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Gas Lines to Pipelines: The Case for Comprehensive Federal Energy Legislation

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Introduction

We've struggled with the consequences of an insufficient federal energy policy for nearly half a century. From the gas lines of the 1970s to the Keystone XL pipeline controversy of the past several years, the federal and state governments have engaged in a fractured and inefficient approach to the regulation of the energy industry allowing states, municipalities, and even individual citizens to delay and even defeat major projects that would decrease energy costs, increase our energy security, and decrease greenhouse gas emissions.

The absence of a cohesive and comprehensive energy policy has left us with regulatory uncertainty stifling innovation that would drive economic growth, high energy prices creating a drag on that same economy, and hollow promises to reduce greenhouse gas emissions without a sustainable plan to achieve those reductions.

One could argue that the best answer to these challenges is comprehensive federal legislation that can be implemented immediately, without time-consuming rule makings or interference by state or local governments, or the courts. Only the legislative process allows—in fact requires—collaboration between Democrats, Republicans, industry, and conservationists that will enable a prompt and comprehensive response. Because the federal response will be a product of such collaboration, we should feel comfortable preempting state and local laws that could delay that comprehensive response.

Ironically the State of Ohio shows us the way. Just last month the Ohio Supreme Court held that an Ohio state law preempted a municipal ordinance thwarting oil and gas exploration.[1] However, just three months earlier regulators in New York imposed a state-wide ban on natural gas exploration and extraction. These conflicting results emphasize the need for a comprehensive federal response.

1. The Constitutional Case for Comprehensive and Preemptive Federal Legislation

Given the urgency and scope of the energy challenges we face, it should be uncontroversial that Congress has the authority to enact comprehensive and preemptive legislation to address these challenges. After all, the United States Constitution's Commerce Clause gives Congress the power to regulate "[c]ommerce with foreign Nations, and among the several States, and with the Indian Tribes."[2] The Constitution's Necessary and Proper Clause expands that authority by allowing Congress "[t]o make all Laws which shall be necessary and proper" to carry out its enumerated powers.[3] The Constitution's Supremacy Clause makes clear federal laws "shall be the supreme Law of the Land" in the event of a conflict with any state law.[4]

These basic and fundamental Congressional powers have been upheld by countless Supreme Court decisions. For example, in *Wickard v. Filburn*, the Supreme Court upheld a law limiting a single farmer's wheat production even if the wheat was primarily for the farmer's personal consumption.[5] The Court found that although the conduct of farming itself may not have directly affected interstate commerce, the cumulative effect of the same conduct by many farmers could affect interstate commerce.[6]

In *Gonzales v. Raich*, the Supreme Court upheld Congress's authority under the Commerce Clause and the Necessary and Proper Clause to regulate the intrastate possession and consumption of marijuana.[7] Chief Justice Roberts recognized that because the Act was "comprehensive [and valid] legislation to regulate the interstate market," it appropriately extended to intrastate activity.[8]

These precedents, among many others, make clear that Congress has wide latitude to legislate a comprehensive national response to the energy challenges we face. As the Supreme Court concluded over thirty years ago, "it is difficult to conceive of a more basic element of interstate commerce than electric energy, a product used in virtually every home and every commercial or manufacturing facility. No State relies solely on its own resources in this respect."[9] This statement applies with equal force to exploration for the sources of our energy as well as its generation and transmission.

With Congress's unquestionable power under the Commerce Clause to legislate in this arena comes the authority under the Supremacy Clause to preempt state and local laws covering the same subject. Specifically, the Supreme Court allows federal preemption in three scenarios: when Congress expressly states that it is preempting state or local law;

when the state or local law directly conflicts with the federal law; or when the federal law effectively occupies an entire field, leaving no room for supplementary state or local activity.[10] The economic impacts of our energy quandary most certainly authorize Congress to exercise this most "basic element" of its authority.

2. Examples of the Exercise of Comprehensive and Preemptive Federal Authority

One doesn't need to look far to find examples of Congress's exercise of comprehensive and preemptive authority in circumstances no less complex, and no more demanding, than we face in the energy arena. For example, the Transportation Act of 1920 grants the Federal government exclusive authority to approve the locations of rail lines and other rail facilities.[11] This comprehensive and preemptive authority was upheld by the Supreme Court.[12] In 2012, in response to local interference with the siting of wireless communication towers, Congress expanded the reach of the Federal Communications Commission under the Telecommunications Act of 1996, requiring state and local governments to approve certain requests and putting limits on the time available to do so. In response to concerns about uncontrolled releases of hazardous substances, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).[13] Although CERCLA doesn't completely displace state and local laws, it does exempt actions under the statute from the requirement to seek federal, state or local permits,[14] and it also preempts pre-enforcement judicial review of those actions.[15]

The drag of our current energy policy on our economy, and the need for sustainable reductions in Greenhouse Gas emissions, demand the same comprehensive and preemptive federal action taken to address past crises facing our rail transportation and communications networks, and the perceived risks posed by abandoned hazardous waste sites.

3. The Insufficiency of Existing Federal Energy Laws

Although there are several, sometimes conflicting, federal laws in the energy arena, they are collectively insufficient to promote energy innovation and provide for an economically and ecologically sustainable energy future. I offer a few examples of these insufficiencies.

The Federal Power Act (FPA) grants the Federal Energy Regulatory Commission (FERC) the authority to regulate the transmission of electricity in interstate commerce as well as the sale of electricity for resale. However the FPA reserves all other authorities to the states, including the authority to regulate facilities used for generation, local distribution, and intrastate transmission.[16]

Because FERC has no authority under the FPA to regulate intrastate transmission and distribution, the D.C. Circuit Court of Appeals recently invalidated a FERC Order

encouraging demand response, the management of energy use during periods of peak energy demand. There can be no debate over the meaningful role demand response can and should play both in reducing the demand for electricity (and therefore the need for power generation), as well as in the improvement of grid stability and reliability. For these reasons, the Solicitor General has petitioned the Supreme Court to review the D.C. Circuit's decision.[17] However, the fact that there is even a question about FERC's appropriate role respecting this critically important issue suggests the need for further Congressional action, just as Congress acted to expand the reach of the Telecommunications Act in response to new opportunities and challenges.

Electricity is the key input for the modern economy, but because states have retained jurisdiction over the location and permitting of transmission lines, we find ourselves with an antiquated and inadequate transmission network. The inadequacy of this network creates stiff head winds for the development of new renewable energy generation facilities including wind and solar facilities, often located distant from centers of electricity demand. The Energy Policy Act of 2005 called upon the Department of Energy to designate National Interest Electric Transmission Corridors (NIETCs) within which FERC would have limited exclusive authority to approve the siting of transmission facilities.[18] Although DOE designated NIETCs in the Southwest and Mid-Atlantic in 2007,[19] in 2009 the Fourth Circuit Court of Appeals limited FERC's ability to issue transmission siting permits,[20] and, in 2011, the Ninth Circuit Court of Appeals vacated and remanded the NIETC designations.[21] Meanwhile, the objective of the Energy Policy continues to be thwarted; our transmission network remains antiquated and inadequate.

Although FERC has broader authority over natural gas pipelines under the Natural Gas Act (NGA) than it does over transmission lines, its authority is still subject to state authority over intrastate pipelines.[22] Also, the states continue to lead the application of federally authorized regulatory programs, including those under the Clean Water Act and the Coastal Zone Management Act, to natural gas pipeline facilities. The State of Connecticut successfully used this authority to prevent the construction of a natural gas pipeline from Connecticut to New York by denying a state Water Quality Certificate required under Section 401 of the Clean Water Act.[23]

Renewable energy projects have floundered for the same reason. For example, the Cape Wind project was a 130-turbine wind farm off the coast of Massachusetts that first sought needed permits in 2001, including permits for the transmission lines that would run through state waters, and a state certification under the Coastal Zone Management Act.[24] In December 2013, Siemens announced a major contract with Cape Wind to build the offshore wind turbines and associated electric service platform as well as provide long-term maintenance for the first utility-scale offshore wind farm in the United States.[25] After countless appeals over the next 14 years, in December 2014 the two utilities that had agreed to purchase power from Cape Wind terminated their contracts

on account of the continued uncertainty of the project's viability. Unfortunately, the challenges faced by this renewable energy project are not at all unique.[26]

Under the Atomic Energy Act the states retained authority over "questions of need, reliability, cost, and other related State concerns."[27] We all know what that retained authority has meant for the potential development of new nuclear power facilities across the country. Approval by the Nuclear Regulatory Commission of a construction license for two new Westinghouse AP1000 reactors at the Vogtle nuclear plant in Georgia represented the first licensing of a new nuclear plant in the United States since 1978.[28] Following a low-carbon path toward meeting our energy needs requires considering of all available technologies. Unfortunately, the morass of legal hurdles any nuclear project in the United States will face is a strong disincentive for investment in technology and project development.

As mentioned above, in December, the State of New York used its retained authority to impose a moratorium on natural gas exploration and extraction in the State of New York.[29] This action by one state, and its national ramifications, calls to mind the words of Justice Blackmun in *FERC v. Mississippi* that "no State relies solely on its own [energy] resources."[30] Shouldn't it follow that no state should have the ability to thwart our development of economically and ecologically sustainable energy sources?

4. Characteristics of Comprehensive Federal Energy Legislation

A. Legislation Should Be Comprehensive, Efficient and Streamlined

Sufficiently comprehensive federal legislation could eliminate most of the challenges discussed above. However, it is critically important that any further federal legislation be clear and adequately detailed so that it can be implemented without time consuming or arbitrary rule makings, the litigation that inevitably follows them, and the significant threat that such rule makings and litigation upset the compromises reflected by the legislation. Elements of such legislation might include:

- Judicial remedies limited to those specified in legislation and subject to exclusive federal court jurisdiction;
- Pre-development judicial review further limited; and
- Sufficiently comprehensive legislation to develop and reflect consensus and eliminate, or at least limit, the need for time consuming rule-makings.

B. Legislation Should Cover All National Energy Sources

The United States Energy Information Agency predicts a 29 percent increase in our energy demand from 2012 to 2040.[31] To meet this demand and stay on the path to a clean energy future, we must balance energy access, affordability, reliability, resilience,

and environmental impact in federal legislation covering all energy exploration activities *and* all energy generation, transmission, and distribution.

If we are serious about curbing greenhouse gas emissions and reducing our reliance on foreign oil in the near term, we must also make our existing fossil fuel technologies cleaner, more efficient, and more reliable. Legislation promoting such investments would cause immediate environmental benefits that are not possible with current renewable technologies and that are necessary to achieve a clean energy future.

C. Legislation Should Provide Clarity to Promote Innovation

Clear, predictable regulatory expectations can also create the level playing field that encourages companies to make long-term investments in innovative energy technologies. One example of regulation encouraging innovation is the efficiency standard that applies to more than 75 percent of all new light-duty vehicles sold globally. Efficiency innovations are expected to limit increases in oil demand in the sector to just 25 percent despite a 50 percent increase in the number of light duty vehicles by 2040.[32] In the United States, EPA projects that new federal fuel efficiency standards will result in saving four billion barrels of oil and reducing greenhouse gas emissions by approximately two billion metric tons.[33] The effectiveness of such regulations stems from offering a clear target for industry and allowing flexibility in reaching that target rather than mandating a particular technology approach.

Similarly, federal investment and legislative clarity could motivate the deployment of digital two-way communications on the power grid—the so-called smart grid—and unleash a wave of innovation from large established players like Honeywell and Siemens and from a younger crop of business like Enernoc, Silver Spring Networks, and Tendril. These firms are already developing pioneering solutions for empowering energy producers and consumers, as well enabling better management of the grid. While this progress is occurring in spite of the limitations of the current system, there is no doubt that it would be accelerated with clear federal direction and leadership.

5. A Few More Words on the Role of Innovation

A consistent, clearly defined and executed energy policy would go a long way to addressing many of the energy challenges we face today. But technology and innovation are also critical. The world's best companies are developing technologies that enable smarter and more efficient use of natural resources while creating value for their customers. These innovative solutions offer a glimpse at the potential for achieving sustainable economic growth while also delivering substantial improvements in environmental performance.

In 2014, the SuperTruck—the product of a public-private partnership between the U.S. Department of Energy, Cummins, and Peterbilt—achieved 10.7 miles per gallon in a

real-world, fully loaded hauling demonstration. The SuperTruck incorporates technology advances ranging from improved engine efficiency to reduced weight and improved aerodynamics to achieve a 75 percent increase in fuel economy and 43 percent reduction in greenhouse gas emissions compared to a 2009 baseline Class-8 freight truck.[34]

Further up the energy value chain, in the absence of regulation or adequate infrastructure, producers now often flare natural gas during energy exploration and production activities is allowing emissions that are a cause of concern locally and globally. Certainly, federal legislation that provides a national standard for limiting flaring could reduce emissions. However, technological innovation to address the problem at a more fundamental level is more likely to be successful in putting us on a sustainable long-term path.

A recent partnership between Statoil, Ferus Natural Gas Fuels, and GE offers one way to use natural gas that is currently flared today. The Last Mile Fueling Solution enables capture and storage of excess natural gas where it can then be used on site to displace diesel and produce cleaner power or placed into local fueling networks. The pilot project in North Dakota has the potential to capture up to 5 million standard cubic feet of gas per day and achieve greenhouse gas emissions reductions of up to 200,000 metric tons per year, or the equivalent of taking 45,000 cars off the roads.[35] Future phases of the collaboration will focus on challenges such as reducing the water consumption needed for hydraulic fracturing.[36]

Meeting the world's increasing need for energy, while also reducing greenhouse gas emissions, demands innovation and, increasingly, leveraging software technology -- growing cleaner energy sources and getting more work out of the energy and resources we do consume. Here again, companies like GM, John Deere, IBM and others are leveraging big data analytics and the industrial internet to optimize performance. For example, one company used the industrial internet to combine historic data on wind turbine operations with real time weather conditions to increase energy output at a utility's windfarm by 4%, the equivalent of adding 19 turbines. Similarly, a Brazilian airline is remapping flights to reduce average fuel consumption by 77 gallons per flight, saving the airline almost $100 million over five years and significantly reducing its CO2 emissions.

Even a one or two percent improvement in energy efficiency can have dramatic impacts. With a two percent improvement, the currently projected increase in global energy consumption over the next 15 years can be reduced by 70 quadrillion BTUs, the equivalent of approximately one third the world's annual oil consumption. It's clear that innovation and the industrial internet are critical tools to help customers reduce fuel consumption, conserve water, lower emissions, and predict and prevent equipment failures that can cause widespread disruption and impede economic growth.

Finally, meeting the global demand for energy will require thinking beyond energy narrowly defined. Without improvements in resource productivity, global extraction of raw materials and energy could increase by 80 percent by 2030.[37] Smarter management of materials allows us to extract maximum utility from the energy and material inputs required to make a product. Whether by relying on time-tested approaches like remanufacturing or using the latest developments in material science, leading companies are pursuing a range of strategies to improve resource efficiency. In 2011, Vestas Wind Systems and Caterpillar entered a 10-year global agreement to remanufacture wind turbine components. By taking end-of-life components and returning them to as-new levels of quality and performance, the collaboration between Vestas and Caterpillar has created value by reducing costs and minimizing waste.[38]

GE is employing advanced manufacturing and advanced materials with the aim of improving the life cycle efficiency of our products. Its next generation jet engines are designed to be significantly lighter and more durable and to deliver higher fuel efficiency and lower maintenance costs.[39] For example, use of carbon fiber in the fan blades makes them both lighter and tougher. Ceramic Matrix Composites in the engine core are lighter, stronger, and able to withstand higher temperatures that allow the engine to run more efficiently. Each of the fuel nozzles in every engine will be 3D printed using additive manufacturing to produce a nozzle that is lighter and more durable. The longer part life can reduce both maintenance costs and the need for raw materials.

Conclusion

Meeting our energy demands, improving energy security, and reducing impact on the environment requires a comprehensive and coordinated federal response. We should be honest about the challenges—many of our own creation—we face. A thoughtful inventory of those challenges, and what might be done by Congress to overcome them, is an important first step toward a comprehensive national response.

Endnotes

[1] State ex rel. Morrison v. Beck Energy Corp., Slip Opinion No. 2015-Ohio-485.
[2] U.S. Constitution, Art. 1, §8, cl. 3.
[3] U.S. Constitution, Art. 1, §8, cl. 18.
[4] U.S. Constitution. Art. VI, cl. 2.
[5] *Wickard v. Filburn*, 317 U.S. 111 (1942).
[6] *Id*.
[7] *Gonzales v. Raich*, 545 U.S. 1 (2005).
[8] *Nat'l Fed'n of Indep. Bus. v. Sebelius*, 132 S. Ct. 2566, 2953 (2012).
[9] *FERC v. Mississippi*, 456 U.S. 742 (1982).
[10] *Crosby v National Foreign Trade Council*, 530 U.S. 363, 372 (2000).
[11] Transportation Act of 1920, Pub. L. No. 66-152, 41 Stat. 456 (1920).
[12] *R.R. Comm'n of Cal. v. S. Pac. Co*., 264 U.S. 331, 347 (1924).
[13] *A Legislative History of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Senate Committee of Environment and Public Works*, S. Doc. No. 97-14, 97th Cong., 2d Sess. 1983, Vol. I.
[14] 42 U.S.C. § 9621(e)(1) (2006).
[15] 42 U.S.C. § 9613(h) (2006).
[16] 16 U.S.C. § § 824 (a) and (b) (2006).
[17] *Elec. Power Supply Ass'n v. FERC*, 753 F.3d 216 (D.C. Cir. 2014), *Petition for cert.* filed (Jan. 15, 2015) (No.14-840).
[18] 16 U.S.C. § 824p (2006).
[19] National Electric Transmission Congestion Report, 72 Fed. Reg. 56,992 (Oct. 5, 2007).
[20] *Piedmont Environmental Council v. FERC*, 558 F. 3d 304, 309-10 (4th Cir. 2009).
[21] C*alifornia Wilderness Coalition v. DOE*, 631 F.3d 1072 (9th Cir. 2011).
[22] 15 U.S.C. § 717(b) and (c) (2006).
[23] *Islander E. Pipeline Co. LLC v. McCarthy*, 525 F.3d 141 (2nd Cir 2008).
[24] 16 U.S.C. *§* 1456(c) (2006).
[25] Siemens, "*Siemens signs contract for first commercial offshore wind farm in the USA,*" available at http://www.siemens.com/press/pi/EW201312018e (2013).
[26] *See* Erica Schroeder, "*Turning Offshore Wind On,*" 98 Cal. L. Rev. 5, (2010) (noting that "since the passage of the CZMA in 1972 until March 2010, states had filed 141 appeals with the Secretary protesting federal permits affecting their coastal zones").
[27] *PG & E v. State Energy Comm'n*, 461 U.S. 190 (1983).
[28] U.S. Nuclear Regulatory Commission, *Issuance of Combined Licenses And Limited Work Authorizations For Vogtle Electric Generating Plant (VEGP) Units 3 And 4*, http://pbadupws.nrc.gov/docs/ML1135/ML113540620.html
[29] The New York State Department of Health, "*A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development*" available at http://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf. (December 2014)
[30] *FERC v. Mississippi*, 456 U.S. 742, 757 (1982).
[31] U.S. Energy Information Administration, *Annual Energy Outlook 2014*, available at http://www.eia.gov/forecasts/aeo/MT_electric.cfm (2014).
[32] OECD/IEA, *World Energy Outlook 2014 - Executive Summary*, available at www.worldenergyoutlook.org/publications/weo-2014.
[33] U.S. EPA, Office of Transportation and Air Quality Regulatory Announcement, "*EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks"* available at www.epa.gov/otaq/climate/documents/420f12051.pdf. (2012)
[34] SAE, "*Cummins-Peterbilt SuperTruck nabs 10.7 mpg in real-world driving test,*" available at http://articles.sae.org/13199 (2014).
[35] Ferus, "*Statoil, GE and Ferus Natural Gas Fuels expanding flare gas solution in Bakken,*" available at www.ferus.com/statoil-ge-and-ferus-natural-gas-fuels-expanding-flare-gas-solution-in-bakken (2014).

[36] Statoil, "GE and Statoil launch ambitious new collaboration to accelerate development of sustainable energy solutions," available at www.statoil.com/en/NewsAndMedia/News/2015/Pages/28Jan_GE_collaboration.aspx (2015).

[37] OECD, "*OECD Environmental Outlook to 2030"* (2008).

[38] Vestas, "*Cat Reman and Vestas Wind Systems Reach Agreement on Remanufacturing Wind Turbine Components*," available at www.vestas.com/en/publications/2011/november/2011_11_07_1200 (2011).

[39] GE, "*GE takes a Transatlantic LEAP with cutting-edge engine technology*," available at www.gereports.eu/post/87016526004/ge-takes-a-transatlantic-leap-with-cutting-edge (2014).