

ONE HUNDRED FOURTEENTH CONGRESS
Congress of the United States
House of Representatives
COMMITTEE ON ENERGY AND COMMERCE
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MEMORANDUM

September 14, 2016

To: Subcommittee on Energy and Power Democratic Members and Staff

Fr: Committee on Energy and Commerce Democratic Staff

Re: Hearing on “The Department of Energy’s Role in Advancing the National, Economic, and Energy Security of the United States”

On **Thursday, September 15, 2016 at 10:00 a.m. in room 2322 of the Rayburn House Office Building**, the Subcommittee on Energy and Power will hold a hearing on “The Department of Energy’s Role in Advancing the National, Economic, and Energy Security of the United States.”

I. QUADRENNIAL ENERGY REVIEW

On January 19, 2014, President Obama issued a Presidential Memorandum directing the federal government to conduct a Quadrennial Energy Review (QER) and establishing a task force to conduct that review and “submit a Quadrennial Energy Review Report to the President every 4 years...”¹ The task force, co-chaired by the Director of the Office of Science and Technology Policy and the Director of the Domestic Policy Council, includes all the Cabinet-level Departments, as well as numerous agencies and offices such as the Environmental Protection Agency, Council on Environmental Quality, the Army Corps of Engineers and the National Economic Council.

The Memorandum defined the scope for the initial installment of the QER to be the nation’s infrastructure for transmission, storage and distribution (TS&D) and that it build on the

¹ The White House, *Presidential Memorandum – Establishing a Quadrennial Energy Review* (Jan. 19, 2014) (online at www.whitehouse.gov/the-press-office/2014/01/09/presidential-memorandum-establishing-quadrennial-energy-review).

Obama Administration's March 2011 *Blueprint for a Secure Energy Future* and June 2013 *Climate Action Plan*.² The task force was directed to prepare a report that:

- provides an integrated view of, and recommendations for, federal energy policy in the context of economic, environmental, occupational, security, and health and safety priorities;
- reviews the adequacy...of existing executive and legislative actions, and recommends additional executive and legislative actions;
- assesses and recommends priorities for research, development, and demonstration programs to support key energy-innovation goals; and
- identifies analytical tools and data needed to support further policy development and implementation.³

The Obama Administration released the task force's first report, *Quadrennial Energy Review: Energy Transmission, Storage and Distribution Infrastructure*, on April 21, 2015.

The QER covered the following areas:

- Increasing the Resilience, Reliability, Safety, and Asset Security of TS&D Infrastructure;
- Modernizing the Electric Grid;
- Modernizing U.S. Energy Security Infrastructures in a Changing Global Marketplace;
- Improving Shared Transport Infrastructures;⁴
- Integrating North American Energy Markets;
- Addressing Environmental Aspects of TS&D Infrastructure;

² *Id.*; U.S. Department of Energy, *Quadrennial Energy Review, Energy Transmission, Storage and Distribution Infrastructure*, at S-2 (Apr. 2015) (online at energy.gov/sites/prod/files/2015/05/f22/Summary%205.18.15.pdf).

³ *Id.*

⁴ Some of the findings and recommendations in this section of the QER may not be germane to the jurisdiction of the Committee on Energy and Commerce. For further information please See U.S. Department of Energy, *Quadrennial Energy Review, Chapter V: Improving Shared Transport Infrastructures* (Apr. 2015) (online at energy.gov/sites/prod/files/2015/04/f22/QER_Ch5.pdf).

- Enhancing Employment and Workforce Training;
- Siting and Permitting of TS&D Infrastructure.⁵

A. Increasing the Resilience, Reliability, Safety, and Asset Security of TS&D Infrastructure

This chapter of the QER found that TS&D infrastructure is vulnerable to a wide and growing range of natural phenomena and attacks, both physical and cyber. While these threats and vulnerabilities tend to be region-specific, an increasing interdependence between energy systems heightens those vulnerabilities.⁶ The chapter specifically identified high-voltage transformers as being a critical vulnerability for the electric grid. With regard to natural gas, the chapter identified aging pipeline distribution systems as a safety and environmental concern; highlighted important difficulties in recovering from gas (and liquid fuel) supply interruptions; and stressed the growing dependence on natural gas as presenting challenges with regard to the electric grid.⁷

Recommendations in this chapter included: establishing a competitive program to accelerate pipeline replacement and enhance maintenance programs for natural gas distribution systems; establishing a competitive grant program to promote innovative solutions to enhance energy infrastructure resilience, reliability, and security; undertaking analyses necessary to mitigate the risks associated with loss of transformers; and, analyzing the need for additional or expanded regional product reserves and integrating the President's authorities to release products from regional petroleum product reserves into a single, unified authority.⁸

B. Modernizing U.S. Energy Security Infrastructures in a Changing Global Marketplace

This installment of the QER also discussed our nation's need to adapt and modify our understanding of energy security due to changed circumstances in energy production and use in the United States. Increased oil and gas production, coupled with decreased energy demand through improved efficiency, have resulted in the U.S. significantly decreasing demand for imported energy. As for the supply side, the QER found that the United States is emerging as a leader in petroleum and natural gas production; the Energy Information Administration (EIA)

⁵ U.S. Department of Energy, *Quadrennial Energy Review, Energy Transmission, Storage and Distribution Infrastructure*, at S-2 (Apr. 2015) (online at energy.gov/sites/prod/files/2015/05/f22/Summary%205.18.15.pdf).

⁶ Senate Committee on Energy and Natural Resources, Testimony of Secretary of Energy Ernest J. Moniz, *Hearing on The Administration's Quadrennial Energy Review*, 114th Cong. (Apr. 28, 2015).

⁷ U.S. Department of Energy, *Quadrennial Energy Review, Energy Transmission, Storage and Distribution Infrastructure*, at S-11, S-12 (Apr. 2015) (online at energy.gov/sites/prod/files/2015/05/f22/Summary%205.18.15.pdf).

⁸ *Id.* at S-12.

projects that this trend will continue, with U.S. net imports of oil dropping to 21 percent of consumption in 2016, the lowest level since 1969.⁹ These changes have put added strain on our expanding energy distribution system, including the capacity of the Strategic Petroleum Reserve (SPR) and “the degree to which it can protect the U.S. Economy from oil disruptions.”¹⁰

Ultimately, the QER found that we should be looking beyond oil security, and that “energy security needs to be more broadly defined to cover not only oil but other sources of supply, and to be based not only on the ability to withstand shocks but also to be able to recover quickly from any shocks that do occur.”¹¹ Combatting climate change is also essential to strengthening collective energy security, as the U.S. and its allies recognize. At the G7 Rome Energy Ministerial Meeting, the U.S. and its G7 allies issued a statement as part of the G7 Energy Initiative for Energy Security which recognized “that fossil fuels still remain an important element of our energy mix,” and “that reducing emissions from fossil fuels is necessary to tackle climate change and can enhance our energy security.”¹²

To aid in modernizing U.S. energy security infrastructure, the QER made a number of recommendations, primarily focused on increasing the effectiveness of the SPR. First, the QER recommended a change in SPR release authority to reflect modern oil markets, allowing for anticipatory releases in the event of “an economy-damaging price increase as a result of a severe energy supply interruption.”¹³ It further recommended that DOE analyze size and configuration of the SPR, and make necessary investments to both “optimize the ability of the SPR to protect the U.S. economy in a supply emergency,”¹⁴ and extend the life of current infrastructure to

⁹ U.S. Department of Energy, *Quadrennial Energy Review, Chapter IV: Modernizing U.S. Energy Security Infrastructures in a Changing Global Market* (online at energy.gov/sites/prod/files/2015/04/f22/QER_Ch4.pdf); U.S. Energy Information Administration, *Short-Term Energy Outlook May 2015* (May 12, 2015) (online at www.eia.gov/forecasts/steo/pdf/steo_full.pdf).

¹⁰ U.S. Department of Energy, *Quadrennial Energy Review, Chapter IV: Modernizing U.S. Energy Security Infrastructures in a Changing Global Market*, at 4-6 (online at energy.gov/sites/prod/files/2015/04/f22/QER_Ch4.pdf).

¹¹ The White House, *FACT SHEET: Administration Announces New Agenda to Modernize Energy Infrastructure*, at 6 (Apr. 21, 2015) (online at energy.gov/sites/prod/files/2015/04/f22/QER%20SUMMARY%20FACT%20SHEET%20final.pdf).

¹² Foreign Affairs, Trade and Development Canada, *Joint Statement - Rome G7 Energy Ministerial Meeting* (May 6, 2014) (online at www.international.gc.ca/g7/ministerials-ministerielles/2014-g7-rome.aspx?lang=eng).

¹³ U.S. Department of Energy, *Quadrennial Energy Review, Chapter IV: Modernizing U.S. Energy Security Infrastructures in a Changing Global Market*, at 4-7 (online at energy.gov/sites/prod/files/2015/04/f22/QER_Ch4.pdf).

¹⁴ *Id.* at 4-9.

“increase the incremental distribution capacity.”¹⁵ The QER also recommended continued coordination with U.S. allies on energy security issues.

Going beyond the SPR, the QER recommended promoting energy security through enhanced fuel diversity and building on existing research partnerships with the Department of Defense on the development of drop-in biofuels and fuels with higher-level ethanol blends, especially for use in aviation.¹⁶ It advised DOE to provide technical assistance to those who wish to make investments in infrastructure for these types of fuels, and to ensure there is necessary support for data collection and analysis of these fuels as they continue to play a role in the nation’s energy mix.¹⁷ Finally, the QER recommended “the relevant agencies should conduct a study of the economic, engineering, logistics, workforce, construction, and regulatory factors affecting the domestic shipping industry’s ability to support U.S. energy security.”¹⁸

II. ENERGY SECURITY PROVISIONS OF THE FAST ACT

On December 4, 2015, President Obama signed the Fixing America’s Surface Transportation (FAST) Act into law.¹⁹ The FAST Act includes provisions — based in part on the QER — intended to improve U.S. energy security and the resilience of energy infrastructure during natural disasters and emergencies. These provisions have a direct impact on DOE, either modifying departmental authority or directing the agency to develop programs and take actions in order to facilitate increased energy security and resiliency.

A. Emergency Preparedness for Energy Supply Disruptions

The FAST Act directed the Secretary of Energy to develop and adopt procedures that would improve emergency preparedness of oil and natural gas infrastructure. Section 21001 requires that DOE enhance communication and coordination between DOE, federal partners, state and local government, and the private sector to improve emergency response and recovery.

B. Resolving Environmental and Grid Reliability Conflicts

The FAST Act amended section 202(c) of the Federal Power Act (FPA) to resolve conflicts between emergency orders and compliance with environmental laws and regulations.

¹⁵ The White House, *FACT SHEET: Administration Announces New Agenda to Modernize Energy Infrastructure*, at 6 (Apr. 21, 2015) (online at energy.gov/sites/prod/files/2015/04/f22/QER%20SUMMARY%20FACT%20SHEET%20final.pdf).

¹⁶ U.S. Department of Energy, *Quadrennial Energy Review, Chapter IV: Modernizing U.S. Energy Security Infrastructures in a Changing Global Market*, at 4-13 (online at energy.gov/sites/prod/files/2015/04/f22/QER_Ch4.pdf).

¹⁷ *Id.*

¹⁸ *Id.* at 4-14.

¹⁹ Pub. L. No. 114-94.

Section 61002 of the FAST Act clarifies that when a party is under an emergency directive to operate pursuant to section 202(c), that party will not be deemed in violation of environmental laws or regulations or subject to civil or criminal liability as a result of actions taken that are necessary to comply with a DOE-issued emergency order. The section further provides that after an initial order, not to exceed 90 days duration, DOE may renew or reissue an order for subsequent 90-day periods as it determines necessary. However, in renewing or reissuing any such order, DOE must consult with the primary federal agency with expertise in the environmental interest protected by the conflicting law.

C. Critical Electric Infrastructure Security

Section 61003 established a new section 215A of the FPA that provides the Secretary with the authority to address grid security emergencies when the President issues a written directive identifying such an emergency. The Secretary would be able to take emergency measures to protect the bulk power system or defense-critical electric infrastructure, including ordering owners and operators to take appropriate actions.

The new section 215A of the FPA also facilitates the protection and voluntary sharing of critical electric infrastructure information (CEII) between private sector asset owners and the federal government. It exempts CEII from certain federal and state disclosure laws for up to five years, requires FERC to facilitate voluntary information sharing between relevant entities,²⁰ and establishes sanctions for unauthorized disclosure of shared information.

D. Strategic Transformer Reserve

DOE is required to submit a plan to Congress evaluating the feasibility of establishing a Strategic Transformer Reserve for the storage, in strategically-located facilities, of spare large power transformers and emergency mobile substations in sufficient numbers to temporarily replace critically damaged large power transformers and substations. Strategically-located spare large power transformers and emergency mobile substations would diminish the vulnerability of the United States to multiple risks facing electric grid reliability.

E. Energy Security Evaluation

Section 61005 of the FAST Act directs the Secretary, in collaboration with the Secretary of State, to establish U.S. energy security valuation methods to ensure that energy-related actions that significantly affect the supply, distribution, or use of energy are evaluated with respect to their potential impact on energy security. This includes their impact on consumers and the economy; energy supply, diversity and resiliency; well-functioning and competitive energy markets; United States trade balance; and national security objectives.

²⁰ This includes federal, state, local and tribal authorities, the Electric Reliability Organization, regional entities, and owners, operators and users of the bulk-power system in the U.S.

III. WITNESS

The following witness has been invited to testify:

The Honorable Ernest Moniz
Secretary
U.S. Department of Energy