United States Senate

COMMITTEE ON
ENERGY AND NATURAL RESOURCES

WASHINGTON, DC 20510–6150

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May 1, 2017

The Honorable Rick Perry
Secretary of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Mr. Secretary:

We are writing to express serious concern about your April 14, 2017, Memorandum requesting a Department of Energy "Study Examining Electricity Markets and Reliability". This Study appears to be a thinly-disguised attempt to promote less economic electric generation technologies, such as coal and nuclear, at the expense of cost-competitive wind and solar power.

The April 14 Memorandum argues that baseload electric generation technologies are being challenged and directs the Study to consider three issues:

1. Whether Federal policies and market changes require a reconsideration of the "original policy assumptions that shaped the creation" of wholesale electricity markets.
2. If wholesale energy and capacity markets sufficiently compensate generators for certain attributes, such as on-site fuel supply, that "strengthen grid resilience" and, if they do not offer sufficient compensation, how grid reliability and resilience will be impacted.
3. The extent to which existing regulations, mandates, tax policies, and subsidies "are responsible for forcing the premature retirement of baseload power plants".

The Study, as you have framed it, appears to be intended to blame wind and solar power for the financial difficulties facing coal and nuclear electric generators and to suggest that renewable energy resources threaten the reliability of the grid. Perhaps that is why Travis Fisher – a former official with the Koch Brothers-funded Institute for Energy Research who has written and spoken extensively against renewable energy technologies – was chosen to leady the Study.

If the Department is going to have an accurate overview of the state of wholesale electricity markets and grid reliability in the United States, the Study must also consider the following:

Natural Gas Prices Have the Greatest Influence on Electricity Markets

The April 14 Memorandum suggests that government regulations as well as policies that encourage renewable energy development, including tax incentives and state renewable portfolio standards, are to blame for the retirement of coal and nuclear power plants. However, it does not take a Ph.D. in economics to understand that it is historically low natural gas prices that are challenging the viability of other conventional generating sources in electricity markets.

Your own Energy Information Administration notes that last year natural gas prices were the lowest they have been in twenty years. Low gas prices translate into lower electricity prices. For example, wholesale electricity prices in New England dropped to a 13-year low in 2016. Natural gas now is the leading source of electric generation in the United States, replacing coal, because gas is less expensive.

As you should know, low natural gas prices have had a significant impact on electric generation in Texas where coal had previously been dominant. In 2016 natural gas accounted for 46 percent of electric generation in the region served by the Electric Reliability Council of Texas (ERCOT), while coal generated 29 percent. According to a recent study by the Brattle Group, market forces will cause coal-fired generation to drop to just six percent of Texas' electric resource profile by 2035.

If it were renewable energy that is endangering the competitiveness of power generated by coal and nuclear plants, one would assume that economically challenged plants would be in direct competition with wind and solar projects. But the vast majority of coal and nuclear plants that have or may soon be retiring are located in regions with lower renewable, but higher natural gas generation levels.

In organized markets the evidence is overwhelming that fossil fuel generation, not renewable energy, establishes the clearing price (the amount received by all generators during a particular time period) virtually all of the time. For example, in 2015 natural gas set the clearing price in the region served by the Midwest Independent System Operator 76 percent of the time and coal plants set the clearing price 23 percent of the time. In contrast renewable energy facilities were responsible for the clearing prices only one percent of the time. Eliminating or altering clean energy incentives would have little if any impact on the competitiveness of a coal or nuclear plant.

Existing Analysis Demonstrates the Positive Impact of Renewable Technologies on Grid Reliability and Resilience

The Department's national laboratories, which you described as "the envy of the world" during your confirmation hearing before the Senate Energy and Natural Resources Committee, have already exhaustively analyzed the impact of intermittent renewable electric generation technologies on grid reliability and resilience and concluded that significantly higher amounts of renewable energy can be added without impairing reliability. For instance, DOE's National Renewable Energy Laboratory published a study last year concluding that renewable energy can reliably meet up to 80 percent of U.S. electric demand in 2050 (with wind and solar accounting for approximately half of all electric generation) if changes are made to enhance the flexibility of the grid.

Electric transmission operators agree. Earlier this year the California Independent System Operator (ISO) published a study concluding that solar power can provide reliability support services to the grid in a manner that is equal to or better than the support services from other power plants, such as coal, nuclear and natural gas. Just several weeks ago PJM, which operates the grid in all or parts of 13 states and Washington, D.C., released a study noting that adding substantial amounts of wind energy to its system will actually enhance both reliability and grid resilience.

According to a new report from M.J. Bradley and Associates ("Powering into the Future: Renewable Energy & Grid Reliability"), wind and solar generators across the nation provide several services that strengthen the grid, including "maintaining local voltage and frequency performance, minimizing grid disturbances, providing grid balancing services, and creating a more flexible and diverse generation fleet." Your Study must take these benefits into account.

Several States Have Already Successfully Integrated High Levels of Renewable Energy

During your confirmation hearing you bragged about the success Texas has had in becoming the wind power capital. During the first quarter of this year, wind power accounted for approximately 23 percent of all the electricity generated in ERCOT. On some days, wind provides more than 50 percent of all the electricity consumed in the state. Wind power has created thousands of jobs, kept the lights on during periods of high power demand, and helped reduce electric rates to record low levels in Texas. Other states with high renewable energy penetration rates have had similar experiences.

Grid Modernization Technologies Will Further Enhance the Reliable Integration of Renewable Resources

The Senate Energy and Natural Resources Committee has, on several occasions, received testimony on advanced grid technologies, including energy storage, advanced power electronics and controls, and predictive situational awareness tools that are making the integration of wind and solar power technologies more economic and reliable. The Department's Grid Modernization Lab Consortium, which you promised to support during your confirmation process, is working to accelerate these types of innovations to promote greater security and resilience.

The national laboratories continue to provide technical leadership in the advancement of new tools, technologies and analytics that will enhance the reliability of the grid under a range of future scenarios to accommodate the changes we are witnessing in electricity generation and consumption. Ironically, as DOE embarks upon a Study that the April 14 Memorandum claims is focused on enhancing grid reliability and resiliency, President Trump is proposing to slash the very programs at your Department that will actually help achieve this goal.

Conventional Electric Generation Technologies Are More Heavily Subsidized Than Renewable Energy

The April 14 Memorandum targets renewable energy incentives for potential elimination but appears to fail entirely to consider policies and subsidies that favor other technologies. The fact is that all forms of energy are subsidized and that nuclear and fossil fuel technologies are more heavily subsidized than renewable energy. Since 1947, 86 percent of all energy subsidies have gone to fossil sources and nuclear power.

The Department's Study should also consider the hidden externalities, such as public health impacts, associated with the combustion of fossil fuels to generate electricity that the National Academies have thoroughly examined. Conversely, DOE cannot adequately assess the impact renewable technologies are having on electricity markets without examining the benefits renewable energy offers, including reducing emissions of a variety of pollutants.

Mr. Secretary, the notion that a 60 day review conducted by ideologues associated with a Koch Brothers-affiliated think tank should supplant research and analysis conducted by the world's foremost scientists and engineers would be a grave disservice to American taxpayers. It would constitute nothing short of an international embarrassment within a global research community that has long-relied on U.S. technical leadership.

If DOE is going to take 60 days to perform a Study that the CEO of the California ISO said can be completed in an hour because the research has already been conducted, at the very least it is important that you consider the ample evidence that already exists. We fear that the Department is instead embarking on an initiative aimed at bolstering the views of a group of special interests seeking to resurrect electric generation technologies that can no longer successfully compete on their own. You should not allow this to happen.

This exercise is especially mystifying in light of your own experiences as Governor. Under your leadership Texas demonstrated that renewable energy can enhance fuel diversity, reduce energy prices, and improve grid reliability and resilience. We had mistakenly hoped you would also pursue these same results for the nation.

Sincerely,

Maria Cantwell
United States Senator

Debbie Stabenow
United States Senator

Mazie K. Hirono
United States Senator

Al Franken
United States Senator

Tammy Duckworth
United States Senator

Ron Wyden
United States Senator

Martin Heinrich
United States Senator