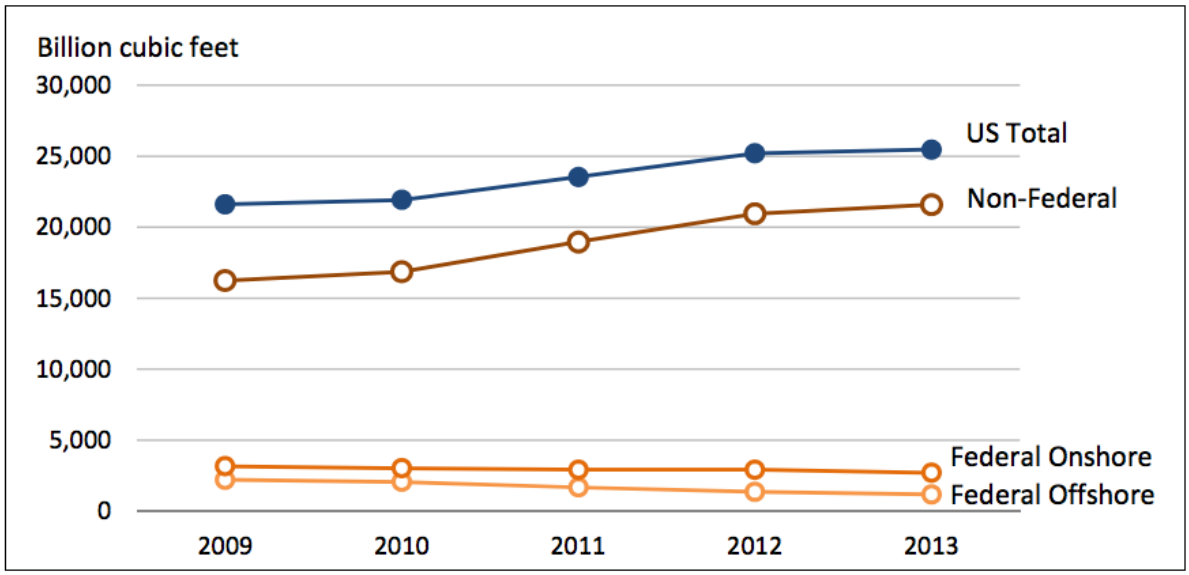
Figure 1. U.S. Crude Oil Production: Federal and Non-Federal Areas, FY2009-2013

Million barrels per day (Mb/d)



Source: Federal data obtained from ONRR Statistics, http://www.onrr.gov (using sales year data). Figure created by CRS.

Figure 2. U.S. Natural Gas Production: Federal and Non-Federal Areas FY2009-FY2013



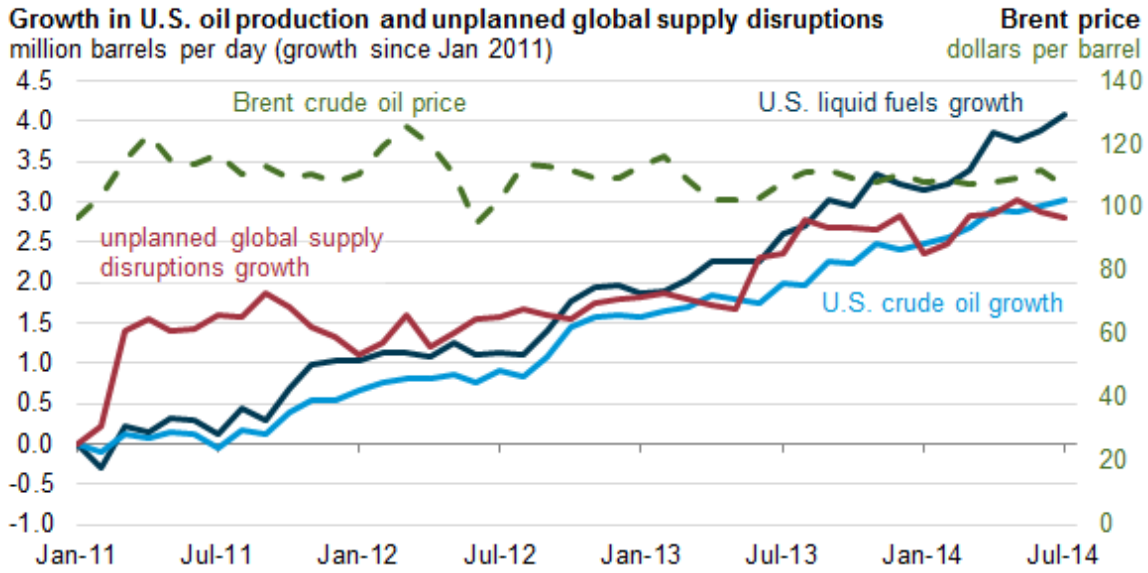
Source: Federal data obtained from ONRR Statistics, http://www.onrr.gov (using sales year data). Figure created by CRS.

The implications of increased U.S. energy production are enormous. The chief of the Energy Information Administration, Adam Sieminski, said in an interview with Reuters that, if not for rising oil production in North Dakota and Texas, crude oil prices would hit $150 per barrel due to

supply disruptions in the Middle East and North Africa.[13] The EIA also noted in August that record-setting energy production growth in the U.S. has more than offset unplanned global supply disruptions.[14] In August, the Energy Information Administration noted that the price of Brent oil had only fluctuated between $107 per barrel and $112 per barrel, despite significant turmoil in oil-producing countries such as Iraq, Iran, Nigeria, and Libya. Compare this to the previous yearly period, in which prices shifted by $21 per barrel:

AUGUST 27, 2014

U.S. liquid fuels production growth more than offsets unplanned supply disruptions



Source: U.S. Energy Information Administration, *Short-Term Energy Outlook* August 2014 and IntercontinentalExchange
Note: The difference between U.S. liquid fuels and crude oil production represents production of hydrocarbon gas liquids, biofuels, and refinery processing gain. Non-OPEC supply disruptions include both crude oil and liquid fuels, while OPEC disruptions include only crude oil. Growth in oil production and supply disruptions represents changes since January 2011.

[13] Ernest Scheyder, Oil prices would hit $150/barrel without U.S. shale, EIA says, Reuters Middle East, September 24, 2014, https://en-maktoob.news.yahoo.com/oil-prices-hit-150-barrel-without-u-shale-175838536--business.html.

[14] Energy Information Administration, U.S. liquid fuels production growth more than offsets unplanned supply disruptions, Today in Energy, August 27, 2014, http://www.eia.gov/todayinenergy/detail.cfm?id=17731.

Two years ago, President Obama said "We can't just drill our way to lower gas prices."[15] But that is precisely what we are doing, despite the President's backwards policies and in the midst of supply disruptions abroad. The federal government should replicate the energy progress being made in states like North Dakota and Texas by allowing the development of more energy resources on federal lands. Doing so may continue to cushion price spikes that may be brought about by otherwise volatile global markets.

3. Leave Hydraulic Fracturing Regulations to State and Local Governments

The technological advancements in hydraulic fracturing have been the key driver of the American oil and natural gas revolution. States have successfully balanced the increased energy security and economic prosperity.[16]

There is not a single confirmed case of groundwater contamination occurring from hydraulic fracturing despite the fact that the practice has been used in more than one million wells and over the span of more than 60 years. Furthermore, the states already regulate hydraulic fracturing. The federal government is always free to provide information and scientific expertise, but given the record of the states at protecting groundwater, there is no reason for a federal role until the goal is to limit natural gas and oil production.

The Groundwater Protection Council (GWPC), a national association of state agencies, recently released an updated version of a 2009 study that tracks state regulation of hydraulic fracturing. It found that states have "...been diligent in addressing the technological, legal, and political changes that have occurred in oil and gas exploration and production."[17] The comprehensive study tracked regulations and programs in 27 states and included input from government officials, environmentalists, and industry stakeholders. Furthermore, the study concluded that

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[15] Institute for Energy Research, ICYMI: Yes We Can Drill Ourselves to Secure and Affordable Energy, October 7, 2014, http://instituteforenergyresearch.org/analysis/icymi-can-drill-secure-affordable-energy/

[16] Fracfocus, A Historic Perspective, fracfocus.org/hydraulic-fracturing-how-it-works/history-hydraulic-fracturing

[17] Ground Water Protection Council, State Oil and Gas Regulations Designed to Protect Water Resources, October 2014, http://www.gwpc.org/sites/default/files/files/Oil%20and%20Gas%20Regulation%20Report%20Hyperlinked%20Version%20Final-rfs.pdf

"...on most issues the greatest experience, knowledge, and information necessary effectively rests with state regulatory agencies."[18]

Specifically the report found that states are increasingly regulating all elements of hydraulic fracturing. These regulations include requirements for industry to obtain more permits, to provide the state and the public with more information about the chemicals being used in the fracturing fluids, to install additional cement barriers in wells and undergo more testing to ensure chemicals do not migrate into ground-water, to improve well-plugging after the a well is drilled, to treat and reuse produced water. States have also proposed rulemakings tightening standards on spill response.

University researchers from Ohio State, Stanford, and other universities recently concluded that hydraulic fracturing is safe in the *Proceedings of the National Academy of Sciences.*[19] Specifically, they found no causal link between the process of hydraulic fracturing and groundwater contamination. Instead, limited incidents of contamination occurred due to "failures of annulus cement, faulty production casings, and one underground gas well failure."[20] In response to the results of the study, the lead researcher commented, "This is relatively good news because it means that most of the issues we have identified can potentially be avoided by future improvements in well integrity."[21] States are currently re-evaluating and updating their rules to address this concern and improve safety.[22]

This is not the only study on the environmental impacts of hydraulic fracturing. The Bureau of Land Management (BLM) also recently conducted a study on hydraulic fracturing impacts in California and concluded that "the direct environmental impacts...appear to be relatively limited."[23] Like the study published by the National Academy of Sciences, this study also did not

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[18] Ibid.

[19] Ohio State University, Study: Bad Wells, Not Fracking, Contaminate Groundwater, Laboratory Equipment, 9/15/14, http://www.laboratoryequipment.com/news/2014/09/study-bad-wells-not-fracking-contaminate-groundwater

[20] Ibid.

[21] Ibid.

[22] Ground Water Protection Council, State Oil and Gas Regulations Designed to Protect Water Resources, October 2014, http://www.gwpc.org/sites/default/files/files/Oil%20and%20Gas%20Regulation%20Report%20Hyperlinked%20Version%20Final-rfs.pdf

[23] California Council on Science and Technology, Well Stimulation in California, 2014,http://ccst.us/projects/fracking_public/BLM.php/.

find any causal link between hydraulic fracturing and groundwater contamination. As a result, BLM will resume leasing activity in California for the first time since December 2012.[24]

Finally, the EPA conducted a comprehensive four year study that was completed in 2004 which found no link between hydraulic fracturing in wells where methane is extracted from coal seams and groundwater contamination. Specifically, EPA stated, "...although thousands of wells are fractured annually, EPA did not find confirmed evidence that drinking water wells have been contaminated by hydraulic fracturing fluid into CMB injection wells."[25]

States have been successful in their regulation of hydraulic fracturing because they have the necessary knowledge and the flexibility to adapt to the rapidly expanding use of process. The latest science examining hydraulic fracturing has repeatedly concluded that the practice is safe and that any water contamination is linked to poor well construction. Given the states' track record, increasing federal regulation of hydraulic fracturing is not only unnecessary, but appears to be an attempt to increase the regulatory red tape to increase the costs of domestic energy production.

4. Avoid Picking Favorites in Energy Markets

While identifying problems is important, agencies should not try to pick winners and losers. For example, the DOE's loan guarantee program has a worrisome track record of subsidizing companies and technologies that have proven uncompetitive. The $535 million taxpayer loss on the DOE's Solyndra gamble stands as the most prominent failure in the program[26], but it is emblematic of the larger problem of having a federal agency try to subsidize energy sources.[27]

Since this issue of the QER is meant to address concerns with energy storage, let us consider the DOE subsidies for A123 Systems, a company producing batteries for electric vehicles and

[24] Scott Streator, BLM to resume Calif. leasing in wake of fracking science report, E&E News, 8/29,14, http://www.eenews.net/greenwire/2014/08/29/stories/1060005056 .

[25] Environmental Protection Agency, Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Resoviors Study, 2004,http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_coalbedmethanestudy.cfm.

[26] Institute for Energy Research, From Bad to Worse: U.S. Taxpayers Keep Losing Money on Solyndra, October 25, 2012, http://instituteforenergyresearch.org/analysis/u-s-taxpayers-keep-losing-money-on-solyndra/.

[27] Institute for Energy Research, Loans, Federal Energy Spending Tracker, http://data.instituteforenergyresearch.org/loans/#139336.

grid-scale electricity storage. A123 provides a case in point for why the federal government should avoid subsidizing specific companies or technologies.

After receiving $249 million in federal grant money to produce batteries, A123 Systems filed for bankruptcy in 2012. As IER has pointed out before,

> "A123 Systems was considered to be a promising grant recipient by the Department of Energy (DOE) under its $2 billion stimulus program for electric car development. The company received about $132 million of the grant before filing for bankruptcy. Besides federal money, A123 Systems received a $9 million grant from the state of Michigan, as well as $100 million in tax credits and $41 million in tax breaks and subsidies."[28]

A123 is not the only battery storage company to receive federal grant money and then fail. Ener1 provides yet another example. The company produces a variety of battery storage devices and filed for bankruptcy in early 2012, after receiving $118.5 million from the DOE.[29]

Unfortunately, A123 and Ener1 are not alone--they are among the slew of other energy technology businesses to obtain federal funding and then fail. This chart from the Senate Republican Policy Committee outlines the status of 19 companies which received grants from the DOE--12 are bankrupt:[30]

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[28] Institute for Energy Research, Another Obama-Funded Company Files for Bankruptcy: A123 Systems, October 19, 2012, http://instituteforenergyresearch.org/analysis/another-obama-funded-company-files-for-bankruptcy-a123-systems/.

[29] Ibid.

[30] Senate Republican Policy Committee, Obama's Green Energy Bets Keep Coming Up Short, October 17, 2012, http://www.rpc.senate.gov/policy-papers/obamas-green-energy-bets-keep-coming-up-short_update.

COMPANY	Rating at Time of Investment	Taxpayer Exposure	Status May 2012	Status Today
A123 Systems		$249 million	Distress	Bankrupt
Abound Solar	Junk (B)	$400 million	Distress	Bankrupt
Amonix		$21.6 million		Bankrupt
Babcock & Brown		$178 million		Bankrupt
Beacon Power	Junk (CCC+)	$43 million	Bankrupt	Bankrupt
BrightSource Energy		$1.6 billion		Distress
Ecotality, Inc.		$126 million	Distress	Distress
Ener1		$118.5 million	Bankrupt	Bankrupt
Evergreen Solar		$5.3 million	Bankrupt	Bankrupt
First Solar		$3.1 billion	Distress	Distress
Fisker Automotive		$529 million		Distress
Mountain Plaza Inc.		$424,000		Bankrupt
Nevada Geothermal	Speculative (BB+)	$98.5 million	Distress	Failing
Raser Technologies		$33 million	Bankrupt	Bankrupt
Solar Trust for America		$2.1 billion*	Bankrupt	Bankrupt
Solyndra, Inc.	Junk (BB-)	$535 million	Bankrupt	Bankrupt
SpectraWatt		$500,000	Bankrupt	Bankrupt
SunPower		$1.2 billion	Distress	Distress
U.S. Geothermal	Junk (BB)	$97 million	Distress	Distress

*Loan never closed because the company declared bankruptcy.

Note: Does not include the solar company, Satcon Technology Corp., who filed for bankruptcy on October 17.

Too often, the DOE loan guarantee program subsidizes the deployment of known technologies, as in the case of Solyndra, which wastes precious tax dollars on inferior technology. Instead, it should either return those dollars to the American people.

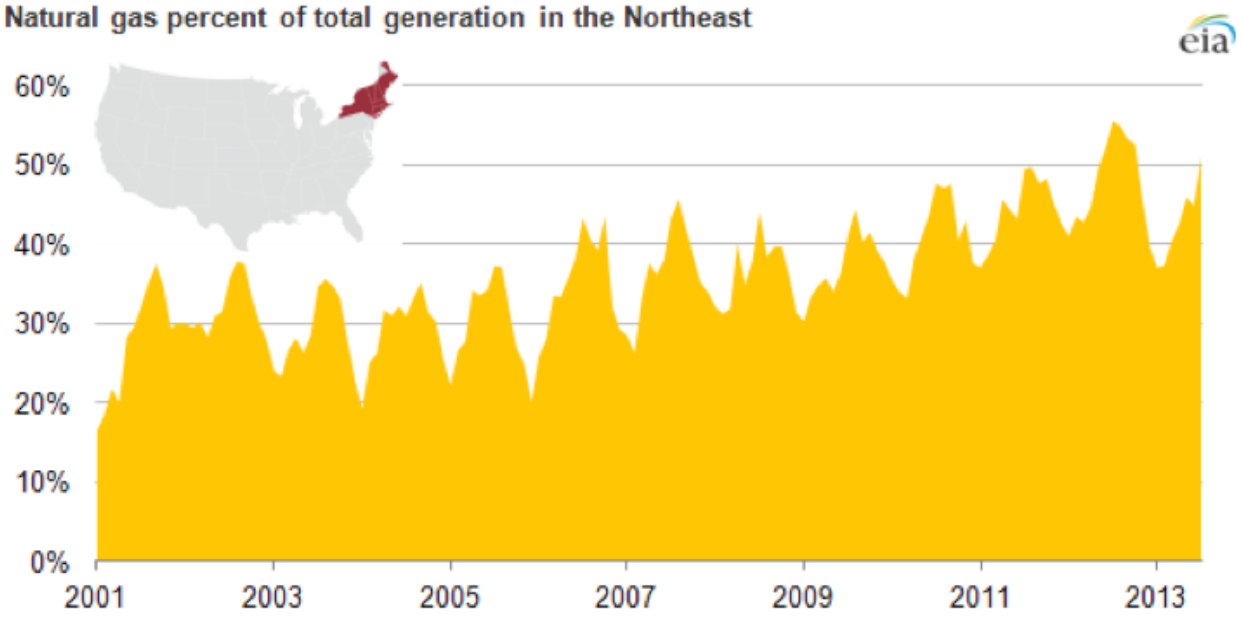
5. Approve new natural gas and oil pipelines

If the United States is to take full advantage of technological advances in natural gas and oil extraction and production, it must allow that the necessary infrastructure can be built to transport natural gas and oil. A reliable pipeline system is essential to fulfill the energy needs of various parts of the U.S., and it is required to meet the peak demand of its shippers.[31] As natural gas and oil production and consumption increase, the transmission system must also expand.

[31] EIA, "Network Configuration and System Design," About U.S. Natural Gas Pipelines, http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/transsys_design.html, accessed October 9, 2014.

One obvious example, as noted above, is the Keystone XL pipeline. The federal government has no credibility on energy infrastructure as long as it stalls the Keystone XL pipeline.

A natural gas-related example of needed pipeline capacity is the increase in natural gas consumption in the Northeastern U.S. The Northeast's electric grid, which consists of the Independent System Operator of New England (ISO-NE) and the New York Independent System Operator (NYISO), has shifted away from petroleum and coal in electricity generation and is relying more on natural gas in recent years.[32] The following chart from the Energy Information Administration demonstrates this trend.



The trend in the northeast will only continue, as more power plants are set to retire, including Salem Harbor (750 MW), Brayton Point (1535 MW), Norwalk Harbor (350-MW), and the Vermont Yankee Nuclear Station (600 MW).[33] These shortages will have a substantial impact: a Forward Capacity Market auction held by ISO-NE in February resulted in a 155 MW deficit for the 2017–2018 capacity commitment period.[34] Furthermore, consumers have already been affected. Prices spiked in the winter of 2012-13 because demand exceeded the amount of natural gas that could be transported to the regional markets.[35]

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[32] EIA, "Northeast grows increasingly reliant on natural gas for power generation," November 12, 2013, http://www.eia.gov/todayinenergy/detail.cfm?id=13751, accessed October 9, 2014.

[33] ISO-NE, "Auction Ends with Slight Shortfall in Power System Resources Needed for 2017–2018 in New England," Press Release, February 5, 2014, p. 2, http://www.iso-ne.com/nwsiss/pr/2014/fca8_initial_results_02052014.pdf.

[34] ISO-NE, "Auction Ends with Slight Shortfall," p.1.

[35] EIA, "Northeast grows increasingly reliant on natural gas."

Price spikes occurred again in New England during December 2013. Constraints on the Algonquin Gas Transmission (AGT) pipeline system contributed to increased costs, particularly in Boston. “The average bidweek price of natural gas in New England for December settled at $14.52 per million British thermal units,” which was more than double the average of the thirteen previous months (closer to 6.5 MMBtu).[36] Even during the summer, the capacity of the AGT has been stretched. While the load factor during 2011 was around 62 percent, it soared in 2012 to around 83 percent. For comparison, the average load factor from 2005-2010 was only 32 percent.[37]

As a result, the EIA reasons, “New England pipeline constraints limit the delivery of more natural gas to consumers in the market, making natural gas and power prices more volatile during periods of high demand—mostly in the winter.”[38] Without increases in the limited pipeline infrastructure in the region, fuel shortages will likely become even more severe in the future. As a facet of its QER, the DOE should look to expand the current natural gas pipeline infrastructure in the U.S., specifically in the Northeast.

As of June 2014, there were 29 pending natural gas pipeline projects in the U.S. for FERC to review.[39] Of those projects, seven would be at least partially located in New York or New England. The Algonquin Incremental Market Project alone could increase the amount of natural gas flowing to the region by 342 MMcf/d.[40] Admittedly, this impact will not be felt immediately, but the approval of more pipeline capacity will be even more useful in the future as New England becomes progressively more reliant on natural gas.

Despite the large number of natural gas pipeline projects pending approval, FERC has done a commendable job of authorizing the construction of additional pipeline infrastructure. Since 2009, FERC has granted approval for 81 major pipeline projects in the US.[41] If the transmission

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[36] EIA, “December natural gas prices spike in Boston,” December 6, 2013, http://www.eia.gov/todayinenergy/detail.cfm?id=14071.

[37] EIA, "Key New England natural gas pipeline reflects seasonal flow changes," October 3, 2012, http://www.eia.gov/todayinenergy/detail.cfm?id=8230#tabs_NewEngland-1.

[38] EIA, “December natural gas prices spike in Boston.”

[39] FERC, "Major Pipeline Projects Pending (Onshore)," June 15, 2014, http://www.ferc.gov/industries/gas/indus-act/pipelines/pending-projects.asp.

[40] FERC, "Major Pipeline Projects Pending (Onshore)."

[41] FERC, “Approved Major Pipeline Projects (2009-Present),” updated June 17, 2014, http://www.ferc.gov/industries/gas/indus-act/pipelines/approved-projects.asp.

system deficiencies in the Northeast are to be resolved, FERC should focus more attention on accelerating approval for projects in the region.

6. Conduct a comprehensive assessment of grid reliability

The Commissioners at the Federal Energy Regulatory Commission (FERC) agree that grid reliability is "job one" for FERC. Chairman Cheryl LaFleur and Chairman-in-waiting Norman Bay reiterated that point several times in their recent confirmation hearings before the Senate.[42]

Congress cemented FERC's role in grid reliability by passing the Energy Policy Act of 2005, which granted FERC the authority to enforce mandatory reliability standards in order to avoid another major blackout like the one that devastated the Northeastern U.S. and parts of Canada in August 2003.[43]

Given FERC's central role in ensuring grid reliability, it is surprising how little input the EPA has sought from FERC, as it implements plans to close more than 72 gigawatts of reliable generation capacity. That is a staggering amount of capacity—it's enough to power every home in Washington, Oregon, California, Idaho, Nevada, Arizona, Utah, Montana, Wyoming, Colorado, New Mexico, North and South Dakota, Nebraska, Kansas, Oklahoma, Minnesota, Iowa, Missouri, Arkansas, and Louisiana.[44]

Unfortunately, formal collaboration between the EPA and FERC regarding the implementation of new environmental regulations has been negligible or non-existent. Since August 2014, LaFleur has maintained that the EPA and FERC have worked together on the EPA's Mercury and Air Toxics Standards (MATS) rule, but she only mentioned that EPA members showed up to FERC's Forum on Reliability and the Environment[45]. She has also stated that FERC staff have participated in phone calls with the EPA regarding the MATS rule, but it is unclear what these conferences have accomplished. Moreover, when asked about EPA/FERC collaboration on the

[42] Senate Hearing 113-288, LaFleur and Bay Nominations, May 20, 2014, http://www.gpo.gov/fdsys/pkg/CHRG-113shrg88084/html/CHRG-113shrg88084.htm

[43] FERC, FERC & EPAct 2005: Meeting Milestones, http://www.ferc.gov/legal/fed-sta/ferc-and-epact-2005.pdf

[44] Institute for Energy Research, Power Plant Closures.

[45] Cheryl LaFleur, Written Testimony Before the Committee on Energy and Commerce Subcommittee on Energy and Power, U.S. House of Representatives, July 29, 2014, http://www.ferc.gov/CalendarFiles/20140729091732-LaFleur-07-29-2014.pdf.

Clean Power Plan proposal, FERC Commissioner Tony Clark said the two organizations have not met at all[46].

To ensure grid reliability, FERC and the EPA must work together to assess the impact of the EPA's new regulations. Specifically, the EPA should ask FERC to perform a formal, comprehensive assessment of the combined effects on the U.S. power grid of the EPA's power plant rules (most notably its proposed rule limiting CO2 emissions from existing coal plants, also known as the Clean Power Plan).[47] The assessment should answer key questions such as:

- Will interconnection-wide grid reliability be affected by the accelerated closure of upwards of 72 gigawatts of reliable generation?
- Is the EPA's compliance time frame reasonable?
- What safeguards are in place to ensure grid reliability in the event that FERC reliability rules conflict with EPA power plant rules?

FERC has the expertise necessary to carry out such an assessment. In fact, it has an entire office dedicated to grid reliability—the Office of Electric Reliability (OER)—that is responsible for coordinating with other federal agencies to "facilitate energy reliability and security."[48]

The trouble is, OER already performed an informal assessment, but the EPA and the FERC Chairman at the time did not like the results. According to the testimony of former FERC Chairman Jon Wellinghoff, FERC staff provided an "adequate back-of-the-envelope first assessment of the amount and location of potential generator retirements," adding that this "informal assessment cannot be relied upon to determine specific effects on system reliability."[49]

What was so wrong with the assessment? FERC staff found that 81 gigawatts of capacity were "likely" or "very likely" to retire—a number that was later rejected by Chairman Wellinghoff, much to the delight of EPA Administrator Lisa Jackson.[50] In fact, when Wellinghoff dismissed his

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[46] John Norris, Written Testimony Before the Committee on Energy and Commerce Subcommittee on Energy and Power, U.S. House of Representatives, July 29, 2014, https://www.ferc.gov/CalendarFiles/20140729091817-Norris-07-29-2014.pdf.

[47] EPA, Clean Power Plan Proposed Rule, June 2, 2014, http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule

[48] FERC, Office of Electric Reliability, http://www.ferc.gov/about/offices/oer.asp .

[49] Jon Wellinghoff, Testimony Before the House Subcommittee on Energy and Power, Committee on Energy and Commerce, September 14, 2011, http://www.ferc.gov/EventCalendar/Files/20110914092743-Wellinghoff-testimony.pdf

[50] Jon Wellinghoff, Letter to Lisa Murkowski, August 1, 2011, http://www.murkowski.senate.gov/public/_cache/files/0942ce17-3b12-4643-99ba-8fe2f5a7680a/ferc-chairman-response-8-1-11.pdf.

staff's assessment in a story in Politico, Jackson's staff asked her to thank him for his "very helpful comments."[51]

Because few things contribute more to the stability of energy transportation and delivery than a sound electricity grid, EPA should leave turf wars aside and ask FERC to conduct a formal, comprehensive assessment of the effect of EPA power plant rules on grid reliability. The current policy is no way to ensure the reliability of the electric power American families and businesses rely on every day. This issue is too important to be swept under the rug in the name of turf wars between agencies.

7. Expedite the regulatory morass required for transporting, transmitting, storing, and delivering energy

Any plan to improve the nation's infrastructure for transporting, transmitting, storing and delivering energy must negotiate a number of political chokepoints. Some of the most important chokepoints are the National Environmental Protection Act (NEPA), the Endangered Species Act (ESA), the Clean Water Act (CWA), and the Clean Air Act (CAA). Each of these acts imposes restrictions that apply to many developments.

These acts can delay a project for years. Sometimes the delays are valid, but with so many laws on the books that create political chokepoints, many of the delays are not.

The federal government needs to review these laws and expedite the approval of projects by streamlining the application of these laws.

The following is a partial list of laws that affect energy supply, distribution or use: [52]

Acquired Lands Mineral Leasing Act
Advisory Committee Act
Agriculture and Food Act of 1981
Alaska National Interest Lands Conservation Act
Alaska Native Claims Settlement Act ANCSA
American Indian Religious Freedom Act of 1978
American Recovery and Reinvestment Act
Americans with Disabilities Act

[51] Brian Wingfield, EPA, FERC Chair Coffees Questioned, Bloomberg, September 5, 2013, http://go.bloomberg.com/political-capital/2013-09-05/epa-ferc-chair-coffees-questioned/.

[52] *See* Randy T Simmons & Ryan M. Yonk, *Energy Regulation: Impacting traditional and green energy projects*, Sept. 2011, http://strata.org/wp-content/uploads/ipePublications/Energy-Regulation.pdf.

Animal Welfare Act
Antiquities Act of 1906
Archaeological and Historical Preservation Act
Archaeological Resource Protection Act
Architectural Barriers Act of 1968
Atomic Energy Act
Bald and Golden Eagle Protection Act
California Desert Conservation Area Plan 1980
Clean Air Act
Clean Water Act
Coastal Zone Management Act
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
Department of Transportation Act of 1969
Electric Consumer Protection Act of 1986
Emergency Planning and Community Right-to-Know EPCRA
Endangered Species Act
Energy Policy Act of 1992
Energy Policy Act of 2005
Energy Security and Independence Act
Environmental Conservation and Occupational Safety
Environmental Standards for the Management and Disposal of Spent Nuclear Fuel
High-Level and Transuranic Wastes
Equal Employment Opportunity Act of 1972
Farmland Protection Policy Act
Federal Advisory Committee Act
Federal Agriculture Improvement and Reform Act of 1996
Federal Energy Management Program
Federal Facility Compliance Act
Federal Insecticide, Fungicide, and Rodenticide Act
Federal Land Policy and Management Act (FLPMA)
Federal Lands Recreation Enhancement Act
Federal Leadership in Environmental, Energy, and Economic Performance
Federal Manager's Financial Integrity Act of 1982
Federal Onshore Oil and Gas Leasing Reform Act of 1987
Federal Power Act
Fish and Wildlife Coordination Act
Food and Drug Administration (FDA) Accidental Radioactive Contamination of
Human Food and Animal Feeds; Recommendations for State and Local Agencies
Food Security Act of 1985
Food, Agriculture, Conservation and Trade Act of 1990
Forest and Rangeland Renewable Resources Planning Act of 1974
Freedom of Information Act
General Mining Act of 1872
Geothermal Steam Act of 1970

Government Performance and Results Act of 1993
Hazardous Materials Transportation Act
Historic Sites, Buildings and Antiquities Act
Indian Sacred Sites, Executive Order 13007
Indian Tribal Energy Development Act
Land and Water Conservation Fund Act of 1965
Magnunson-Stevens Fishery Conservation and Management Act
Marine Mammal Protection Act
Marine Protection, Research and Sanctuaries Act
Migratory Bird Treaty Act
Mineral Leasing Act
Mining and Minerals Policy Act of 1970
Mining in the Parks Act
Multiple-Use Sustained-Yield Act
National American Graves Protection and Repatriation Act
National Cemeteries Act of 1973
National Environmental Policy Act of 1969
National Forest Management Act
National Historic Preservation Act
National Park Service Concessions Management Improvement Act of 1998
National Park Service Organic Act
National Park System General Authorities Act
National Park System Resource Protection Act
National Parks Air Tour Management Act of 200
National Parks Omnibus Management Act of 1998
National Trails System Act
National Wildlife Refuge System Improvement Act
Native American Graves Protection and Repatriation Acts
Negotiated Rulemaking Act
NEPA
Noise Control Act of 1972
Noxious Weeds Act
Occupational Safety and Health Act of 1970
Oil Pollution Act of 1990
Omnibus Consolidated Appropriations Act
Omnibus Public Land Management Act of 2009
Organic Administration Act
Petroleum Act
Pollution Prevention Act
Privacy Act of 1974
Public Rangelands Improvement Act of 1978
Public Utility Regulatory Policies Act of 1978
Quiet Communities Act of 1978
Recreation Enhancement Act

Rehabilitation Act of 1973
Renewable Resources Extension Act of 1978
Resource Conservation Act
Resource Conservation and Recovery Act
Rivers and Harbors Appropriation Act of 1899
Robert T. Stafford Disaster Relief and Emergency Assistance Act
Safe Drinking Water Act
Soil and Water Resources Conservation Act of 1977
Soil Conservation and Domestic Allotment Act
Solid Waste Disposal Act
Stevenson-Wydler Technology Innovation Act of 1980
Strengthening Federal Environmental, Energy, and Transportation Management
Superfund Amendments and Reauthorization Act
Surface Mining Control and Reclamation Act of 1977
Surface Resources Act of 1955
Taylor Grazing Act of 1934
Telecommunication Act of 1996
Tennessee Valley Authority Act
The Farm Security and Rural Investment Act of 2002
Toxic Substances Control Act
Water Mitigation Agreement
Wild and Scenic Rivers Act
Wild Free Roaming Horse and Burro Act of 1971
Wilderness Act

Conclusions

The federal government is right to identify the need for an American energy vision. That vision should embrace the benefits of energy production and stake out a role for government that *fosters* rather than *hinders* the production, transport, and delivery of reliable, affordable energy. In recent years the federal government has stood in the way of improving our energy infrastructure by stalling projects like the Keystone XL pipeline. The QER should recommend the approval of the Keystone XL pipeline as a sign of good will that the federal government now intends to work as a partner instead of being antagonistic toward energy production and transportation.

Our Nation has the potential to keep every American family's home warm, car moving, and lights on. We simply need to commit to harnessing rather than obstructing that potential.