

DEPARTMENT OF ENERGY MANAGEMENT AND
MISSION PRIORITIES

HEARING
BEFORE THE
SUBCOMMITTEE ON ENERGY
OF THE
COMMITTEE ON ENERGY AND
COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED FIFTEENTH CONGRESS
FIRST SESSION

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DEPARTMENT OF ENERGY MANAGEMENT AND MISSION PRIORITIES

THURSDAY, OCTOBER 12, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENERGY,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:00 a.m., in room 2123 Rayburn House Office Building, Hon. Fred Upton (chairman of the subcommittee) presiding.

Present: Representatives Upton, Olson, Barton, Shimkus, Latta, Harper, McKinley, Kinzinger, Griffith, Johnson, Bucshon, Flores, Mullin, Hudson, Cramer, Walberg, Rush, McNerney, Peters, Green, Doyle, Castor, Sarbanes, Welch, Tonko, Loebsack, Schrader, Kennedy, Butterfield, and Pallone (ex officio).

Staff present: Ray Baum, Staff Director; Allie Bury, Legislative Clerk, Energy/Environment; Karen Christian, General Counsel; Kelly Collins, Staff Assistant; Jordan Davis, Director of Policy and External Affairs; Wyatt Ellertson, Research Associate, Energy/Environment; Adam Fromm, Director of Outreach and Coalitions; Ali Fulling, Legislative Clerk, Oversight & Investigations, Digital Commerce and Consumer Protection; Jay Gulshen, Legislative Clerk, Health; Tom Hassenboehler, Chief Counsel, Energy/Environment; Jordan Haverly, Policy Coordinator, Environment; Paul Jackson, Professional Staff, Digital Commerce and Consumer Protection; A.T. Johnston, Senior Policy Advisor, Energy; Ben Lieberman, Senior Counsel, Energy; Mary Martin, Deputy Chief Counsel, Energy & Environment; Katie McKeogh, Press Assistant; Brandon Mooney, Deputy Chief Energy Advisor; Mark Ratner, Policy Coordinator; Tina Richards, Counsel, Environment; Annelise Rickert, Counsel, Energy; Dan Schneider, Press Secretary; Peter Spencer, Professional Staff Member, Energy; Jason Stanek, Senior Counsel, Energy; Madeline Vey, Policy Coordinator, Digital Commerce and Consumer Protection; Hamlin Wade, Special Advisor, External Affairs; Andy Zach, Senior Professional Staff Member, Environment; Priscilla Barbour, Minority Energy Fellow; Jeff Carroll, Minority Staff Director; Jean Fruci, Minority Energy and Environment Policy Advisor; Rick Kessler, Minority Senior Advisor and Staff Director, Energy and Environment; Jourdan Lewis, Minority Staff Assistant; John Marshall, Minority Policy Coordinator; Jessica Martinez, Minority Outreach and Member Services Coordinator; Jon Monger, Minority Counsel; Dino Papanastasiou, Minority GAO Detailee; Alexander Ratner, Minority Policy Analyst; Tuley Wright,

Minority Energy and Environment Policy Advisor; and C.J. Young, Minority Press Secretary.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. The subcommittee on Energy and Power will now come to order, and the chair will recognize himself for 5 minutes for an opening statement.

First of all, welcome. Welcome, Mr. Secretary, it is great to have you here. And today's hearing is going to examine the Department of Energy's management and mission priorities under the leadership of Secretary Rick Perry, whom I am very pleased to welcome this morning for his first appearance before the subcommittee.

DOE performs essential nuclear security and national security missions. It plays a central role in ensuring the nation's domestic energy security and stewarding America's strategic energy interests in the international markets. It performs challenging cleanup operations to address its vast environmental and nuclear waste liabilities. And it provides key energy data, and supports foundational science and technological development to advance the benefits of all forms of energy and energy delivery to ensure the long-term security and prosperity of Americans.

The success of these diverse missions requires sound management and robust Secretarial authorities. Success also requires focused attention and budget resources to address the most pressing priorities in light of current and anticipated energy and security situations.

In this context, this hearing will help the committee gain insight into the Secretary's priorities regarding the Department. It also will help the Secretary understand our perspective on priorities we see as essential for DOE's missions going forward.

When it comes to energy policy, key priorities include DOE's role to ensure energy security, the reliable supply and delivery of energy, and the strategic value of our domestic energy resources and energy technologies.

The changing energy landscape in the U.S. has produced profound impacts on how our national security policies and its respective departmental missions should be oriented. Although we are in an era of domestic energy abundance, new threats to energy security have been growing and requiring more urgent attention.

In the previous Congress the Commission's work along these lines informed enactment of several bills to address emerging threats and to update the Department's energy policy and security priorities.

For instance, we enacted legislation to support modernizing SPR to improve its emergency response capability. We enacted other provisions for DOE to improve emergency preparedness for energy supply disruptions, protect energy infrastructure physical and cybersecurity, and prioritize energy security in federal decision-making. We also lifted the 1970s-era export restrictions on crude oil.

We are continuing in this Congress to move policies that enhance the delivery and supply of energy. We are also taking a comprehensive look at electricity market structure and recent developments and challenges for the way that we generate, transmit, and con-

sume electricity in the nation, with an eye toward updating the relevant laws governing our electricity sector.

With the able assistance of Vice Chair Joe Barton we will be looking at just what is necessary to ensure DOE is positioned for new energy and security challenges, all of these efforts aimed to update the nation's energy policies to ensure more secure, reliable, and affordable energy.

In recent weeks the Secretary has demonstrated DOE's nationally relevant roles regarding energy security and reliability. The series of devastating hurricanes hitting Texas, Florida, and Puerto Rico highlighted the vital nature of robust energy systems and the Department's emergency response capabilities. From all accounts, the Department served the emergency efforts well. And I look forward to learning what more DOE can do to serve the interests of affected areas, particularly Puerto Rico.

The Secretary also recently demonstrated he is willing to take action in the area of electricity market regulations. As you know, this is an area that the Energy Subcommittee is currently very engaged in, with seven hearings thus far under our belt, including two last week. While I reserve judgment on the policy solutions, the fact that the Secretary stepped into this complicated debate reflects the current need to have a broader conversation about the functioning of the nation's electricity markets.

Whether it be interventions through the tax code or through federal and state environmental policies and mandates, all have played a complicated role in the market-driven economic outcomes currently affecting the generation profile of the power grid. Reliability and resiliency are important attributes to begin the conversation, but none of these issues can be addressed in a vacuum, as economics, technology, security, and how to address other externalities such as environmental attributes all will have a role to play. I look forward to working with DOE and FERC on these issues as we begin to oversee the process.

The rise of cyber, the transformation of power generation, the regulatory challenges that continue to affect the cost and availability of all energy, all require a strong voice on national energy policy. That is what Congress envisioned for DOE 40 years ago, and it is still important today.

I yield to my friend and colleague, the vice chair of the subcommittee, Mr. Rush from Illinois, 5 minutes.

He switched parties overnight. It is the front page of Politico. The Ranking Member. Though I know he would probably prefer to be Vice Chair.

[The opening statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

Today's hearing will examine the Department of Energy's Management and Mission Priorities under the leadership of Secretary Rick Perry, whom I'm very pleased to welcome this morning for his first appearance before the Committee.

DOE performs essential nuclear security and national security missions. It plays a central role in ensuring the nation's domestic energy security and stewarding America's strategic energy interests in international markets. It performs challenging cleanup operations to address its vast environmental and nuclear waste liabilities. And it provides key energy data, and supports foundational science and

technological development to advance the benefits of all forms of energy and energy delivery—to ensure the long-term security and prosperity of Americans.

Success of these diverse missions requires sound management and robust Secretarial authorities. Success also requires focused attention and budget resources to address the most pressing priorities from current and anticipated energy and security situations.

In this context, today's hearing will help the Committee gain insight into the Secretary's priorities regarding the Department. It also will help the Secretary understand our perspective on priorities we see as essential for DOE's missions going forward.

When it comes to energy policy, key priorities include DOE's role to ensure energy security, the reliable supply and delivery of energy, and the strategic value of our domestic energy resources and energy technologies.

The changing energy landscape in the United States is transforming how our national energy policies and respective departmental missions should be oriented. Although we are in an era of domestic energy abundance, new threats to energy security have been growing and requiring more urgent attention.

The Committee's work along these lines informed enactment of several bills in the previous Congress to address emerging threats and to update the Department's energy policy and security priorities.

We enacted legislation to modernize the Strategic Petroleum Reserve and improve its emergency response capability. We enacted provisions for DOE to improve emergency preparedness for energy supply disruptions, protect energy infrastructure physical and cyber security, and prioritize energy security in federal decision-making. We also lifted the 1970's-era export restrictions on crude oil.

We are continuing in this Congress to move policies that enhance the delivery and supply of energy. Earlier this year Mr. Rush and I passed H.R. 3050, which reauthorizes the Department of Energy's State Energy Program to help states prepare for hurricanes, earthquakes, floods, fuel supply disruptions, physical and cyber threats, and catastrophic events. With the able assistance of Vice Chairman Joe Barton, we will be reviewing just what is necessary to ensure DOE is positioned for new energy and security challenges.

We're also taking a comprehensive look at electricity market structure and recent developments and challenges for the way we generate, transmit, and consume electricity in the nation—with an eye towards updating the relevant laws governing our electricity sector.

In recent weeks, the Secretary has demonstrated DOE's nationally relevant roles regarding energy security and reliability.

The series of recent devastating hurricanes highlighted the vital nature of robust energy systems, and the department's emergency response capabilities. From all accounts, the department served the emergency efforts well, and I look forward to learning what more DOE can do to serve the interests of affected areas, particularly Puerto Rico, going forward.

The Secretary also recently demonstrated he is willing to take action in the area of electricity market regulations. As you know, this is an area that the Energy Subcommittee is currently very engaged in, with seven hearings thus far under our belt, including two last week on this very issue.

While I reserve judgment on the policy solutions, the fact that the Secretary stepped in to this complicated debate reflects the current need to have a broader conversation about the functioning of the nation's electricity markets.

Whether it be interventions through the tax code or through federal and state environmental policies and mandates, all have played a complicating role in the market driven economic outcomes currently affecting the generation profile of the power grid. Reliability and resiliency are important attributes to begin the conversation, but none of these issues can be addressed in a vacuum, as economics, technology, security, and how to address other externalities such as environmental attributes all will have a role to play. I look forward to working with the DOE and the FERC on these issues as we begin to oversee this process.

The rise of cyber threats, the transformation of power generation, the regulatory challenges that continue to affect the cost and availability of energy, all require a strong voice on national energy policy. This is what Congress envisioned for DOE 40 years ago, and it is still important today.

OPENING STATEMENT OF HON. BOBBY L. RUSH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. RUSH. No, not for Vice Chair, Mr. Chairman, I wouldn't switch parties just to become a Vice Chair. You know that.

Mr. Chairman, I want to thank you so much for holding this long overdue hearing on the Department of Energy's missions and management priority.

Mr. Secretary, you have the distinction of being the first agency head under the current Administration to actually come before this subcommittee as we sit here. So I also want to thank you for gracing us with your presence here today.

Mr. Chairman, as we know, our budget proposal highlights the priorities within an agency. And I must say that I have many, many concerns with the FY 2018 budget proposal put forth by this Administration. For starters, they are demonstrating proposed cuts to some of the most important federal investments in clean energy programs, power unit operations, next generation energy technologies, and cyber attack management for energy systems. The President's DOE budget proposal would slash the Office of Energy Efficiency and Renewable Energy by 70 percent while eliminating the Weatherization Assistance Program completely.

Mr. Secretary, as a former governor I am sure you understand that getting rid of a program that benefits so many low income families nationwide is a non-starter for me and many members of Congress on both sides of the aisle. Recently, Mr. Chairman, the Advanced Research Projects Agency-Energy, or ARPA-E, will also be terminated in the President's budget, although it makes absolutely no sense to eliminate a program that spurs innovative energy technologies that can lead to major advancements in how we produce, store, and consume energy.

And, frankly, Mr. Chairman, ARPA-E led to \$1.8 billion in private funding and launched more than 50 new companies since its inception. Additionally, the Office of Science, with funds in 17 national laboratories, will face a \$1 million, or 17 percent, decrease from FY 2017 levels, mainly impacting the world's largest single investment in basic research.

Mr. Chairman, while I am concerned regarding the diversity and leadership in these labs, and in the agency itself for that matter, I cannot support the cuts proposed in the President's budget. The budget proposal will even cut fossil energy research by more than half, even as the President is so supportive on the idea of saving coal. Mr. Chairman, instead of trying to tip the field in favor of any specific industry, as the most recent ill-advised DOE number appears to try to do, it makes more sense to invest in the technology of the future to create jobs at home which also can be sold overseas.

Mr. Chairman, I look forward to hearing Secretary Perry's vision for the 21st Century energy grid, and if he agrees with the majority of stakeholders that we have heard from during our entire powering American series. Hearing these experts who represented energy technology companies, RTOs, and consumer advocate groups, all agree that customer behavior is a driving force in shaping what the grid will look like in the future.

These consumer-driven trends include more control over their energy use; a greater demand for cleaner, renewable sources of energy to compete with traditional fossil fuels; an increase in discriminate generation, battery storage, and demand response resources; more energy efficiency initiatives; as well as a demand for lower energy costs.

So, Mr. Chairman, I really look forward to engaging Secretary Perry on his vision for this Department that he wanted to infamously abolish. And with that, I yield back the balance of my time.

Mr. UPTON. The gentleman's time has expired.

The Chair will recognize the Chairman of the full Energy and Commerce Committee, the congressman from Oregon, for an opening statement, Mr. Walden.

OPENING STATEMENT OF HON. GREG WALDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. WALDEN. Thank you, Mr. Chairman.

Mr. Secretary, welcome to the Energy and Commerce Committee. We are delighted to have you here to share your thoughts and views with us and answer our questions. And we appreciate your leadership.

I understand that DOE held a ceremony yesterday to celebrate its 40th birthday as a cabinet agency. I think you would have to agree, lots has changed in this country, in the world, and in the world since Congress created the Department of Energy, especially in the national security and energy security space, where DOE provides critical functions for the country.

While the domestic and international energy posture is substantially different from what it was in the 1970s, I do not believe the importance of DOE's role serving the nation and public interest has diminished.

This past August, Secretary Perry joined me at an energy roundtable with local officials and energy leaders at McNary Dam, on the mighty Columbia River in Umatilla County, Oregon, which produces power for the Bonneville Power Administration. Of course, Secretary Perry could not leave Umatilla County without one of our famous Hermiston watermelons, which I know you enjoyed, the best in the world. I believe Secretary Perry also left with a greater appreciation of the tremendous zero carbon emitting power resource we have that is helping grow the economy in Oregon and throughout the Northwest. And I think you learned Texas wasn't the only big, open, wide space around that poses difficulties getting to as we crisscrossed the great Northwest.

The next day I had the pleasure of accompanying the Secretary to DOE's Pacific Northwest National Laboratory and then to the Hanford Site, just up the Columbia River from my own district in Oregon.

A couple of observations from that visit are pertinent for today. First, it was evident that abundant energy was critical to the historical success of Hanford's industrial operations, which built nuclear reactors and produced the plutonium vital to winning World War II, and later maintaining the nation's nuclear deterrent program.

Second, Hanford and its cleanup operations led to advances in engineering practices, research and development programs, and scientific activities that are necessary for the site's safe and secure operations. And I was pleased to see the improvements being made in the cleanup there. That hadn't always been the case, and it seems like they are finally on track.

These advances led to the development of a world-class national laboratory. And today, the Pacific Northwest National Lab, in collaboration and partnership with DOE's 16 other national laboratories that are spread out in remote places around the world, or country, provide scientific and technical breakthroughs to meet our national security and energy security needs, from securing our electric grid to advancing storage technologies.

So, as we examine the DOE management and mission priorities today, we build on the work that I have asked Vice Chairman Barton to undertake with you to look at what a 21st Century energy department should look like, we should keep in mind the benefits of the interconnected nature of the Department's missions. But these missions across DOE's enterprise can be expensive and difficult to manage. And so, it is the responsibility of the Secretary and this committee and Congress to ensure the Department is appropriately aligned to perform these missions in a cost-effective manner, and to the maximum benefit of the taxpayer.

And as Chairman Upton has indicated, the energy threats today are not the same as the threats of the 1970s, but they remain significant. The opportunities do as well. This committee will work in the coming months and through this Congress to ensure the Department's organization and missions are aligned with the energy security challenges of our generation.

And as I said, at my direction the vice chairman has already started to facilitate, in coordination with the Energy subcommittee, work to ensure that DOE's resources are focused on the core missions of nuclear and energy security, environmental remediation, mission-enabling science and R&D programs. At the same time, the committee will be examining expired DOE authorizations, many of which expired over a decade ago, to ensure more fully appropriate program alignment.

I look forward to your testimony, Mr. Secretary, and it will be helpful to both sides in our work here in the Energy and Commerce Committee. I would also like to ask you to address the recent questions that have arisen regarding travel expenditures as part of your discussion with our committee today.

In closing, I look forward to working closely with DOE and my colleagues as well as we ensure the agency is positioned appropriately for the energy security challenges that lie ahead. And, again, we are delighted to have you here today, Mr. Secretary. I have enjoyed working with you along the way and look forward to your testimony and the answers to our questions.

And with that, Mr. Chairman, I yield back the balance of my time.

[The statement of Chairman Walden follows:]

PREPARED STATEMENT OF HON. GREG WALDEN

Let me welcome Secretary Perry to his first appearance before the Energy and Commerce Committee. I understand that yesterday DOE held a ceremony to celebrate its 40 years as a cabinet agency. A lot has changed in this country and in the world since Congress created the department—especially in the national security and energy security space, where DOE provides critical functions for the country.

While the domestic and international energy posture is substantially different from what it was in the 1970s, I do not believe the importance of DOE's role serving the national and public interest has diminished.

This past August, Secretary Perry joined me at an energy roundtable with local officials and energy leaders at the McNary Dam, on the Columbia River in Umatilla County, Oregon, which produces power for the Bonneville Power Administration. Of course, Secretary Perry could not leave Umatilla County without a famous Hermiston watermelon—the best in the world. I believe Secretary Perry also left with a greater appreciation of the tremendous, zero-carbon-emitting power resource we have that's helping grow the economy in Oregon and throughout the Northwest.

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A couple of observations from that visit are pertinent for today: First, it was evident that abundant energy was critical to the historical success of Hanford's industrial operations, which built nuclear reactors and produced the plutonium vital to winning World War II and later maintaining the nation's nuclear deterrent program.

Second, Hanford's success, and subsequent cleanup operations, led to advances in engineering practices, research and development programs, and scientific activities necessary for the site's safe and secure operations. These advances led to the development of a world-class national laboratory. Today, the Pacific Northwest National Laboratory, in collaboration and partnership with DOE's 16 other national laboratories, provide scientific and technical breakthroughs to meet our national security and energy security needs—from securing our electric grid to advancing storage technologies.

As we examine the DOE management and mission priorities today, we should keep in mind the benefits of the interconnected nature of the department's missions. But these missions across DOE's enterprise can be expensive and difficult to manage. And so, it is the responsibility of the secretary and the Congress to ensure the department is appropriately aligned to perform these missions in a cost-effective manner, and to the maximum benefit of the taxpayer.

As Chairman Upton has indicated, the energy threats today are not the same as the threats of the 1970s, but they remain significant. This committee will work in the coming months and through this Congress to ensure the department's organization and missions are aligned with the energy security challenges of today.

At my direction, Vice Chairman Barton has already started to facilitate, in coordination with the Energy Subcommittee, work to ensure DOE resources are focused on the core missions of nuclear and energy security, environmental remediation, and mission-enabling science and R&D programs. At the same time, the committee will be examining expired DOE authorizations—many of which expired over a decade ago, to ensure more fully appropriate program alignment.

I look forward to your testimony, Secretary Perry, it will be helpful to both these efforts. I'd also like for you to address the recent questions that have arisen regarding your travel expenditures. In closing, I look forward to working closely with DOE and my colleagues as we ensure the agency is positioned appropriately for the energy security challenges that lie ahead.

Mr. UPTON. The gentleman yields back.

The Chair will recognize the Ranking Member of the Energy and Commerce Committee, the gentleman from New Jersey, Mr. Pallone for an opening statement.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Mr. Chairman. And I welcome Secretary Perry to the committee. We are pleased to finally have you here. After all, it is now the middle of October. And you are actually the first cabinet member we have had before us this year. So I hope that this is the start of a trend.

Mr. Secretary, there is certainly a lot for us to discuss today, particularly your recent proposal to upend competitive electricity markets by providing unduly preferential rates to coal and other base load generation. The substance of that proposal has serious flaws, in my opinion. Under the guise of a crisis of grid reliability, this proposal props up coal and nuclear generation with the goal of protecting fuel-secure plants that have 90 days of fuel stored on site.

The DOE's own grid report issued earlier this year stated that electricity markets, "currently function as designed to ensure reliability and minimize the short-term costs of wholesale electricity. Furthermore, a recent study of major electricity outages found that between 2012 and 2016, less than a fraction of 1 percent were due to fuel supply problems. So the majority of outages are actually caused by severe weather impacting the distribution system, a problem exacerbated by climate change."

So this leads me to question the motivation behind the proposal. And to that end I am sending you a letter today asking for a detailed accounting of the process you used to develop this proposal, including the records of the meeting you and your staff had and the taxpayer funds spent developing a proposal that seems directed at helping a select group of favored energy sources.

It is an ironic proposal, considering that EPA Administrator Pruitt stated as part of his announcement in rolling back the Clean Power Plan, "that regulatory power should not be used by any regulatory body to pick winners and losers." But, Mr. Secretary, that is exactly what you are doing here. You are distorting the market, damaging the environment, and delivering preferential treatment to favored industries. And at the end of the day, killing off competitive electricity markets just to save generation assets that are no longer economical will lead to higher prices to consumers.

If you are truly concerned about reliability and resilience then the discussion we need to have should center around the nearly 90 percent of U.S. citizens in Puerto Rico and the U.S. Virgin Islands who are without power. The electricity grid in Puerto Rico and much of the U.S. Virgin Islands is badly damaged, and we must rebuild them to be stronger and more resilient than before Maria struck. We can't simply replace outdated infrastructure with the same materials and the same technologies as we did after Hurricane Sandy.

And this is an opportunity to modernize the grid in these areas so they are more prepared for the next major storm that will inevitably strike. And all of this requires congressional action. And the Federal Government must now act so Puerto Rico and the Virgin Islands can rebuild stronger.

This morning, after seeing the President's latest Tweet, I am concerned that the President simply does not understand the scope of

the devastation in Puerto Rico and will follow through on his threat to remove FEMA from the island well before it actually has recovered.

And, finally, I know Chairman Walden mentioned this a little earlier, I continue to be concerned by the amount of money this Administration is spending when it comes to non-commercial travel for members of the cabinet and his staff. When the reports first came to light regarding your colleagues at HHS and EPA, I asked the inspector general at those agencies to conduct an investigation, and they agreed. And those investigations are taking place.

But today, in light of the \$50,000 you spent in taxpayer dollars for non-commercial travel I am making a similar request to the Energy Department's Inspector General. And this is of particular concern, given the extreme budget cuts that the Trump administration proposed for the upcoming fiscal year, including successful programs that help everyday Americans. I know that Chairman Walden mentioned it today, but he also mentioned it at one of our markups earlier this week, that this investigation is something that the committee will look into. So I appreciate that, Mr. Chairman.

So, Mr. Secretary, I appreciate your willingness to testify before our committee today, and hope to work with you going forward. This type of hearing is critical to making our government work better. And I hope we will see you here again, and hope we will see some of the other cabinet secretaries and agency representatives as well.

Thank you. I yield back.

Mr. UPTON. The gentleman yields back.

At this point, we will welcome the Secretary's testimony. It is made part of the record in its entirety, and we will let you summarize it. And following that, we will do questions from the dais.

So, welcome again. Thank you. Turn that mic on.

**STATEMENT OF THE HONORABLE RICK PERRY, SECRETARY,
U.S. DEPARTMENT OF ENERGY**

Secretary PERRY. Ranking Member Rush, I am privileged to be in front of you and the other members of the Committee. I am proud to be able to represent this Administration in front of you. Proud to represent the Department of Energy. It has been a couple of months since I appeared before Congress, and I want to take this opportunity to highlight the progress that we made towards achieving our goals at DOE. I will make every to be brief, sir, as we go forward with my oral comments, and respectfully request that my full remarks be inserted in the record.

I would like to start this morning by mentioning how refreshing it is to see a subject, energy policy, that has so much bipartisan support in, in this Congress. This committee has been a strong partner to the Department of Energy over the course of the years. And I look forward to working together with you to enhance our energy security and further our national interests.

Since taking office, my priorities for DOE have focused on reorienting the Department of Energy on its core missions: ensuring American energy security; spurring innovation; enhancing national security; and addressing the obligation of legacy management and

nuclear waste. We are making solid progress towards these goals, but there is much to be done. There is a distinct role for Congress to play in supporting our work, and I look forward to our ongoing cooperation.

Our work together on energy and security policy is paramount for America to exert leadership necessarily both here at home and abroad. Let me talk for a moment, if I could, about America's energy security.

America's economic and national security depends on our energy security. We are putting the United States in a more stable and secure position to address the domestic energy needs by establishing reasonable and reliable energy policies. We realize that energy security begins at home. We have taken concerted steps to address years of insufficient action regarding grid resilience and reliability.

The Department addresses not only manmade challenges to our grid's reliability, but those of national disasters as well. The Department has played a critical role in the coordinated federal response to recent natural disasters. We have been in almost daily contact with our industry partners since Hurricane Harvey began to threaten the Gulf Coast. And that coordination continues till through to today.

We currently have more than two dozen technicians from DOE and the Western Area Power Administration in the Virgin Islands. We will have almost 30 in Puerto Rico in the coming days. We will continue to support the work to restore power in the Virgin Islands and Puerto Rico.

Not only are we dedicated to our recovery efforts in the south and the east, but we are also turning our focus to the west. We are working closely with our partners in California who are now facing some historic impacts of these recent wildfires.

And I would like to switch over to and speak about innovation just a moment, if I could, and DOE's role in innovation and advancing science, which is a key part of our mission.

As Chairman Walden mentioned, we had our 40th anniversary of the creation of DOE yesterday, 40 years of energy innovation. And that is a perfect description of what DOE has been doing since its inception in 1977. The energy security we Americans enjoy and take for granted would not have been possible without American ingenuity and clear focus on innovation, Leader Rush, as you, as you point to in your remarks.

I am very proud of the advancements that DOE research and development has spurred, and much of it from our national labs system. Our national labs have put a distinctly American stamp on the last century of science. In fact, nearly a third of all Nobel Prize-winning work in the fields of physics and chemistry are DOE associated or sponsored. And that is a pretty impressive show from my perspective of the investment that you all have made in the labs in the previous years.

Let me switch over to the national security issue through nuclear science. And I want to touch just briefly what I think is an incredibly important issue facing our Department today, and that is nuclear security. As a member of the National Security Council I have a unique and a vital role in ensuring our nation's security. And I undertake these responsibilities with the utmost gravity.

For more than 70 years a cornerstone of our national security strategy has been a credible and reliable nuclear capability. This strategy has served the United States and our allies well. Our work on non-proliferation is equally important. The Department's national security—or, excuse me, National Nuclear Security Administration—is a leader in our nation's efforts to ensure nuclear weapons and materials do not fall into the hands of rogue regimes or terrorists. In short, we seek to deny nuclear capability to those who are not friendly to the United States while reinforcing the America idea that we are a steadfast ally to peaceful nations.

Let me shift over to legacy management, if I may, and the nuclear waste issue. The national security mission comes with a final responsibility, and it is the Department's environmental management side. Every secretary of energy upon confirmation is met with the size and the scope of the Department's cleanup mission. It is staggering in its scope and its size. It is our solemn obligation to clean up the environmental legacy of the weapons programs, the sites, the communities that helped us win World War II and the Cold War.

My direction has been to put DOE on a final path to achieving the cleanup mission across our enterprise, more safe, more streamlined, sooner, and at less cost to taxpayers. There is more work to be done. And we will need Congress' assistance in order to achieve our environmental, our environmental management goals in streamlining state regulations.

The Department of Energy from my perspective has another obligation, a moral obligation to advance solutions for the long-term disposal and storage of spent nuclear fuel and high-level waste. The American people deserve a solution to this problem, and we can no longer kick the can down the road.

I would like to commend this committee for the leadership on this issue. This committee's bipartisan approval of a nuclear waste policy bill by an overwhelming 49 to 4 vote stands as a clear example to the American people that we can work together and look forward to finally finding a path forward.

Mr. Chairman, if I may, to address Chairman Walden's issue of this travel issue that has cropped up and been in the media and what have you, and I want to address it straight on. As a former governor of a fairly good-sized entity, I totally understand the idea of having oversight on travel to spend our money appropriately, thoughtfully.

I was the Agriculture Commissioner of the State of Texas for an 8-year period of time. Southwest Airlines does not go to Dumas, Texas. And so, there are multiple ways you can get there. You can drive. Boy, it takes a while. I guess you could take the bus. I suppose you could even hitchhike. You can get there, but you are not going to get much work done.

And the point is, a lot of these jobs are different from the standpoint—and DOE is kind of unique in that sense, and when Leslie Groves was choosing the places to start national labs and to do the Manhattan Project he wanted to go places that were pretty difficult to get to. Hanford is one of those. And when you think about where our national labs are and the places that I have been required to go, and will continue to go to do my job.

And I might add, during my confirmation hearing in front of senators and then, obviously, going and speaking to a number of you, almost every member invited me to come to their district, to come see what you have in your district, to see what you have in your district. And I am obliged to do that. And so it is going to require travel.

One place I went, Mr. Pallone, and this is in the report that you have, I was invited and accepted to go to a mine that is dealing with rare earth minerals in Hazleton, Pennsylvania, with another stop the next day to spend in the entirety of that day in Portsmouth, Ohio, with the senator. And the point is it is really difficult for us to have gotten there without taking that private aircraft to Hazleton. You can get there. I am not going to tell you you can't. But to conduct the business, and I think we have looked at this closely, we have been thoughtful about how we did it.

I am a frequent flyer on Southwest Airlines and United. And the last time I was on United I think I was on seat 10B. And there is nothing wrong with seat 10B. It is a good place to be. It gets there about the same time as 1A. But the point is I travel a lot to do my job. I do it in a way that I think is thoughtful, with the taxpayers in mind. I did it for 30 years as a House member, as the Agriculture Commissioner, as the Governor of Texas, and now as the Secretary of Energy. And I am going to continue to do my job. I am going to make my commitment to you that I am going to try to do it in the most thoughtful and the most reasonable way to do that, but realizing that from time to time if I am going to be in those places, and we are going to be there in a timely fashion, we may have to do it in a way that does expend some, expend some taxpayers' dollars.

But I hope at the end of that process they can look back and say, you know what, these folks did a good job of expending our dollars and getting the job done. And I think that is really the goal here.

So let me just finish by saying to each of you thank you for allowing me to come and to inviting me to share my vision of what DOE's opportunities are in the future. I look forward to working with every member of this committee. Gene Green and I have been working together now for coming on long time, 35 years or so. And we will continue to be a partner with each of you as we find the places that we can serve the American people.

And, again, thank you for your service. Thank you for your standing up and saying that you are willing to sacrifice much to serve this country. Thank you, sir.

[The prepared statement of the Honorable Rick Perry follows:]

**Testimony of Secretary Rick Perry
U.S. Department of Energy
Before the
U.S. House Committee on Energy and Commerce
Subcommittee on Energy**

October 12, 2017

Chairman Upton, Ranking Member Rush, and Members of the Committee, it is an honor to appear before you today on behalf of the Administration and the Department of Energy ("the Department" or "DOE").

It's been a couple of months since I last had the opportunity to testify before Congress. I thought it would be in order today to inform you of the goals we set once I was confirmed, and the progress we've made towards achieving those goals.

Upon confirmation, and during my prior testimony before both House and Senate committees, I outlined several key priorities of DOE.

Put succinctly, these priorities included refocusing the Department of Energy on its core missions:

- Promoting America's energy security;
- Spurring innovation;
- Reducing regulatory burden;
- Restoring the nuclear security enterprise and enhancing national security through the military application of nuclear science; and
- Addressing the obligation of legacy management and nuclear waste.

I'd like to discuss these goals, and our progress towards achieving them. I will say that while we are making solid progress, there is much left to be done. There is a distinct role for Congress in helping us achieve these important goals, and I look forward to our ongoing dialogue.

In my travels during my seven months as Secretary, I have seen firsthand the scientific and technical genius we have within DOE and at our national laboratories and universities, nuclear waste sites and other facilities. In particular, I have visited the Idaho, Los Alamos, Pacific Northwest, Oak Ridge and National Energy Technology (PA and WV) National Labs. I have been to the Hanford, Waste Isolation Pilot Plant (WIPP), Portsmouth Gaseous Diffusion Plant, Nevada National Security, and Yucca Mountain sites.

I have participated in the G-7 Energy Ministers Meeting in Italy, visited the Fukushima site in Japan, led the U.S. delegation to the Clean Energy Ministerial in China, participated in the International Atomic Energy Agency meeting in Austria, and traveled to Mexico for a bilateral meeting. At each of these conferences, and at meetings in Washington, DC, I have held numerous bilateral meetings with national energy ministers and other foreign government leaders. My message has been clear. America is open for business and we are a willing partner in

making this world a safer and more prosperous place for everyone. Our leadership on early-stage energy technology research and energy security policy is sorely needed, and we intend to seize every opportunity to advance freedom and opportunity for all Americans – and all our fellow travelers on this amazing planet.

FOCUSING ON AMERICA'S ENERGY SECURITY:

There could not be a more exciting time to be the Nation's Secretary of Energy. America is at the beginning of an energy Renaissance.

For forty years, the United States has set a goal of energy independence. In fact, this goal, and the price shocks of the 1970's, gave rise to the Department of Energy under the Carter Administration.

Under this Administration, we have set a farther-reaching goal. We want the United States to achieve not just energy independence, but energy dominance.

This goal has impacts domestically, and across the globe.

Let me put the 'Energy Renaissance' in context for you:

- Oil production is expected to hit a record level next year, exceeding levels we haven't seen since 1970.
- The United States is set to become a net exporter of natural gas for the first time in 60 years, with our trading partners in Asia, the Caribbean, Eastern and Western Europe being the beneficiaries of this boom.
- Coal production has risen 14% in 2017, and coal exports are up 55% compared to 2016 levels at that time.
- Wind and solar power now account for 10% of our national electricity capacity;
- The energy we use today is cleaner and emissions are falling.

Establishing reasonable and reliable energy discovery, development and delivery policies is putting the United States in a more stable and secure position to attend to its domestic needs.

Protecting Grid Resiliency

Energy security begins at home. America's energy dominance depends on a reliable, resilient electric grid powered by a diverse mix of generation resources that help mitigate disruptions and enable rapid response when disruptions occur.

This diverse resource mix includes traditional baseload generation with on-site fuel storage that can withstand fuel supply disruptions caused by natural and man-made disasters. But the resiliency of the electric grid is threatened by the retirements of these fuel-secure traditional baseload resources, including coal and nuclear.

Earlier this year, I asked the staff of the Department to study the electricity markets and electric reliability. This is what I learned from their Report. Thousands of megawatts of fuel-secure generation capacity, including environmentally compliant coal and emission-free nuclear resources, have been prematurely retired before reaching full life expectancy or will be placed

into retirement soon. If we lose this capacity, we jeopardize the resilience of the grid—specifically the ability of the grid to bounce back in times of major fuel supply disruptions.

As an example, the Report looked at the recent Polar Vortex—a band of very cold weather spread across much of the eastern United States in 2014. What happened is a lesson and a warning for us all. As the Committee well knows, the Polar Vortex created record-high winter peak electric demand for heating and equally high demand for natural gas for residential heating. The market operator for much of the northeast, PJM Interconnection, struggled to meet demand for electricity because a significant amount of generation was not available to run at a time when natural gas was in equally high demand for home heating. The loss of generation capacity could have been catastrophic, but a substantial number of coal plants that were scheduled for retirement were dispatched to meet the need for electricity. Likewise, the Staff Report noted, nuclear power plants “performed extremely well during the Polar Vortex.”

Sixty-five million people within the PJM footprint could have been affected if these traditional baseload units were not available. The 2014 Polar Vortex was a warning that the current and scheduled retirements of these fuel-secure units could threaten the reliability and resiliency of the electric grid. In America, no one should have to choose between keeping their family warm and keeping the lights on. We need to be ready for the next Polar Vortex or any other shock to the system that could come our way at any time.

The DOE Staff Report warns that the continued closure of traditional baseload power plants, especially coal and nuclear, means that “States and regions are accepting increased risks that could affect the future reliability and resilience of electricity delivery for consumers in their regions.” In light of this assessment, the DOE Staff Report calls for prompt action. One of the DOE Staff Report’s chief policy recommendations is to correct distortions in price formation in the FERC-approved organized markets. Specifically, the Report states, FERC should “expedite its efforts” to improve energy price formation in centrally organized wholesale electricity markets.

In light of this recommendation, I recently exercised my authority under section 403 of the Department of Energy Organization Act by making a concrete proposal to FERC for pricing reform in the Commission-approved organized markets. Under the proposal, FERC would direct the organized markets to fully value the grid resiliency benefits provided by traditional baseload resources with on-site fuel storage capability.

In plain English, fuel security is valuable—to families, businesses, and national security. I asked FERC to change the market rules to make sure that fuel-secure generation is valued for what it is worth to our Nation – not forced into early retirement leaving the grid at risk during the next disaster. FERC has been studying these issues for years, and DOE’s own study confirms the need for prompt action.

Our proposal has attracted much interest and support. In particular, I would like to note the September 29th statement of Ralph Izzo, Chairman, President and CEO of the New Jersey-based Public Service Enterprise Group in responding to my proposal to FERC. “PSEG has long supported a national policy that would recognize the valuable benefits that nuclear power provides to our customers. We applaud Secretary Perry’s leadership and sense of urgency in announcing this initiative today to help ensure the viability of nuclear energy by recognizing the contribution it provides to the reliability and resiliency of the grid. This is an important step

toward helping ensure consumers can continue to benefit from nuclear power,” Chairman Izzo said.

This proposal is just a first step in seeking to ensure that we truly have an energy policy that first and foremost protects the interests and needs of the American people. Following the recommendations of the Staff Report, the Department is continuing to study these issues and, if necessary, will be prepared to make a series of additional recommendations to improve the reliability and resiliency of the electric grid.

For years, our fuel-secure generation resources have been strangled by regulation and squeezed by pricing rules that under-value grid security. These resources must be revived, not reviled. I am taking and will continue to take action as needed to keep our diverse generation mix in place.

Our electricity supply powers our economy, lights our streets, heats our homes, and supports our way of life. As Secretary of Energy, I will not sit idly by when I see a threat to that reliability, or a reasonable course of action that is within my authority to mitigate it.

FOCUSING ON INNOVATION:

The position of energy security we Americans enjoy—and take for granted—would not have been possible without American ingenuity, and a clear focus on innovation. I am very proud of the advancements that DOE research and development has spurred. I am confident that legacy of innovation will only grow in the coming years.

Despite all the rules, red tape, misguided policies and regulations that have emanated from Washington, DC over the past 40 years, there have been two bright spots that have continued to drive American energy innovation: DOE-funded R&D, including work at the Department’s national laboratories, and the dedicated workforce in each of the Department’s program offices.

DOE’s laboratories have engaged in cutting-edge research that expands the frontiers of scientific knowledge and improves the lives of millions. While most of this innovation is in the energy field, DOE also collaborates with the health sector in conducting analytical research—including a recently launched cooperative endeavor funded by the Department of Veterans Affairs to apply our supercomputing ability to improve the quality of health care for our nation’s veterans. DOE laboratories have contributed some funding to this effort.

I have had the pleasure of personally visiting 5 of our National Labs, and I look forward to visiting each of these amazing facilities during my time as Secretary. In short, our National Labs have put a distinctly *American* stamp on the last century of science. We support better coordination, communication, and collaboration between the Labs, and DOE program offices will continue to push the envelope in energy research and development.

Fossil Energy Research and Development

The FY18 Budget focuses \$280 million on cutting-edge fossil energy research and development to further our energy security, advance strong domestic energy production, and develop innovative clean coal technologies.

Energy Efficiency and Renewable Energy

The FY 2018 Budget funds \$636 million to support research at our national laboratories to drive energy innovations in renewable energy, next-generation transportation, and energy efficiency.

Nuclear Energy

DOE remains committed to providing domestic sources of clean energy and enhancing our national security. The FY 2018 Budget provides \$703 million for Nuclear Energy to support early-stage research and development and infrastructure to the continued innovation of new and improved nuclear energy technologies.

Electricity Delivery and Energy Reliability

DOE serves as the lead agency for Emergency Support Function 12 (ESF-12) under the National Response Framework. As the lead for ESF-12, DOE is responsible for facilitating the restoration of damaged energy infrastructure. This is a top priority function of the Department.

During Hurricanes Harvey, Irma and Maria, and the weeks following these unfortunate events, we have worked with industry and Federal, state, and local partners to facilitate response and recovery. At the height of our recovery efforts after Harvey and Irma, our industry partners had more than 60,000 personnel from all 50 states in the field.

Currently, we are involved in the restoration efforts in the Virgin Islands and Puerto Rico. More than two dozen technicians from DOE and the Western Area Power Administration have been in the Virgin Islands, restoring critical power supplies to hospitals, airports and ports, and we have additional personnel in Puerto Rico. We will continue to support the work needed to restore power to the Virgin Islands and Puerto Rico until the job is finished.

Regardless of the event that threatens to disrupt the electric power system, DOE and its dedicated partners in private industry will be there to help.

Protecting the electric grid also entails dealing with man-made threats.

The Budget also includes \$42 million for energy delivery system cybersecurity in the Office of Electricity Delivery and Energy Reliability, with a renewed focus to take steps to make a difference within two years in the cybersecurity of our Nation's power grid. Our budget funds early stage activities that improve cybersecurity and resilience of the grid in order to harden and evolve critical grid infrastructure. We focus on early stage R&D at national laboratories to develop the next generation control systems and components, devices and systems with engineered-in cybersecurity features; and we fund a new activity to develop a continuous monitoring capability that will significantly increase our awareness and ability to prevent and respond to these types of events.

Additionally, all power generation, regardless of the fuel, relies on the power grid to delivery electricity to our homes and businesses around the nation. The Budget provides \$120 million to support research and development at the national laboratories to develop technologies that strengthen, transform, and improve energy infrastructure so that consumers have access to reliable, secure, and clean sources of energy.

In addition to R&D, the Department examined grid reliability and resiliency in detail in the *Staff Report on Electricity Markets and Reliability* made public in August. We continue to engage FERC, NERC and other stakeholders on these issues.

REDUCING REGULATORY BURDEN:

On January 30, 2017, the President issued EO 13771, which directed agencies to be prudent and financially responsible in the expenditure of funds, from both public and private sources, and to alleviate unnecessary regulatory burden placed on the American people. In addition to the management of the direct expenditure of taxpayer dollars through the budgeting process, it is essential to manage the costs associated with the governmental imposition of private expenditures required to comply with Federal regulations.

Subsequently, on February 24, 2017, the President issued EO 13777, which directed agencies to lower regulatory burdens by implementing and enforcing regulatory reform and to establish Regulatory Reform Councils chaired by a Regulatory Reform Officer (RRO) to oversee implementation of EO 13777 at the agency. DOE has established a Regulatory Reform Officer to oversee the implementation of regulatory reform initiatives and policies to ensure that the agency effectively carries out regulatory reforms, consistent with applicable law. And on March 28, 2017, the President issued EO 13783, which directs agencies to review all agency actions in the interest of promoting the clean and safe development of our Nation's vast energy resources with particular attention to spurring the development of oil, natural gas, coal, and nuclear energy resources.

In order to meet these Administration-wide deregulatory commitments, the agency is currently reviewing all existing regulations, orders, guidance documents, policies, and any other similar agency actions. DOE is also committed in the long term to take a continuous look at regulation in order to lower regulatory burdens on the American people.

ENHANCING NATIONAL SECURITY:

As a participant on the National Security Council, the Department has a unique role in our Nation's security. I undertake these responsibilities with the utmost gravity.

For more than 70 years, a cornerstone of our national security strategy has been our nuclear deterrent. By any measure, the strategy of nuclear deterrence has served us and our allies well. It facilitated the collapse of the Soviet empire, and with it, the dire threat it posed to freedom, stability, and peace.

Under the leadership of the President, the Department of Energy through the National Nuclear Security Administration (NNSA), and in partnership with the Department of Defense, seeks to strengthen our deterrence capabilities. We aim to make these capabilities more robust, flexible, and resilient than ever, so we can meet 21st century challenges.

We are currently working to advance key programs designed to extend the life of existing U.S. nuclear warheads by replacing them with systems that use modern technologies. Our work will also help us replace our aging nuclear security infrastructure – our extensive network of

laboratories, plants, and sites. Some of these sites date back to the Eisenhower Administration and are in need of updates.

At the same time, through its non-proliferation and naval reactors efforts, NNSA is a leader in our nation's efforts to ensure these weapons do not fall into the hands of rogue regimes or terrorists and maintains the superiority of propulsion systems for our Navy's submarines and aircraft carriers.

In short, through our work we'll seek to deter those who are not friendly to the United States, while convincing our friends to put their full trust and confidence in us as steadfast allies.

ADDRESSING THE OBLIGATION OF LEGACY MANAGEMENT AND NUCLEAR WASTE:

Fulfilling Legacy Cleanup Responsibilities

Every Secretary of Energy, upon confirmation, is met with the magnitude of the Department's cleanup mission.

It is our obligation to clean up the environmental legacy of the very weapons and programs, sites and communities that helped us win World War II and the Cold War.

We have made great progress, and I've seen this first hand at several of our Environmental Management sites this year.

There is no more plutonium on the Hanford site in the State of Washington. All 20 tons of leftover plutonium have been shipped out of Hanford.

Significant progress has been made on key sections of the Waste Treatment plant, and demolition of the Plutonium Finishing Plant is scheduled for completion this year or early next year.

Seventeen (17) billion gallons of contaminated groundwater have been treated.

Work along the Columbia River has advanced to a level that a portion of land no longer needed by the Department has been transferred to the community.

There is much more work to be done, and we will need your help to achieve this important environmental management goal.

My direction has been to put DOE on a final path to achieving the cleanup mission across our enterprise sooner, safer, and at less cost to taxpayers.

We will continue to press forward with tackling excess facilities at Portsmouth, Ohio; Paducah, Kentucky; and Oak Ridge, Tennessee.

We will continue our progress on the sections of the Hanford Waste Treatment Plant necessary for the Direct Feed Low Activity Waste (DFLAW) approach, which is vital to beginning tank waste treatment at Hanford.

We will commission and start up clean-up operations at the Savannah River Site on the South Carolina-Georgia border, as well as complete design and begin construction of the Oak Ridge Mercury Treatment Facility.

Addressing the Imperative of Nuclear Waste Management

The Department of Energy has another obligation - to advance solutions for the long term and secure storage of spent nuclear fuel and high-level waste. There are more than 110 sites around the country that are storing these materials.

We have a national security obligation to come up with a long-term solution, finding the safest repository or facilities available. The recent natural disasters and the ongoing threat of terrorism should heighten our resolve to secure this material in the safest possible facilities and as expeditiously as possible. The American people deserve a solution to this problem and we can no longer kick this can down the road.

In addressing all of our cleanup and storage obligations, we also have a compelling responsibility to American taxpayers. Therefore, the Administration proposes to terminate the Mixed Oxide (MOX) Fuel Fabrication Facility project. There is another approach – dilute and dispose – that is less expensive, has far lower risks, and can be implemented decades sooner than the MOX approach. I urge this Committee to help us make this important transition.

Conclusion

Mr. Chairman, and all the members of the Committee, I want to thank you once again for inviting me to share my vision about how we can make America more prosperous and energy secure.

Americans have always come together to meet the great challenges of our time. We all want to protect the environment. We all want to prosper economically. I am here to tell you, from my experience as the Governor of Texas for 14 years, that we can – and will – have both. Similarly, we at the Department of Energy are coming together with our many stakeholders to find solutions to the many challenges before us.

I look forward to working with every member of this Committee and the entire Congress to realize the President's vision of energy dominance, support the creation of more high-paying jobs for American workers, and produce more reliable and affordable energy for all Americans.

Thank you very much and I look forward to answering any of your questions.

Mr. UPTON. Thank you, Mr. Secretary. We appreciate your testimony. At this point, we will engage in questions, alternating between Republicans and Democrats for the short-term here.

So, Mr. Secretary, as you know, the grid resiliency in the Notice of Proposed Rulemaking that was issued 2 weeks ago has attracted lots and lots of attention. In August, DOE's staff report recommended that FERC expedite its efforts with the RTOs and the ISOs to improve energy price formation.

So I have two quick questions. What prompted DOE to act under Section 403? And, would it be fair to say that DOE exercised its authority under Section 403 because there is a level of urgency that wasn't perhaps being addressed elsewhere?

Secretary PERRY. Mr. Chairman, the base reason that we asked for FERC to take a look at this and to act is that for years this has been kicked down the road, if you will. Mr. Olson has been, in his time of being in Congress has looked at this issue, as a number of you have. But Pete and I have had this conversation about the resiliency, the reliability of our grid, and making sure.

And I give you one good example. Those of you who are from the Northeast—well, let me back up before I go in.

One of my great concerns as the Governor of Texas back some years ago before we were making the transition to substantially more and cleaner generation of power, kind of in between the shale gas revolution and getting those plants built, we had some brown-outs in Dallas, Texas, and Central Texas, and parts of the State of Texas. And when it gets to be 108 degrees and your grandmother's house loses electricity there are some people calling the governor going, "What in the hell are you doing?" or "Why haven't you taken care of this?"

And one of the things as an elected official, I never wanted to have to explain to somebody why we didn't have the vision to put into place a reliable and resilient electrical power system. And we started working really hard in ERCOT, which is our grid there in the State of Texas, and I think we put in place both the generation and the distribution to be able to never have to have that call.

And when the polar vortex came into the Northeast back in 2014, and that event occurred, I don't think any of you want to have to stand up in front of your constituents and explain to people why the decision had to be on turning our lights on or keeping our family warm. And so making sure that there is that resiliency there, that there is that fuel on, on the ground, on the plant facility itself I happen to think is really important, not only from a personal security standpoint, just if you will, your citizen, but also from a national security point and those military bases that are in that, in that part of the world.

So, with that as a background, Mr. Chairman, I think having this conversation, and that is what I wanted to do, as I, as I got into this and I started taking a look at it and grasping this issue better I realized that one of the ways that we could have this national discussion was to send this forward for FERC for them to consider.

Mr. UPTON. Do you know what their timetable is going to be?

Secretary PERRY. Sir?

Mr. UPTON. Do you know what their timetable is going to be?

Secretary PERRY. I don't.
Anybody have a timetable?

Mr. UPTON. I know they are an independent agency but I just—

Secretary PERRY. Sixty days is I think the—

Mr. UPTON. So, the recent hurricanes, they raised the importance of energy security. We are all very, very troubled with what has happened. Earlier this year Mr. Rush and I passed a bipartisan bill, it was H.R. 3050, Enhancing State Energy Security Planning and Emergency Preparedness Act. The bill reauthorizes an important program that helps states prepare for hazards such as hurricanes.

What has the State Energy Program and the State Energy Assurance Planning played in the recent hurricane response efforts?

Secretary PERRY. Well, we learn something new in every disaster. That was one of my lessons as the Governor of the State of Texas for 14 years, and we had a number of major events, none as impactful as Harvey. I don't believe during that 14-year period of time there was a storm of any greater consequence for Florida than Irma, and certainly what Puerto Rico and the Virgin Islands are facing today. But each of these we learned a new lesson in.

And I think it is important for the governors of those states to come forward working with our counterparts at FEMA, at the other agencies of government that are dealing with this to give us new ideas and to, hopefully, bring forward here are solutions, here is something you had never faced before.

Puerto Rico is a very, very unique challenge. I will give you one example. When Texas and Florida, or any other state for that matter, you could preposition your utilities. And just as an aside, each of you have utility companies in your districts. The men and women who volunteered, and in many cases to go into harms way into Texas, into Florida, and pre-position and go in and get that electric power back on in record time. There were some 60,000 utility workers in Florida. I hope you will pass on to them your great respect for the work that those utility workers did. This is, it was herculean from my perspective.

But I think it is really important for us to take these lessons learned and then forward them so that the Federal Government can be more efficient as we deal with the next event that occurs.

Mr. UPTON. I know my time has expired, so I will yield to the ranking member of the subcommittee. I just want to say that we intend to have a hearing in the next couple weeks as to the lessons that we may hopefully have learned—

Secretary PERRY. Yes, sir.

Mr. UPTON [continuing]. Based on these hurricanes.

And yield to the ranking member of the subcommittee Mr. Rush.

Mr. RUSH. I want to thank you, Mr. Chairman.

Secretary Perry, the NOPR you issued included the subtitle "NERC warns that premature retirement of fuel-secure generation, strength, and reliability, and resiliency in the remote power system." However, Mr. Secretary, the statement that was submitted by your own agency indicated that fuel diversity makes the grid more reliable. And the CEO of NERC testified before FERC in June saying, "the state of reliability in North America remains

strong and the trend lines show continuing improvement year over year.

Mr. Secretary, how do you arrive at the conclusion that plants with 90 days of on-site fuel are somehow more reliable and resilient than other sources of generation and, therefore, can receive additional compensation?

Secretary PERRY. Mr. Rush, thank you. One of the things that I think is really important is that your life experiences inform you about future events. And this is a great example of it. And I respect the FERC members' views that I think their picture is one that is a snapshot in time. There is blue skies. The sun is shining, the wind is blowing, the pipelines are carrying gas. All of those things are what we consider to be normal operating procedure.

And in that scenario our grid is fairly reliable and it is resilient. But that is not the world that I have been asked to participate in is to oversee normalcy, is to oversee the everyday blue sky, wind blowing scenario. What I think one of my roles is is to think outside of the box.

And when we talk about base load and we talk about—no one in the country was involved with developing wind energy in a greater way than I was while I was the Governor of the State of Texas. We created inside that state and helped develop more wind energy than is produced in five countries. And this happened during the 2000s. So my commitment to an all-of-the-above energy strategy is not just some words and it is not just theory. There is a real track record of how we helped create the diversity.

I brought that to the Department of Energy. The President-elect when he asked me to come serve in this role knew that record of mine when I came here. And that wasn't going to change. I am still committed to an all-of-the-above. But the wind doesn't always blow. The sun doesn't always shine. The gas pipelines don't always, I mean they can't guarantee every day that that supply is going to be there.

Mr. RUSH. So are you saying then that the Chairman of NERC is operating his—and the study that was completed, done by your own agency came up with something new. Are you saying that your gut feeling presents a stronger rationale of this study that you would take the position that you are taking now? It seems to me that you are saying, well, my gut feeling has more priority. My gut feeling is something—rather than what the experts have said, I'm going off of my gut feeling. Am I reaching the right conclusion here?

Secretary PERRY. I can't answer with definitive what the conclusion is. But I can tell you that I think it is OK, you and I might disagree from time to time on a particular position. But I hope what we can agree upon is that the 403 that I put forward was a way to kick start a national discussion about resiliency and about reliability of the grid.

And best I can tell, we are pretty successful in doing that, sir. We are having this conversation now that we really haven't had in this country. And I think it is important for us to do it. We are not always going to agree. I am not going to agree completely with the FERC chairman. But I hope that we can have this very thoughtful, respectful conversation about making sure that no member of Con-

gress has to stand up in front of their constituents explaining to people why the electricity wasn't on, why they weren't able to keep their constituents safe and comfortable in their homes because we didn't make the right decisions dealing with national energy policy to make sure that we have a broad, all-of-the-above energy strategy in this country.

Mr. RUSH. I yield back, Mr. Chairman.

Mr. UPTON. Thank you.

The Chairman recognizes the vice chair of the full committee, the gentleman from Texas, Mr. Barton, for 5 minutes.

Mr. BARTON. Well, thank you, Mr. Chairman. Welcome, Governor, Secretary, friend. ADL leader at Texas A&M when I was at A&M.

This is your first exposure, I think, to the House, first exposure to our committee. What you are going to find out is those of us that have an R by our name are going to tend to be a little more friendly. Those that have a D are going to be a little more frisky. But we are all on your side.

Secretary PERRY. Yes, sir.

Mr. BARTON. We all want a good, robust energy policy, and nuclear policy for America.

Now, I have got questions about policy since the chairman has asked me on a bipartisan basis to put together an Energy Department reauthorization bill. And that is what we will focus on. But I want to put this thing about travel to bed.

How many times have you flown on charter flights as Secretary of Energy?

Secretary PERRY. One.

Mr. BARTON. One. And that was to Hazleton, Pennsylvania; is that correct?

Secretary PERRY. En route, en route to Portsmouth, Ohio.

Mr. BARTON. And that was at the request of a member of Congress; is that not correct?

Secretary PERRY. Correct. And a member of the Senate.

Mr. BARTON. And to your knowledge you violated no federal law?

Secretary PERRY. That is correct.

Mr. BARTON. And you fully disclosed it to the appropriate sources within DOE and the accounting departments and all that?

Secretary PERRY. And in addition I might say ran it through all of the appropriate historic ways to get that approval.

Mr. BARTON. But you understand that generally we expect, just as we have to, as members of Congress, when we fly, when at all possible we fly commercial? We understand that. And I assume you understand that, too?

Secretary PERRY. Yes, sir. And I have been a, and I have been a good frequent flyer—

Mr. BARTON. All right.

Secretary PERRY [continuing]. With two airlines.

Mr. BARTON. Now I happen to know that you and your sweet wife Anita have a place up here, but you all have a place that you call home outside of Austin, Texas, and that on most weekends you like to go back to Texas. Is that not correct?

Secretary PERRY. That is my goal. I can't say that every weekend.

Mr. BARTON. I didn't say every weekend.

Secretary PERRY. We have some international travel as cuts into that from time to time.

Mr. BARTON. I understand.

Secretary PERRY. But my goal is to go back to Round Top, Texas, as often as I can.

Mr. BARTON. Just out of curiosity, when you go back to Round Top, Texas, what airline, how do you get from Washington, D.C., to Austin, Texas? What airplane do you use?

Secretary PERRY. Yes. I make Southwest Airlines pretty happy.

Mr. BARTON. Southwest Airlines?

Secretary PERRY. Yes, sir.

Mr. BARTON. That is the low fare—

Secretary PERRY. That's the company, that is the company plane.

Mr. BARTON [continuing]. Transparency airline. Yes.

So how many times do you think you have used Southwest since you have been cabinet secretary?

Secretary PERRY. I have no idea. I am sure somebody has a record of it.

Mr. BARTON. But more than one? More than one?

Secretary PERRY. Oh, dozens of times, sir.

Mr. BARTON. I think we are OK if the Energy Secretary flies Southwest Airlines to Texas and flies commercial when at all possible, that every now and then when you are going to Hazleton, or Hanford, or Sandia or some, all the 17 national laboratories that are out in remote places intentionally, if it is expedient and doesn't violate federal law that on occasion you use a charter flight.

And I think DOE has planes of their own. I don't know what the protocol for the cabinet secretary to use the planes is within your own agency, but there are government planes under your control; is that not correct?

Secretary PERRY. That is correct.

Mr. BARTON. OK.

Secretary PERRY. For instance, to get to Hanford, that is out next to Chairman Walden's district, commercial flight to Seattle. And then from Seattle down to Hanford is, is a pretty good hike. It is on the very—

Mr. BARTON. And if a reporter wants to catch you catching a flight he has got a better shot at catching you at the Southwest Airlines counter than at some jet—

Secretary PERRY. I think there are multiple pictures of me on the Drudge Report that showed me at Southwest Airlines reading the Drudge Report.

Mr. BARTON. And it is OK to fly American. We will let you fly American, United.

Secretary PERRY. Yes, sir. And I—

Mr. BARTON. But Southwest is basically Dallas, Texas.

Secretary PERRY. And I have been on all of those. I have been on all of those carriers as well.

So, Mr. Chairman, I think the real key here is what I shared with Mr. Pallone, is that my intention will be to be as sensitive to this as we can be. And I totally respect Congress' oversight capacity here and what have you. And what I would offer you, sir, is that I think you sent a letter asking for the breakdown of the travel.

And what I would like to do, with your permission, is direct the agency as well to look back at the previous secretary's travel in recent memory to look and see if our travel is pretty much in line with what Secretary——

Mr. BARTON. Look at Secretary Hazel O'Leary's travel on party jets.

Secretary PERRY. That may be a, that may be a——

Mr. BARTON. Internationally. And do not do what she did, Mr. Secretary.

Secretary PERRY. But I think——

Mr. BARTON. My time has expired.

Mr. UPTON. The gentleman's time has expired. At least, at least if you continue to fly Southwest, no one will accuse you of flying first class.

Secretary PERRY. Well, now that is an argument that could be made, sir.

Mr. UPTON. OK.

Mr. BARTON. Well, hopefully he gets in Boarding Group 1.

Secretary PERRY. Southwest is a first class airline.

Mr. UPTON. Or A, Boarding Group A, A1 to 30.

Mr. BARTON. I have questions for the record, but I will submit them.

Mr. UPTON. The gentleman's time has expired.

The Chair will recognize the Ranking Member of the full committee, Mr. Pallone from New Jersey.

Mr. PALLONE. Thank you, Mr. Chairman.

I wanted to ask you about Puerto Rico, Secretary.

Secretary PERRY. Yes, sir.

Mr. PALLONE. As of yesterday afternoon it is estimated that only approximately 10.6 percent of Puerto Rico's residents have electricity. And this number actually represents a decrease, because in recent days I guess there was a fault on a transmission line.

But I believe it is our responsibility to fully help the people of Puerto Rico and the U.S. Virgin Islands as they work to repair their damaged electricity grid. And it is important that we remember that these are American citizens who are without power. Judging by the President's tweets this morning, I am not sure he fully grasps that fact because he seems to be talking about Puerto Rico as if it were some foreign country where we have deployed humanitarian aid.

But, look, I know that DOE has staff on the ground. You stated in your written testimony that more than two dozen technicians from DOE and the Western Area Power Administration are on the ground working to restore power. But there are three other power marketing administrations across the country under the auspices of DOE. They are models are how the Federal Government can be helpful in providing power to U.S. citizens.

Are there any technicians or staff from either Bonneville, Southeastern, or Southwestern Power Authorities in Puerto Rico or the Virgin Islands? And if not, are there any plans to deploy additional personnel from these other PMAs?

Secretary PERRY. Yes, sir. Well, certainly, we are not interested in pushing people out just for the sake of pushing people out just to check off a box that says, we have people there. So, I think a

thoughtful approach to this, which I am quite comfortable that we have a thoughtful approach to this.

And one of the things, Mr. Pallone, that I will share with you is this is a really different disaster. As I shared with the committee in my previous remarks, every disaster is different in some way. Puerto Rico is very, very different for a lot of reasons, the least of which is not that, that the electric PREPA, the public utility company in Puerto Rico, was already in bankruptcy months before this storm ever hit. So this storm really complicated the issue.

And I don't want to—

Mr. PALLONE. No, that is all right. I appreciate it.

Secretary PERRY [continuing]. Use up time to go over all of that.

But the point is we have got the Corps of Engineers, and the first time in my memory—and you may know better than me—but the first time in my memory that the Corps of Engineers has been pushed into place to get this re-build going.

Now, I also know that there are a substantial amount of private sector utilities that are ready, willing, and able to go into Puerto Rico as well as the contracting process occurs to get that country back. But from early on we said this is not going to be like getting Texas electricity back on or getting Florida's electricity back on. This one is going to be a challenge.

The commitment from this Administration, and certainly from DOE, is to do this thoughtfully, look at it, and make a decision about what is the best rebuild and from the standpoint of improving their, the infrastructure there so that when the next storm comes—and there will be a next storm sometime—that we don't have the same result.

Mr. PALLONE. I just want to get to a second question. But if you could get back to me through the chairman about where there are technicians or staff from these other power marketing administrations.

Secretary PERRY. OK. Yes, sir.

Mr. PALLONE. Or if there is some way to employ them so that they are there if they are not. OK?

Secretary PERRY. Yes, sir.

Mr. PALLONE. The second question I have, and I have to go through this quickly, is that many—it goes to the Notice of Proposed Rulemaking—many companies have been retiring or others proposing retirements of their coal and nuclear fleets simply because it makes the most economic sense. And there are market-place dynamics that completely contradict the premise behind DOE's Notice of Proposed Rulemaking to FERC. And the staff report on electricity markets and reliability issued by DOE in August does not support the basis of the NOPR.

So, the NOPR is short on details as to how this proposed rule would work, even though it proposes or completely changes how wholesale electricity markets operate. And my question is you have called the DOE national labs current tools, you have relied on them to prepare the DOE grid study that did not recommend the approach you are now taking through the NOPR on grid pricing. What specific analysis or model runs did you have the national labs or the Energy Information Administration prepare to determine the full impacts of your proposal before it was released?

I am just concerned that this data differs compared to the data used in the DOE grid study issued in August. To what extent did you take into consideration these other suggestions that seem to contradict your proposed rulemaking?

Secretary PERRY. I am not sure I consider them to be contradictory. I don't know whether or not in my perspective that the grid study that we put forward earlier in the year addresses with specificity the events that I am concerned about. And the events that I am concerned about—and I don't want to go back and beat this horse again—but a polar vortex that we had in 2014 that had the potential to be devastating to the Northeast. The idea that those, those nuclear and those coal plants should be part of that mix, I happen to think they should be.

I can make the argument that if you lose those coal fields in the northeast and you lose the ability to have the power that they currently produce, you can never replace that. You can't do it in certainly a timely way.

And so my point with this is I want to drive this conversation because, as Mr. Olson and I had discussed earlier, this has been talked about a lot but there hadn't been any action. And I want to try to push the FERC and this country to take action so that we don't face that event in the future where people's lives are put in jeopardy or where this country's national security is jeopardized because we just refuse to buy in to the concept that we needed a very diverse energy portfolio. That's really at the basis of this, Mr. Pallone, is that I wanted this country to go through exactly what we are going through right now, which is an open, thoughtful conversation about our grid resiliency and reliability.

Mr. PALLONE. Mr. Chairman, can I just ask if he could get back to us with any analysis or runs that they had the national labs or the Energy Information Administration prepare before their proposal was released?

Mr. UPTON. If you could provide that for the record, that would be great.

Secretary PERRY. Yes, sir.

Mr. UPTON. Thank you. The chair would recognize the vice chair of the subcommittee, Mr. Olson from Texas.

Mr. OLSON. I thank the Chair. Howdy, Governor Perry. I am so sorry. Fourteen years as my governor; it is a hard habit to break. Howdy, Secretary Perry.

Secretary PERRY. Yes, sir.

Mr. OLSON. You come aboard, my friend, at a very historic time. Power sources are changing rapidly. To handle these changes you proposed that FERC act as the power, to provide power sources with a slight preference for nuclear or coal. You said you wanted to start from the base. Well, my friend, mission accomplished.

The response from our friends in Texas and across the country, kind of makes you feel like the Aggie of all Aggies, Colonel Earl Rudder, A&M Class of 1932, climbed those cliffs at Pointe du Hoc with fire coming down all around him.

A friend of ours, a big energy firm in Houston, said, "The Administration has declared war on natural gas." And attacks are coming that say you prefer government control over the free markets. We both know that is a pile of Bevo Longhorn poo-poo.

We both know from being with each other for 30 years in Austin, Texas, there has been no bigger proponent of the free market for energy than Governor Rick Perry. You, as our governor, fostered the shale boom at the Barnett shale plate outside of Fort Worth. As our governor, you made Texas number one wind power in America and the world.

The South Texas Power Plant, nuclear plant in Bay City, took a direct hit from Hurricane Harvey. Never flickered. Power kept flowing. But 90 miles north of there in my district, the Paris Power Plant has eight generators—four coal, four natural gas—had to shut down all four coal because days of rain got the coal all wet. Again, you have done your whole life to support a diversified American portfolio for energy.

I just want to ask you, can you talk about the biggest problems you face, what you are trying to change for the markets today? What are you trying to address with these changes?

Secretary PERRY. Well, you said it very succinctly early on, and that is for us to have this conversation which we are doing. I think the idea that there is a free market in electrical generation is a bit of a—not a bit of a fallacy, it is a fallacy. Every state regulates the energy industry; that is the reason we have a PUC. There are different phases, there are different states of regulation. And each state has to decide which is the best one.

Back in the late 1990s, I believe it was in the late '90s we decided we were going to start a deregulation of the electrical industry in the State of Texas. And, basically, what deregulation means is competition. I mean that is the issue there is to let these companies be more competitive and less regulated by the state government in this case.

And so the previous administration, I think it is fair to say, they had a particular philosophical favorite in the energy industry. And they put their thumb on that scale. I think there is probably multi-decades of either disregard or whatever, and I am not going to sit here and tell you I know why the nuclear energy industry was disregarded the way that it was, but here is the challenge that we have in this country today on the nuclear side of things: if we are going to continue to be a leader in nuclear energy in the world, we have to support this industry in this country.

And the question, Mr. Chairman, is do we have a national security interest in the nuclear industry? And I think the answer is yes. And if we do, then we have to make sure that we are supporting that industry. Because if we don't, if we lose our supply chain, if we lose our intellectual chain of supply of bright scientists because we basically pushed the nuclear industry back, then we are going to lose our role as a leader when it comes to nuclear energy in the world. And that in turn is going to affect our ability to address the weapons side of it.

So, these are all interconnected. And I think making sure that we have an all-of-the-above energy strategy that is as free market as it can be, Pete. You are correct. But the idea that there is a free market in the energy industry is a fallacy.

Mr. UPTON. The gentleman's time has expired.

Mr. OLSON. One request, sir. Beat LSU.

Yield back.

Secretary PERRY. All right.

Mr. UPTON. The gentleman's time really has expired now.

The chair recognizes the gentleman from California, Mr. McNerney.

Mr. MCNERNEY. Thank you, Mr. Chairman. Thank you, Mr. Secretary. I want to thank you for your interest in veterans' issues.

Secretary PERRY. Yes, sir.

Mr. MCNERNEY. And look forward to collaborating with you on that.

I do want to say up front, though, that your budget proposes deep cuts in programs I care deeply about: energy efficiency, energy reliability, science, ARPA-E, innovative technology and loan guarantee, and energy storage. Now, these programs I feel are necessary for our nation's economy and our national security.

So let me ask you this: do you think that climate change is any way a threat to our nation?

Secretary PERRY. Yes, sir, I do. And if I could—go ahead and ask questions and I will—

Mr. MCNERNEY. Well, that was my question.

Secretary PERRY. Yes.

Mr. MCNERNEY. Well, OK. I mean, do you see a relation between the weather events we have had and climate change?

Secretary PERRY. Most likely. Yes, sir.

Mr. McNerney, before we take a lot of time on this issue let me just say that we are probably going to agree that it is happening. We are going to agree that it is going to have an effect on the globe. I think where we may or may not agree is just how much of this is man's fault in our decisions that we are going to make here.

I don't believe that we need to be making decisions that could put America at a disadvantage around the globe making decisions that we think might have an impact on climate change. I was in the Senate and one of the senators said that manmade climate change—or excuse me, climate change was 100 percent man's fault. I don't believe that. I don't believe that climate change is 100 percent man's fault.

Are we having an impact on it? Absolutely. Can we make a difference? You bet. Just like we did in the State of Texas where NO_x went down 60 percent, SO_x down 50 percent. We had 19 percent decrease in our carbon footprint. At the same time, we led the nation in the production of job creation.

So, you can have economic growth and address your climate in a positive way. And I hope that is what we all can work on together.

Mr. MCNERNEY. We can. But it seems to me that the risk of climate change is bigger than the risk of reducing carbon emissions. There is a pretty good tradeoff in my mind about that.

But let me go on to the next question. In your remarks you mention the DOE's role in innovation and advancing science, but your budget calls for a 16 percent reduction in science. Can you explain that?

Secretary PERRY. Yes, sir. I am going to give you a little higher level observation here about budgets. I have done budgets since 1985 as a member of the Appropriations Committee in the State

House. I was an agency head for 8 years, and I was the Governor of Texas for 14 years. In the early part of every session—and we only met 140 days every other year, so it is a really cool concept but the governor put a budget forward.

Generally the governor's budgets were pretty good doorstops. Now, I am not saying that that is how you all look at a president's budgets, but what I will tell you—

Mr. MCNERNEY. Well, OK.

Secretary PERRY [continuing]. I know how this process works.

Mr. MCNERNEY. Thank you for that observation, Mr Secretary.

Secretary PERRY. Yes, sir.

Mr. MCNERNEY. We had a hearing last week of energy producers. And every single supplier said that the market should value their product fairly and be open to competition, and that that would give the best result in terms of reliability and resiliency. Do you agree with that?

Secretary PERRY. In the, what is the right word, in the mythical world I would agree with that. In the real world that is not the case. As I shared with Mr. Olson, I don't think that you have this perfect free market world. And, I mean, we subsidize a lot of different energy sources. We subsidize wind energy. We subsidize ethanol. We subsidize solar. We subsidize oil and gas. And so the question is how do you make it as fair as you can?

And we are probably going to argue about that. Mr. Chairman Upton and I would probably have some disagreements about the perfect way to put a system into place. And that is what we are doing here. And that was really kind of my goal with this 403 is to get us to talking about the whole idea and the understanding that we have subsidized the energy industry for a long time. And I don't, I frankly don't have a problem with that.

If the concept of a free market is you are not going to have any impact except the market, I mean supply and demand, straight-up, pure, I don't know if I want to bet my grandmother's or someone's grandmother's safety and security on whether or not the lights are going to come on on a pure, totally and absolutely unregulated market.

Mr. MCNERNEY. And I am interpreting this as saying that the FERC should not be fuel neutral in a real world.

Secretary PERRY. I am saying—

Mr. MCNERNEY. My time is up. So I should yield.

Secretary PERRY. Yes, I am saying FERC ought to have a open conversation with all of us about how do we make sure that we can keep electricity as affordable and accessible as we can, and at the same time making sure that the reliability and the resiliency of that grid is in place so that if there is another polar vortex and if this whole climate issue and these storms and all of this goes into your line of thought process here, we are probably going to have another one. And if we are, shouldn't it be our responsibility to make sure that when your constituents flip the lights on that they are not having to make a difference or decision between staying warm and having lights.

Mr. UPTON. The gentleman's time has expired.

The chair would recognize the gentleman from Illinois, Mr. Shimkus.

Mr. SHIMKUS. Thank you, Mr. Chairman.

Secretary Perry, let me start by thanking you and acknowledging your words in the recent letter you sent to me regarding our nation's nuclear waste management program. I share your sentiment that the Federal Government's inability to dispose of nuclear waste by the legal deadlines impact communities throughout our country. And the Federal Government has a moral obligation to reach a solution to this dilemma.

We are advancing that very solution, as you mentioned in your opening statement. The full committee, we are in a subcommittee here, but our full committee passed out the Nuclear Waste Policy Act Amendments of 2017 with a vote of 49 to 4. And I thank my colleagues for working with me to move the bill.

This legislation provides the Department the tools to successfully complete the adjudication of the pending license for Yucca Mountain Repository, authorizes DOE to pursue a temporary storage program while the disposal facility is completed, allows a repository of the host state to constructively partner with DOE to mitigate potential impacts, and reforms the Nuclear Waste Fund to protect ratepayers who have already paid over \$40 billion to the Federal Treasury for this program.

Do you support resumption of the licensing proceeding for Yucca Mountain Repository concurrently with the reestablishment of the Nuclear Waste Program as required by the Nuclear Waste Policy Act?

Secretary PERRY. As I was sharing with Mr. McNerney that, when we were talking about budgets and governors' budgets and presidents' budgets and what have you, and there are certainly parts of that budget that I don't necessarily completely agree with. Hell, there were parts of my own budget when I was a governor I didn't agree with completely at the end of the process. But the point is I, I understand your role in this, and Congress' very important role in the budgeting process. And I respect it. And I am going to work within it.

So, the President's FY 2018 budget requests the funding to restart the Yucca Mountain licensing proceedings. And I think this is a really important point, that it is the licensing proceedings that this money is for. And I support that.

The most important priority now is for Congress to appropriate the funding so that we can reopen the Nuclear Waste Program and finish the Yucca Mountain licensing. At the end of it, those that are against this, Mr. Chairman, I mean those that are against this they may find out through this process that they were right or that they are not. But until we get to the end of that process we are not going to know that.

So, the sooner we receive this funding, the sooner our scientists and the lawyers can get to work.

Mr. SHIMKUS. And then following up on the, obviously, the authorization language that we passed through this committee, you thanked us for that.

Secretary PERRY. Yes, sir.

Mr. SHIMKUS. Do you feel that you are right, we are on a twofold track. Those in the media following me talked about this on the appropriation debate, and we are also on the authorization, how we

move the program forward should there be a successful decision. Are you encouraged by the language in the committee's bill and that that will help the Department of Energy move forward in the interim and in the long-term, again, solution to this problem?

Secretary PERRY. Forty-nine to 4 vote is a pretty clear message, sir.

Mr. SHIMKUS. Let me go on to, as you know, all Americans are paying the cost of the Department's inaction on disposing of spent nuclear fuel. Since President Obama illegally attempted to terminate the Yucca Mountain Program the overall taxpayer exposure skyrocketed from \$12 billion to \$30 billion. This is the judgment, this is kind of off book. This is money that we are spending that a lot of us don't talk about all the time.

With another estimate due in the near future that will surely show another significant increase in incurred liability, every day American taxpayers pay millions of dollars to manage used fuel scattered around the country, while not working to dispose of the material. What specific actions do you propose to undertake to finally reduce these ballooning costs?

Secretary PERRY. Well, one of the things that I think it would be wise for us as a country, and certainly Congress too as a partner in this process, is find some alternatives. And whether it is at WIPP, whether it is at the site in West Texas, whether it is something in Nevada other than Yucca, there are a number of places, and maybe some sites that we haven't even talked about or we hadn't thought about yet, but that I just think I don't want to get stuck that it, Yucca is the only place that you can go, and if Yucca doesn't happen then, we are going to set here with 38 states having high level nuclear waste in various places around in their, in their states that are not secure that have potential for a disaster to occur, whether it is manmade or a natural disaster.

And so that would be one of my observations and suggestions is that we really look at, as we go forward with this funding on the licensing of Yucca, at the same time look at the alternatives that are out there. Because, Mr. Chairman, you know this as well as anybody, we are going to require all of that space to handle this high-level waste that we have in this country.

Mr. SHIMKUS. And, Mr. Chairman, I know my time has expired. I would just say that is one of the benefits of the interim option in the legislation allows us to start consolidating and reducing the multiple hundreds of locations down to a handful.

I yield back.

Mr. UPTON. The gentleman's time has expired.

The chair would recognize the gentleman Mr. Peters for five minutes.

Mr. PETERS. Thank you so much, Mr. Chairman. And thank you, Secretary, for being here today. We actually met in San Diego when you came to speak—

Secretary PERRY. Yes, sir.

Mr. PETERS [continuing]. To our Chamber of Commerce a few years ago.

Secretary PERRY. Yes, we did. Sure did.

Mr. PETERS. And I represent San Diego. As you know from your visit, is a large innovation economy. And I want to just express a

little concern about some of the things I have seen out of the budget, maybe you have encouraged me by calling it a doorstop, but I would still like to hear your personal feelings on it, certainly with respect to the Advanced Research Projects Agency-Energy, or ARPA-E.

This single program since it was created in 2009 has provided \$1.5 billion in funding for more than 580 projects; led to the formation of 56 new companies; spawned 68 projects with other government agencies, including the Department of Defense; and attracted more than \$1.8 billion in additional private sector investment. And you indicated up front that innovation and energy was one of your, was one of your goals. Why on Earth would we be talking about zeroing this out like the budget does?

Secretary PERRY. Mr. Peters, as I said in my remarks in front of the Senate, I didn't write this budget. And my job is to defend it, which from time to time is counter to what I think is good public policy. This happens to be one of those.

As the government of the State of Texas, and President Trump, or then President-elect Trump knew that when he asked me to take this job, my history of working with the State of Texas being involved with emerging technologies and having a very thoughtful process in place with experts that looked at these technologies and then recommending to the governor and the lieutenant governor and the speaker, in the case of ours, whether or not these were places that we wanted to invest to try to bring those technologies to commercialization.

I still think that is a really good and thoughtful and an appropriate thing for government to do, whether it is the state level or the federal level. So, let me finish by saying that this is a good conversation to have. Do we have it structured properly? Congressman Barton is going to be working on the re-org over at the Department. I think we can find some solutions where we continue to push forward innovation where the government can identify new technologies, new innovation that can make a real difference in people's lives and help fund that.

Is it exactly like the structure of ARPA-E? I will engage in the conversation and debate. But I think it is important for us to promote innovation.

I will give you a good example. DARPA was created to make sure that America never gets surprised again in a conflict. And they have thrown a lot of Jell-O at the wall over there. And some really good, extraordinary things have come out of it. Did they bat 1,000? No. But there is not a bank in America that can say every one of our loans we made was a good loan and we got our money back.

Mr. PETERS. Mr. Secretary, I have to get into another question.

Secretary PERRY. Be smart about it. Have the right kind of oversight. And I think that the President would be supportive of having the right kind of oversight and having the right focus.

Mr. PETERS. I think what you said is very sensible. I appreciate your comparison to DARPA-E. That was the model. I mean DARPA, that was the model for ARPA-E.

And when the utilities came in here and I asked them specifically what is the Federal role in in energy security in terms of grid

efficiency and reliability, they said research. So I would just like to——

Secretary PERRY. Sure.

Mr. PETERS [continuing]. I would like to offer that as something that you can advocate for within the Administration.

Secretary PERRY. You are absolutely right, Mr. Peters. And that is happening at Idaho National Labs.

Mr. PETERS. Right.

Secretary PERRY. We have got that grid out there. We can go break things and not have to worry about——

Mr. PETERS. We know that the more nimble stuff sometimes happens outside on the DARPA model. And ARPA-E is that.

Let me just ask one other question about the all-of-the-above energy strategy. What role does energy conservation play as part of creating a supply? And is that something we should subsidize if we are subsidizing other energy sources?

Secretary PERRY. The answer in the broad sense is absolutely conservation plays a role. We have been able to make a difference.

If you can put processes into place that save energy, that make it more efficient, then you certainly should do it. We can have the discussion, the debate about how you do that, that is really the devil is in the details about how you do that, but I do support the concept of conservation. It makes sense. And how we do it—one of the things that I learned as a governor is how do you incentivize people?

We were able to clean up our air in Texas so much partially by giving some tax credits to people for switching over from older, dirty-burning diesel-type engines to newer, more efficient ones. And that really helped on the fleets. So I think that rather than subsidization that some people go, oh, that is not government's role, there may be some thoughtful ways working with state and federal governments to come up with incentives to get people to change their——

Mr. PETERS. My time is up.

Secretary PERRY. Yes, sir.

Mr. PETERS. But some people say those tax credits are subsidies, too, so.

Mr. UPTON. The gentleman's time has expired.

The chair would recognize the gentleman from West Virginia, Mr. McKinley.

Mr. MCKINLEY. Thank you, Mr. Chairman. Sorry, was disrupted there just for a minute.

Mr. Secretary, welcome.

Secretary PERRY. Yes, sir.

Mr. MCKINLEY. And it is a delight that you are here. And I am particularly appreciative of you continuing this discussion because we have had five or six hearings on this topic through this, this summer. And so it is really important for you to put a punctuation mark on this.

For the record I guess I should say, I don't see any daylight between you and me on this subject, particularly as it relates to reliability. I am 100 percent behind what your position is on that to give us a reliable grid system for this.

And I am coming from the area that is gas. Forty-two percent of all the gas produced in America comes from this region that I represent, part of which is Marcellus and the Utica gas shales. So I am very concerned about the reliability of this.

So I want to go back. Your views and other people have talked a little bit about the polar vortex of 2014. And I was here during a lot of that discussion during that period of time. And I think people need to remember what elements were like. Because in 2014 after that they came here, FERC came and testified before us that we came within one small power plant of having a blackout on the East Coast.

Secretary PERRY. Yes, sir.

Mr. MCKINLEY. By talking about 500 megawatts for a small power plant. Since 2014 we have had 34 coal-fired power plants close down since that period of time. Now, we have tried to replace them with gas and wind and other things. And that is to the credit of the utility companies.

But your own analysis coming from staff and otherwise has said that during that polar vortex 22 percent of the power-generating capacity in the PJM market was lost during that period of time, and 55 percent of that was in gas-fired power plants. So I am concerned about if we think we are going to get reliability simply switching over to gas when we found out there are some issues with that. And that is why I am very supportive of you. I want to see us spend more research dollars in defining the ways to make gas more reliable, and find ways that we can have gas have that 90-day supply on site within, inside the fence, to be able to do that.

So I am alarmed that people are ignoring what is already here that we have, as we have got the nuclear, which is by far the most dependable supply we have: once you turn it on you are good. And then follow with coal.

So I am concerned also with the fact that people don't seem to recognize that since the polar vortex that we have still continued to have forced outages at our gas-fired power plants that I think we have to do a better job trying to help them find ways that they don't have these power outages. But 94 percent of all the outages in our gas-fired power plants, or excuse me, 94 percent of all the outages come from gas-fired power plants. I think we can do a better job.

So, in the time frame that I have left for you, if we had a polar vortex occur in the next couple of months in this country can you paint the picture of what we might be subjected to under the current circumstances?

Secretary PERRY. Well, I am not sure I want to paint that picture and unduly scare the people of this country. I think we need to be responsible. I think we need to be really mature in the conversations that we have with the people of this country.

And I go back to I don't want any of you to have to stand up in front of your constituents and try to explain to them why they did not have power, whether it is a 108-degree day in Dallas, Texas, or whether it is a substantially below freezing day in New York City. And I think any of us really know in our hearts that if you have a diversified portfolio you will be able to serve better than if

you have a limited. We saw that back in Texas in the early 2000s when gas went to \$14 an Mcf.

Mr. MCKINLEY. So, Mr. Secretary, don't you think then if FERC were to follow through with your mission don't you think we would have a better outcome?

Secretary PERRY. Well, I do. But, that is why we are having this conversation here, I want to hear both sides of this and to have a very robust and open conversation. But I am very comfortable that having this diverse portfolio of energy, of hydro, of coal, of nuclear, of wind, of solar, of bio makes abundant good sense.

Now, do I think that we ought to subsidize all of them from the federal level at some grand scheme? No, I don't.

I look at wind and solar kind of like I look at my kids. I have supported them through their growing years, but once they got out of college, they are kind of on their own. And we did that with wind and solar, we subsidized those. They have become very, very good at what they do. And innovation has allowed them to become incredibly efficient. So, the idea that we need to be subsidizing them going forward——

Mr. MCKINLEY. Unfortunately, Mr. Secretary, ——

Secretary PERRY [continuing]. Find the balance.

Mr. UPTON. The gentleman's time has expired.

The chair would recognize the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman. And, Secretary, welcome. You and I have known each other since the '80s when you got elected to the state legislature as a Democrat.

Secretary PERRY. I started to say, back in my Democrat days.

Mr. GREEN. Yes. And in our younger years we played basketball together in Austin, and just like I did with Chairman Shimkus.

Our subcommittee here has had a number of hearings over the last few months. And it seems like every panel we have they talk about how Texas got it right in our fuel blend that we are doing. And other states ought to look at that. And you were governor when we created this, basically, a free market system and with the wind power, natural gas. We only have two nuclear power plants in our state.

But let me read you a quote from your nomination. "Our willingness to develop natural gas and tap shale formations has helped Texas reduce its carbon footprint." But we truly advocated all the above strategies in your time as governor. Texas took the national lead in wind energy development. Texas is still one of the leading states when it comes to wind power, and many of the policies you oversaw and implemented as the governor are responsible for that.

My concern is, and I am going to quote my colleague Congressman Shimkus, as well as the chairman of the subcommittee on Environment and the Economy: "There are fundamental questions about what constitutes a base load power plant, something Perry in his request laid out as having 90 days worth of fuel onsite."

During Harvey our coal plants in Texas had to switch to natural gas because the coal was under water. And it was so wet, when it did get out from under water it couldn't be used. Now, we can have a conversation of power sources that didn't happen, but our natural

gas plants continued. In fact, our nuclear plant, that literally the hurricane came right over, continued to function.

That is my concern, that seemed like with your new effort you are gaming the system and not doing what we did when you were governor in Texas on doing a free market program. And let me go to our national coverage now. And as Governor of Texas our electricity follows as 48 percent natural gas, 28 percent coal, 11 from nuclear, and 12 percent from wind sources.

Now, to compare that to overall sources of generation for our country last year, the U.S. got 34 percent of its electricity from natural gas, 30 percent from coal, and 20 from nuclear, and 15 from renewables, including wind, solar, and hydro. That is why I question your recent DOE notice of public review. In an internal DOE report from July, DOE "the power system is more reliable today due to better planning, market discipline, and better operating rules and standards."

Why do you find that there is now an immediate reliability crisis that needs to be addressed in an extremely short 45-day comment period? One, because we have had so much testimony in our own committee, subcommittee about reliability hasn't been an issue. And why do we need to do this?

Secretary PERRY. Mr. Green, thank you. Let me address your first question about the issue of coal and its being impacted by flood waters in this case.

We learn something new in every disaster. I will give you one example. Remember when we did, and I think it was Ike, and we did a big contraflow on Interstate 45 bringing the—actually we contraflowed 45 and 10.

Mr. GREEN. I only have about 50 seconds left and I have one more question. If you could—

Secretary PERRY. Right.

Mr. GREEN [continuing]. Speed it up. If I get extra time like my colleagues then I can continue that.

Secretary PERRY. We learn something new every time. And I will suggest to you the coal folks have learned something new this time, and how they store coal is one of those. But I don't consider that to be anything other than a bit of a diversion for them to look at.

And what was your last question?

Mr. GREEN. Well, let me go to another one though.

It seems like we're socializing now by this effort that you are trying to do, instead of do the free market system with the cheapest supplier could be nuclear because, you say, those plants will run 30 years and even extended. But right now natural gas is cheapest, or cheap as we could get with wind, and so we are using all we can of that. But it seems like you are putting your finger on the scale and not doing what we have done in the Texas for the last 15 years or so to try and let free market deal with it.

And like I said, I don't have enough time but if the chair will let you answer that.

Secretary PERRY. I will briefly give you the same answer I gave—

Mr. GREEN. It's hard for those of us from Texas to talk fast.

Secretary PERRY. Yes, sir. I understand.

The key is there is no such thing as a free market in the energy industry. Do you agree that there is a free market? I don't, not even in Texas, because we have a PUC. We had the CRES. We have, I mean government's picking winners and losers every day by regulations and what have you. And I think I am at least honest enough to say that that is not—not that you are not, but—

Mr. GREEN. Let me interrupt. I have the right to choose—

Mr. UPTON. The gentleman's time has expired.

Mr. GREEN [continuing]. From 30 different plants for my electricity in my home.

Secretary PERRY. Yes, sir.

Mr. GREEN. And the person who delivers it can also use whatever power generator they have.

Secretary PERRY. Yes.

Mr. GREEN. So that is the free market that we have.

Secretary PERRY. And listen, the competition side of it, Gene, you know me, I am all about that competition. That is what we did back through the late '90s when we deregulated that market and the competition came. But the idea is that we had an administration before that had their thumb on their scale. I think you will agree that he liked green energy. And that is where the subsidization came. That is where they pushed down.

I happen to think because there was in 2005 a guy that gave a pretty good speech about peak oil, that we had found it all, there wasn't any more. And taking a snapshot in time right now, \$13, \$14 an Mcf of gas, today it is substantially less than that. But I don't know what it is going to be 5 years down the road. But one of my responsibilities is to kind of look over the horizon, see what the future is.

And, again, I go back to we have to make decisions to make sure that we have a diversified portfolio so that if the wind quits blowing, if the sun quits shining, if the gas transmission line is corrupted in some way that there are still people who are going to get power. That is my goal.

Mr. UPTON. The gentleman's time has expired.

The chair would recognize the gentleman from Mississippi, Mr. Harper.

Mr. HARPER. Thank you, Mr. Chairman. And, Mr. Secretary, thank you and welcome. And it is always an honor to have you here.

Secretary PERRY. Thank you.

Mr. HARPER. And you have been a breath of fresh air as we look at the way you are doing the policy and setting those rules, looking ahead and having that foresight. And so we thank you for your, your efforts.

This past February GAO reported that the DOE is responsible for almost \$370 billion worth of environmental liabilities. About \$4.5 billion of the agency's defense environmental programs are spent on operational activities, and about \$1 billion to fund the capital asset construction projects needed to support operational activities.

While there is a lot of focus on how DOE spends on major capital projects, like Hanford's waste treatment plant, we are not convinced that there is enough attention to ensure operational spend-

ing results in safe, effective cleanup and, thus, reduce future taxpayer costs. Can you talk about your plans accelerating DOE's environmental cleanup work?

Secretary PERRY. Yes, sir. That was one of the reasons that I wanted to go out at Chairman Walden's request, and the senators from Washington, and the government of Washington State, Governor Inslee and his Environmental Commission, and see firsthand. And I will tell you, historically there have been some decisions made that certainly were not in the best interest of taxpayers, not in the best interest of a timely cleanup.

I think what we are seeing with Bechtel as the M&O out there on the vitrification plant, and it appears that they are moving forward in an appropriate way, both budget-wise, both time-wise, to be able to get that plant up, I have encouraged them to even be ahead of that schedule, that that would be a very good thing. But I am confident that in some of these really big projects on the cleanup side that we are, we are making progress.

And as you rightfully stated, as we speed these processes up we save substantial amounts of dollars going forward.

Mr. HARPER. Your Environmental Management Office recently performed a 45-day review of operations. Can you speak to whether that will produce more effective cleanup?

Secretary PERRY. Well, yes, sir.

Mr. HARPER. Hope so.

Secretary PERRY. It will.

Mr. HARPER. Yes.

Secretary PERRY. And whether it is out at Portsmouth, which I was there about 2 weeks ago; and we got WIPP back online in Carlsbad, New Mexico, and they are again taking shipments. We have got the chromium issue; Oak Ridge is, theirs is making progress. Savannah River is making progress on their, their tank waste out there, which is the largest environmental risk at that site.

So this is a monumental task, as you talked about. The amount of money and the amount of time that we are talking about here is pretty stunning.

Mr. HARPER. Look, I want to talk for just a minute in the time we have left. Our national laboratories, I know you visited a number of those during your tenure. The Department's national laboratories, you know, developed as really an outgrowth to the Manhattan Project. That is really I think the crown jewels of our nation's federal research framework. And over the last decade congressionally-chartered expert panels, GAO reports, non-governmental organizations have noted DOE's continued micromanagement of the labs, saying that perhaps they hampered innovation results in inefficient processes.

So, Mr. Secretary, what is your perspective on how DOE's laboratory system is currently operating, and what steps that you might initiate to enable the labs to execute DOE's energy security and the innovation mission?

Secretary PERRY. There is clearly a balancing act that goes on between management at the top of an agency of 16-plus thousand people and 100,000 contractors versus allowing laboratories complete and total freedom to go do whatever they want to do. Hope-

fully, my experience as a CEO of a fairly large entity, matter of fact one larger than DOE, for 14 years informed me about how you put good, thoughtful, capable men and women into positions of management and free them to go manage and to make the right decisions.

That is what you can expect out of me because that is what my history has been. So if we have a lab that is having some challenges and, Los Alamos had some challenges over the last couple of years, and we are addressing those, but by and large my approach is going to be hire really good people——

Mr. BARTON [presiding]. The gentleman's time has expired.

Mr. HARPER. My time is up. Thank you.

Secretary PERRY. Point them in the right direction, and free them to go do what the people of this country need.

Mr. HARPER. Thank you, Mr. Secretary.

Secretary PERRY. Yes, sir.

Mr. BARTON. The gentleman's time has expired.

Mr. Secretary, we have about another 45 minutes, hour's worth of questions. To quote you, if you will shorten your answer we can get on down the road.

Secretary PERRY. Yes, sir.

Mr. BARTON. And you and I can go have Texas barbecue, Blue Bell Ice Cream——

Secretary PERRY. OK, I will.

Mr. BARTON [continuing]. And pecan pie.

Secretary PERRY. I will quite filibustering, sir.

Mr. BARTON. All right. I am going to remind you of that.

With that, I want to recognize my good friend from Pennsylvania, Mr. Doyle, for 5 minutes.

Mr. DOYLE. Thank you, Mr. Chairman. Mr. Secretary, welcome.

Mr. Secretary, I would note that many of your responses to the questions regarding the NOPR highlighted the polar vortex. PJM, which is the RTO in my area, responded to that crisis with new rules to address those capacity issues. And while I don't think the rules are necessarily perfect, that there is many different levers to pull here, or smaller tweaks than what you are directing FERC to do in the 403.

I would also like to point out that this committee has held eight hearings on markets and reliabilities. We have actually been having the conversation that you claim to be starting. Greenwire reported last week that you claimed that the 403 you sent to FERC wasn't a directive, you said you were hoping to have a conversation. And you have said that many times today in this hearing.

However, the NOPR includes phrases like "the Commission must act now," "the Secretary is directing the Commission," and "the Secretary is requiring the Commission." The document contains the word "must" 12 times. And I just want to point out that the comment period on this NOPR is extremely short and could fundamentally reshape or destroy many of the electricity markets very, very quickly.

So, it seems to me that your quotes in front of this committee today and the document that you sent FERC seems to be at odds. So, which is it, Mr. Secretary, is this a directive for FERC to do this or is it a conversation?

Secretary PERRY. Both.

Mr. DOYLE. So it is a directive then.

Secretary PERRY. My words are what my words are. I don't back off from them. And——

Mr. DOYLE. OK. Well, what your words said in the NOPR and what you are saying here today seem to be at odds with one. They can't be both, so which one is it?

Secretary PERRY. Well, actually it is both. It can be both. We can have a conversation, and I think they must move. I think they must act. We have kicked this can down the road as long as we need to.

Mr. DOYLE. Do you think there are any alternative—I mean, what you are proposing in this 403 is rather extreme. It is you talk about putting fingers on the scale, you are putting a heavy finger on the scale here in this 403. And if you claim to be an all-of-the-above energy person, as I am, this is going to result in major disruption in the electricity markets.

So, which comes first? This is a short comment period time, so, are we in conversation mode first and then there is going to be a decision? Or have you given a directive to FERC to do something without a conversation up front?

Secretary PERRY. Mr. Doyle, I think you are wrong in one thing you said, and it is that——

Mr. DOYLE. I have probably been wrong in many things I have said. I am sure you haven't but.

Secretary PERRY. Trust me, and I have been in front——

Mr. BARTON. Doyle is a good baseball man.

Secretary PERRY. I have been in front of 4 million people before in a debate setting. That was when I could just remember them.

The point is, I hope nobody thinks that I take credit for starting this conversation. Congressman Olson

Mr. DOYLE. OK, you are forgiven for that. But let's just move——

Secretary PERRY. I think going on about, this has been discussed for a long time, as you rightfully said.

Mr. DOYLE. Right.

Secretary PERRY. I just think it is, and again, I don't want the folks in Pennsylvania in your district to be calling you up and saying, Congressman Doyle, why in this——

Mr. DOYLE. Our RTO made those adjustments. We are pretty confident about our capacity in Pennsylvania.

Let me ask another question.

Secretary PERRY. Pretty confident is not going to get it.

Mr. DOYLE. You are good at filibustering. I want to ask some questions.

Secretary Perry, your predecessor released a report, the Quadrennial Energy Review, finding that the short-run markets may not provide adequate price signals to ensure long-term investments in appropriately-configured capacity. And I do think that that is an issue.

Also, resource valuations tend not to incorporate subordinate network or the social values such as enhancing resilience into resource or in investment decision-making.

So I think the increased importance of system resilience to overall grid reliability may require adjustments to market mechanisms

to enable better valuations. I think coal and nuclear needs to have better valuations than it has today.

But I want to ask you, do you think there are any better alternatives, options that should be examined instead of the NOPR?

Secretary PERRY. I don't have any idea whether there are any better options. That is one of the reasons we wanted to have this conversation is to bring those up and discuss them. I am not saying that my letter to FERC is the be all to end all, but it has obviously been very successful in getting the conversation going.

Mr. BARTON. The gentleman's time has expired.

Mr. DOYLE. Thank you, Mr. Chairman.

Mr. BARTON. The chair now recognizes the gentleman from Ohio, Mr. Latta.

Mr. LATTA. Thank you, Mr. Chairman. And, Mr. Secretary, thanks for being with us today.

Secretary PERRY. Yes, sir.

Mr. LATTA. Like you, I believe in promoting American energy security, and that means an all-of-the-above energy policy for the United States. And I would like to take a moment to thank you for your recent actions to start those conversations about energy mix and energy markets. And I would like to now focus on a couple of items of legislation I have been working on.

Mr. Secretary, in addition to the mandatory efficiency standards there is also a voluntary program called Energy Star that identifies those appliances that go above and beyond the federal efficiency standards by allowing them to carry the Energy Star label. This label allows consumers who want ultra-efficient appliances to easily identify which models save the most energy. However, in 2009 the Obama administration shifted the lead role for this voluntary program from the DOE to the EPA. Many have complained that the EPA is the wrong agency to handle what is fundamentally an energy program.

And, Mr. Secretary, do you believe that the Energy Star Program is one that should be led by the DOE or the EPA?

Secretary PERRY. From a scientific standpoint I think that the question answers itself on its face. It is the national labs that have the scientific ability to look at these programs and actually analyze them in a scientific way reside over at DOE.

Mr. LATTA. Thank you. And being that DOE has been setting the mandatory efficiency standards for appliances for 30 years, do you also believe that your agency and not the EPA has that relevant expertise? And going back and talking about what the standards you just said, I assume that would be yes.

Secretary PERRY. Yes.

Mr. LATTA. And would you also support legislation that would clearly make the DOE the lead agency on the Energy Star Program?

Secretary PERRY. That is going to be your call, sir. But it makes abundant sense to me that that would be a good slot for it to reside in.

Mr. LATTA. Thank you. And, Mr. Secretary, I appreciate your previous words of support for advanced nuclear technologies. As you may know, in January the House passed my legislation, the Advanced Nuclear Technology Development Act, by a voice vote.

And this legislation will help pave the way for American innovators, nuclear engineers, and entrepreneurs to design, develop, license, and ultimately deploy the next generation of nuclear reactor technologies. The Department of Energy's Office of Nuclear Energy plays an important role in supporting these potentially break-through technologies in addition to appropriately coordinating with the NRC to assure that those technologies will navigate the NRC's rigorous regulatory approval process.

And, Mr. Secretary, what is your vision for DOE's Advanced Nuclear Technology Programs, and how do you plan to ensure that there is appropriate alignment with the NRC on those advanced reactor licensing activities?

Secretary PERRY. We think small modular reactors, advanced reactors are the real way to the future. One of the reasons that we think it is important to support the nuclear industry today is because we have been losing that race, if you will. We don't want to get to the point in the globe where the only people that have the technologies, that have the supply chain capability are the Russians, the Chinese, and/or the Koreans. And that is a concern of mine, that we are headed that direction in this country today because of the lack of support for the civil nuclear power industry.

Idaho National Labs has a substantial project. Hopefully we can see the funding go forward on those small modular reactors and that 10 years down the road people will have looked back and said, we made the right decisions about focusing on advanced reactors, and that the country is better served and America takes it rightful place back as the lead on innovation and supply chain, and the brainpower in the nuclear side of the equation.

Mr. LATTA. Well, thank you very much.

And, Mr. Chairman, I yield back the balance of my time.

Mr. BARTON. I believe you are the first one to actually yield time. So we appreciate it.

The gentlelady from Florida, Ms. Castor, is recognized for 5 minutes.

Ms. CASTOR. Thank you, Mr. Chairman. And welcome, Mr. Secretary.

I want to ask you about Puerto Rico because we have never—and the U.S. Virgin Islands, because in the history of America we have never seen an electric grid devastated to the extent that we have after Hurricane Maria. And as of right now, 84 percent of customers in Puerto Rico are without power, and the U.S. Virgin Islands figure stands at 86 percent in St. Thomas, 88 percent in St. Croix, 100 percent in St. John. And even after Hurricanes Irma and Harvey we saw widespread outages in Florida and Texas and the Gulf Coast.

Yesterday we had a briefing from the Department of Homeland Security, FEMA, and the Army Corps of Engineers and they said that under current law in the Stafford Act that all we can do right now is do some repairs. We cannot do what we need to do to build a modern, resilient grid in Puerto Rico and the Virgin Islands. Yet, there are a lot of bipartisan discussions here. It is not contained in this Emergency Supplemental to begin that or change what the Stafford Act says. So we have got to protect the taxpayer. We cannot just rebuild what was there before. We have got to build ac-

cording to the national laboratory research, your great ISER Group at DOE.

So, oftentimes planning and conversations don't cost anything, or not much at all. Could you go specifically into what conversations you have had already with PREPA, the Army Corps of Engineers, bond holders, what is your plan to build a more distributed grid there with the modern technology that is at our fingertips?

Secretary PERRY. Congresswoman Castor, you have just pointed out the real challenge that this country faces in dealing with the territory and the citizens of Puerto Rico. That is a, that is a country that already had its challenges before this storm—

Ms. CASTOR. Well, they are America. They are American citizens, so it is not a country.

Secretary PERRY. Sure. Excuse me.

Ms. CASTOR. But could you just detail, since the time is limited—

Secretary PERRY. That is the reason I called it a territory, ma'am. I apologize for misstating here and saying country. But the territory had a challenge in front of it already because of the oversight under PERPA—

Ms. CASTOR. We know that. I just want to—time is limited, so can we just say—

Secretary PERRY. Yes.

Ms. CASTOR. —specifically what conversations you have had and what is to come?

Secretary PERRY. We have had many conversations about how to deal with this. The challenges are, are real. I can't tell you that there are any quick and fast solutions. Rebuilding it back to where people have power right now is the number one goal, getting that power back on.

Ms. CASTOR. Has there been an interagency meeting here at DOE or in Washington to discuss this?

Secretary PERRY. We have interagency meetings all the time, ma'am.

Ms. CASTOR. Specifically on—

Secretary PERRY. Yes, about this issue.

Ms. CASTOR. OK. Well, I, we, the entire committee and everyone would benefit if you could report back on with greater detail and specificity so that we can be accountable as possible,

And I have to say it is so disheartening to see President Trump state this morning that we cannot keep FEMA and military and first responders in Puerto Rico forever. I hope this doesn't echo across the Administration and the great folks of the Department of Energy and the Congress. I hope, instead, that Vice President Pence's statement would prevail that we are going to be with our fellow citizens every step of the way.

So, on the grid resiliency pricing role, a consensus is forming very quickly that this is a very misguided effort. It is not based on science. I know you said before, we don't know in our hearts, or maybe we can find it in our hearts. Fortunately, when it comes to electricity markets we don't have to rely on what we feel. We have the very best scientists and analysts. In fact, right there in the Department of Energy in your own August grid study they said that

the grid right now is reliable, it is strong, it is actually more reliable than ever.

We also rely on the North American Electric Reliability Corporation, NERC. They have said even just recently that the U.S. power system reliability is strong. So there just is no rational basis for this new FERC rule that you are trying to move through as quickly as possible.

And I am concerned especially that the whole discussion about how much this is going to cost consumers and businesses all across the country is being short circuited. We had experts here last week that said we are looking at multi-billion dollar cost increases on our neighbors back home.

And so what is the Department's plan to actually hear from these consumer groups that stand up for our neighbors? We hear a lot from special interests and lobbyists in Washington. But how do you, in your role of representing everyone—

Mr. BARTON. The gentlelady's time has expired.

Ms. CASTOR [continuing]. Give voice to the consumer concerns and these massive cost increases that appear to be on the horizon?

Mr. BARTON. The Secretary can answer the question but the gentlelady's time has expired.

Secretary PERRY. I can. Ms. Castor, if the letter, the NOPR to FERC is what you say it is, they won't go forward with it.

Mr. BARTON. The chair recognizes the gentleman from Illinois, Mr. Kinzinger.

Mr. KINZINGER. Thank you, Mr. Chairman. And, Mr. Secretary, thank you for being here. Thank you for your service. And I am really excited you are in the position you are. So thank you for all the good work you are doing.

I think nuclear has been talked about a lot. I am going to touch on it, then I have another question.

You mentioned the decline of the domestic base in terms of being able, international competition with nuclear. And I think that is an important point to reiterate is the fact that we have always been really the world leader in nuclear. And that is helpful from a national security perspective, too, in terms of nuclear non-proliferation, writing the rules of the road. And that is a base that we are losing.

And I think I was heartened to hear your mention of that and the fact that that is essential, not just to the economy, not just to grid reliability, not just to electricity, but to national security. That is a very important thing.

I also want to thank you for being supportive of the smart reforms at the NRC. Mr. Doyle and I have the NUKE Act which I think has a lot of support and I really appreciate all of that. It is a very vital part of our economy. Illinois gets a significant power of its energy from nuclear, and the country gets a very significant amount of that, too.

But since that has been hammered a lot, I do want to ask you in the Energy Independence and Security Act of 2007 the Bureau of Energy Resources was created at the State Department. It is effectively giving State its own energy office. There is no requirement for State to consult or collaborate with the DOE, and even though DOE has a more technological expertise on energy matters, and es-

pecially nuclear matters. Can you describe how DOE and State work together on energy policy and, specifically, can you provide areas that may be improved?

Secretary PERRY. I can't.

Mr. KINZINGER. OK. Because?

Secretary PERRY. I am not aware that they even had an energy effort over there. But if they did, you would think they would have contacted us. And if they have, I am not aware of it.

Mr. KINZINGER. That would make sense, wouldn't it?

Can you talk then about maybe your role when it comes to thinks like LNG exports and blunting the Russian energy weapon in Eastern Europe and, pushing back against the blackmail that the Russians can use against our allies?

Secretary PERRY. And I will try to be brief here. You have done a good job of basically laying out the facts.

The United States is blessed after the shale revolution of being able to produce. We are a net exporter of LNG as of this year. I believe in 2 years we will be the net exporter of all U.S. energy, and that is an incredible blessing.

Mr. KINZINGER. Miraculous.

Secretary PERRY. To be able to use that for America's best interests from a weapons standpoint, if you will. When you think about that Russia uses energy as a weapon, then America needs to have the largest arsenal. And so our ability to deliver LNG to whether it is a country like Ukraine, along with coal, to Poland, to the European Union, this is a powerful diplomatic tool of which we need to use wisely to support our allies, and to send a message to those that would use energy as a weapon that we will not be allowed to be pushed back with that, and we are going to support our allies.

Mr. KINZINGER. Well, I thank you for that. And I think it is a very important point is I actually think the energy revolution in this country borders miraculous. Ten years ago we thought that we would always be reliant on Middle East energy. And we find basically today that we have way more than we ever thought, and we can access it for a good price and be a swing producer in the world, and blunting energy weapons not just from Russia but all over.

With that I just want to thank you, Mr. Secretary, again for your service, for being here, spending your time. And I will proudly yield back 50 seconds to the chairman.

Mr. BARTON. And we have got a good tradition starting here.

Now we are going to go to Mr. Sarbanes of Maryland for 5 minutes.

Mr. SARBANES. I am going to break the tradition so recently established. Thank you, Mr. Secretary, for being here.

The U.S. intelligence community, as you know I think, has drawn a definitive conclusion that Russian hackers were interfering with our elections last year. And I know the President and a fair number of people within the Administration are resisting that conclusion still. But I want to talk to you about the potential exposure with respect to our grid and our energy security that is posed by hackers, by Russian attacks, cyber attacks.

Do you agree that the grid is at risk from cyber attacks from Russian hackers, or other hackers for that matter?

Secretary PERRY. Yes.

Mr. SARBANES. And I will note that back in 2015 the Congress approved the Fixing America's Surface Transportation Act, the FAST Act. That was a bipartisan bill. There were provisions included that Chairman Upton put in there that expanded DOE's authority to counter cyber security threats. And those provisions actually designate your department as the lead agency for energy sector cyber security.

So I would like to, maybe you could speak for just a minute or so about what actions you are taking as the lead agency with respect to the cyber threats to our, our energy security and our grid, to give us some confidence that this is getting the attention that it deserves.

Secretary PERRY. So over the past year the Department has worked with the entire energy sector, with the national labs, with the federal agencies that are involved with this, with the industries specific to develop a comprehensive strategy and a plan for the energy sector cyber security. The strategy for the energy sector is to leverage strong partnerships with the private sector.

We have got three labs that specifically their role is, it is called CyberCorps, their role is to focus on these cyber security issues, working with the private sector to strengthen today's cyber systems and risk management capability. And I might add to develop innovative solutions for tomorrow.

Mr. SARBANES. I appreciate that.

I would also appreciate, and maybe we can get this arranged here, I know that the FERC Chairman Chatterjee has agreed to brief members of this subcommittee on efforts to address the report of Symantec, for example, that describes these potential cyber attacks that are happening, or ones that are happening right now. Would you also agree to pull together a briefing of the members of the subcommittee on the reports we have heard of of these Russian-linked hackers targeting the electric grid? Is that something you would be willing to do?

Secretary PERRY. Yes, sir.

Mr. SARBANES. Appreciate it. And we will try to, we will try to make that happen.

I want to switch gears real quick. I have got 2 minutes left. I want to go back to the travel situation, not to beat a dead horse, but because actually I see an opportunity here, given your willingness to address this up front.

I have been chairing this Democracy Reform Task Force. We are actually releasing a report today called Trump's High Flying Cabinet which details what I see as kind of a culture of entitlement among many of the cabinet members in terms of using these private jets at public expense to kind of jet around the country in ways that I think are offensive to the average person out there.

You have spoken to the critique that your agency has received, and that you have received with respect to that. And I appreciate that. And I have to say in the context of the report that the conduct that you have been criticized for is not as egregious as most of the rest. That may be damning you with faint praise, I don't know. Or perhaps in the land of the ethically blind the one-eyed man is king, or something like that.

But I did want to speak to the fact that I think in the last couple of days the acting head of the Office of Government Ethics sent a memo around to agency heads. Did you receive this memo which talks about the role of agency leaders in promoting an ethical culture? Is that something you are familiar with?

Secretary PERRY. I don't know. We will look and see, sir.

Mr. SARBANES. All right. Well, I commend it to you.

It says, among other things, as a leader in the United States Government, the choices you make and the work that you will do have profound effects upon our nation and its citizens. And the citizens deserve to have confidence in the integrity of their government.

I am Greek-American. I always invoke my Greek heritage. There was an ancient Greek philosopher named Diogenes who wandered around in the daytime with a lantern looking for the honest man.

Mr. BARTON. The gentleman's time has expired.

Mr. SARBANES. You could be the honest man here. You could start a cultural revolution within the Administration that says we are going to pay attention to ethics. I encourage you to do that.

Mr. BARTON. The gentleman's time has expired.

Mr. SARBANES. And I thank you for your testimony.

Mr. BARTON. The gentleman's time has expired.

The chair now recognizes Mr. Griffith of Virginia for 5 minutes.

Mr. GRIFFITH. Thank you very much. It is never a bad thing to be compared perhaps with Diogenes. So I think that was a veiled compliment. And I look forward to you striving to meet that challenge.

I have to tell you I think you are doing a good job here explaining things this morning. And I agree with most everything that you have said. Particularly, I have to say that I agree with your proposed rule related to making sure that we have those facilities available that have fuel on site, coal and nuclear. Those facilities are resilient in case of emergencies like we had with the polar vortex a few years ago.

And it is almost like we have forgotten that natural gas, while it never completely shut down, the price went from \$3.00 to \$4.00 100 cubic feet or 1,000 cubic feet, to over \$100. And many places had to shut down jobs and et cetera because they couldn't afford to pay that price because supply didn't keep up with demand. And I think it is important that we remember that. And I think what you are doing to make sure that things are there are very important.

As you said to Congressman Doyle, pretty confident, just won't get it. If something happens it is going to be, folks looking to you to say, why didn't you do something? And I appreciate you trying to do something in advance of a problem. I appreciate that.

Earlier this week the EPA Administrator announced the agency's proposed repeal of the Clean Power Plant. The rule represented an unprecedented intrusion into the states' control over their energy policy, threatened to raise rates, impact grid reliability, as well as harm energy-intensive and trade-exposed industries. Under this rule the EPA was basically establishing the nation's de facto energy policy.

Yes or no, wouldn't you agree with me that that is your job at the Department of Energy to establish the nation's energy policy?

Secretary PERRY. Yes.

Mr. GRIFFITH. Thank you.

Secretary PERRY. Well, let me filibuster just a second.

Mr. GRIFFITH. All right.

Secretary PERRY. Yes, working with Congress.

Mr. GRIFFITH. Well, and I appreciate that.

As Secretary will you commit to challenging other federal agencies if their rules and regulations raise energy prices, limit energy production, or otherwise impact the Department of Energy's prerogatives in national energy policy? Yes or no.

Secretary PERRY. Yes.

Mr. GRIFFITH. Thank you.

In addition to the Clean Power Plant, the past Administration's EPA issued standards for new power plants that effectively mandated carbon capture sequestration coal generation even though, as the committee's oversight showed, the technology was not yet truly viable for commercial power generation. Yet, the previous EPA barreled forward with an unworkable rule.

I think DOE has the appropriate expertise to collaborate with the EPA on technology decisions affecting the energy sector. Would you agree with me on that? Yes or no.

Secretary PERRY. Yes.

Mr. GRIFFITH. Now I am going to let you answer however you want to, what role do you see for the DOE to ensure future EPA rulemakings reflect appropriate assessment of the true commercial viability of technology?

Secretary PERRY. There is a good working relationship between the cabinet members and their agencies. And I think you bring a good point that we don't work in silos. And then we should be looking for partners in different places so that, number one, we are not duplicating something that is going on in another agency, but there is also some synergy that can come from that.

And I will give you one example. And excuse me for kind of diverting here. But the Department of Energy is standing up an Office of Veterans' Health. We are working with the VA, with the Health and Human Services, and with DoD through DARPA. And Congressman McNerney has been a strong advocate for the VA and for the veterans in particular. Not necessarily the VA but for the veterans. And that is a great example of how we can talk to each other, coordinate with each other, and come up with a better product for the people of this country, whether it is on innovation, whether it is on energy policy, or for that matter just how we take care of our veterans.

Mr. GRIFFITH. Well, I think that was one of the problems that, one of the frustrations that I had with the prior administration is oftentimes I would agree with the Department of Energy, even in the prior administration, but the actions of the Environmental Protection Agency prevented us from getting places. So when they pushed on one technology like carbon catch and sequestration, which I am not against but let's make sure it is viable, they basically tabled a lot of other things like, one of my favorites, chemical looping.

I know DOE was putting money into it, which I encourage you to continue to do, but at the same time EPA wasn't really looking in that direction. And I think it created a situation where we had two different agencies going in different directions. So I would encourage you to work with your colleagues and let's all row in the same direction and we can get more done for the people of the United States of America.

Thank you so much for being here today.

Secretary PERRY. Yes, sir.

Mr. GRIFFITH. And with that, Mr. Chairman, I yield back.

Mr. BARTON. The gentleman yields back. The chair recognizes the distinguished gentleman from Vermont, Mr. Welch.

Mr. WELCH. Thank you very much. Thank you, Mr. Secretary.

One of the areas of bipartisan effort has been on performance contracting. And I know you have made some remarks, energy saving performance contracts. That is a promising area because it doesn't burden on regulations. It is not regulatory-dependent, and very much a partnership with the private sector.

You are going to be developing, or the Administration is, an executive order that will be released in the coming weeks. And I just want to really make sure that you will do everything you can to make certain that the performance contracting is embedded in it. That is something that colleagues on this committee have worked on. Mr. Mulvaney, when he was here, worked on it. Just a quick comment, some reassurance on that.

Secretary PERRY. Yes, sir. You can expect both myself and I think other members of the cabinet, along certainly with Nick.

Mr. WELCH. Will you set some goals, targets? We had a significant ambitious target in the Obama administration.

Secretary PERRY. Yes, sir.

Mr. WELCH. We need a target to reach.

Secretary PERRY. Yes. I don't know whether there will be numerical targets or not. But certainly the concept and we will push forward the——

Mr. WELCH. I would like to follow up——

Secretary PERRY. Yes, sir.

Mr. WELCH [continuing]. With the Administration on that.

Secretary PERRY. Absolutely.

Mr. WELCH. And I think a lot of us would like to work together with you on it.

Secretary PERRY. Yes, sir.

Mr. WELCH. The second thing, Mr. Latta was asking you about Energy Star. And, again, many of us have bipartisan support for that. And there is this question about whether there should be some changes. And your department has some responsibility. EPA has some responsibility.

What are the responsibilities in the EPA that would not be done if in fact everything is turned over to DOE?

Secretary PERRY. Well, I am not sure that there would be anything that would be lacking.

Mr. WELCH. Well, they have jurisdiction over some things. You have jurisdiction over others. What do you have jurisdiction over that overlaps——

Secretary PERRY. What I thought you were saying is, if they were all consolidated into the Department of Energy what would get discarded? And I am not sure anything would necessarily get discarded other than a lot of bureaucracy.

Mr. WELCH. Well, but I get it on the bureaucracy. And less is better. I am with you on that.

Secretary PERRY. Right.

Mr. WELCH. But the functions that have to be performed that now are done by the EPA with respect to maintaining the Energy Star Program. So my question is how would your agency meet those requirements?

Secretary PERRY. Any requirement that requires a scientific look where you are taking and—and then that is going to be at DOE obviously.

Mr. WELCH. Here is what I will ask. With bipartisan support on Energy Star, we want to make it strong. If there is going to be a discussion about having it all be done in one place versus two, we have got to make certain that the integrity of the program is maintained. I would like to work with you on that. OK?

Secretary PERRY. Well, here is how I will finally address this. You make the rules and we will follow the instructions of Congress.

Mr. WELCH. All right. Thank you.

Mr. BARTON. Would the gentleman yield just—

Mr. WELCH. Sure.

Mr. BARTON. We are going to do a DOE reauthorization bill. And we are trying to make it bipartisan. And if that happens, your suggestions will be seriously considered from this side, I guarantee you.

Mr. WELCH. I appreciate that. Thank you very much.

Another issue here is this proposed rule that was going to focus on coal and nuclear, I get that. But it is expensive according to the study, so about \$800 million to \$3.2 billion a year. And this isn't exactly your area of concern but it is the concern of many of us on the committee, including Mr. McKinley and Mr. Griffith, the coal miners have been hammered. And they lost their healthcare. And we took steps in Congress to address that. But they have lost their pension.

And if we are talking now about spending \$800 million to \$3.2 billion a year for the coal companies but we don't address the pensions that these miners have earned going into those mines day in and day out, many of them for 30 years, and the pensions are like \$540 a year, where is the justice in that?

Secretary PERRY. Mr. Welch, one of the things that I can share with you is that if for whatever reason the companies that are still being able to hang on by their literal fingernails go under, then the pensions that those companies have, the healthcare that those companies are putting forward today will just exacerbate this problem even more. But that is not the main reason we are talking about what we are doing with the 403. The main reason we are talking about doing this with the 403 is for the resiliency and the reliability of the grid.

Mr. BARTON. The gentleman's time has expired.

Mr. WELCH. Thank you.

Mr. BARTON. The chair now recognizes the gentleman from Ohio, Mr. Johnson.

Mr. JOHNSON. Mr. Secretary, thank you for being here today. We call you several titles: Mr. Secretary, Governor. And a lot of folks don't realize that long before that you wore another title, you were an Airman. And as an Air Force veteran I want to thank you for your service. And I look forward to working with you to advance your concern for our nation's heroes and our veterans. That is important.

As you know, Mr. Secretary, eastern and southeastern Ohio is blessed with a wealth of energy resources from the abundance of coal, oil and gas, and critical nuclear technologies. And it truly has every major resource to supply our state and our nation with the energy that we need. So we are well positioned to advance the idea of energy dominance and making the Appalachian corridor all that I know you and the President, the Administration want it to be. So I look forward to working closely and following closely FERC's work regarding your recent request relating to the power markets.

These are complex issues surrounding the power markets. And FERC has been looking at these power issues, power price issues for some time now, especially with an eye toward grid stability. And I think encouraging the Commission's continued work in that regard and on those issues is very helpful.

I also want to thank you for your recent visit to Piketon, Ohio. As you know, Piketon is home to a highly-skilled workforce. You talked about workforce in your comments today, that workforce being capable of operating critical domestic uranium enrichment technology. And the cleanup efforts underway there at the former Portsmouth Gaseous Diffusion Plant is equally important to repurpose that property to make it another job creator for southern Ohio.

So I look forward to working with you on those issues, specifically ensuring that America has the domestic enrichment capability to meet our national security needs, along with keeping the clean-up operations on track.

Now, Mr. Secretary, I would like to discuss energy exports. As President Trump has made that a clear priority with his energy dominance agenda, encouraging exports, whether that is coal, natural gas, or nuclear technology is crucial to ensuring these energy industries remain a vital component of our domestic economy, along with strengthening our geopolitical ties. And I don't have to remind you that DOE plays a critical role in the vitality of America's civil nuclear industry's engagement in international commerce through what is known as the Part 810 process.

Energy and Commerce, this committee, has long recognized the economic and national security value of a strong American presence in these foreign markets. The previous administration initiated some targeted process reforms which I understand are still being implemented. So, do you, Mr. Secretary, acknowledge the critical importance of maintaining our American presence in international civilian nuclear markets? And will you provide your commitment to implementing further efficiencies in the Part 810 approval process?

Secretary PERRY. Yes, sir.

Mr. JOHNSON. OK, great.

Additionally, under your leadership DOE—and we talked a little bit about this, you partially answered this question already—under your leadership DOE has approved multiple LNG export applications. In your view, what should Congress do to ensure the U.S. cultivates and maintains a leadership role in LNG exports? And are there any barriers to LNG exports that should be addressed and we focus on?

Secretary PERRY. Well, obviously the ability for the United States to be a leader in exporting LNG, the jobs, the economic impact that it has. Certainly in your area of the state where you are sitting on top of—I suppose your part of the state still has part of the Marcellus and——

Mr. JOHNSON. All of it.

Secretary PERRY [continuing]. Utica underneath that. And so, coming from a state that has been blessed with an extraordinary amount of gas, other areas, and there may be places, Mr. Tonko's, who we don't even know yet as we have identified. I go back to 10 years ago there was a guy making a pretty good living the peak oil speech, that we had found it all and that we didn't—well, maybe, maybe not. But the point is being able to send that gas around the world, as I said earlier.

I won't repeat all that, but it is incredibly important from a domestic economic standpoint and from a global national security standpoint——

Mr. UPTON. The gentleman's time has expired.

Secretary PERRY [continuing]. To have that out in the market.

Mr. JOHNSON. Thank you, Mr. Secretary.

And thank you, Mr. Chairman. I yield back.

Mr. BARTON. I now want to recognize the gentleman from New York, Mr. Tonko, for 5 minutes.

Mr. TONKO. Thank you, Mr. Chairman. Thank you, Secretary Perry for joining us at the subcommittee.

Earlier you were asked about the ARPA-E program. I just want to understand your answer clearly.

Secretary PERRY. Sure.

Mr. TONKO. Do you oppose the elimination of the program?

Secretary PERRY. I am sorry, which program?

Mr. TONKO. ARPA-E.

Secretary PERRY. ARPA-E. No, sir. I hope I made pretty clear in my remarks that I think the ARPA-E program has its place. Does it need to be restructured? And Chairman Barton and I are in conversation about that at this particular point in time.

But is it called ARPA-E, is it called something else? I will let——

Mr. TONKO. Do you disagree that it should not be eliminated? Do you think it should be eliminated?

Secretary PERRY. Here is what I agree with. I agree that innovation is the real lifeblood of this country and government does have a role in making sure that——

Mr. TONKO. Thank you.

Secretary PERRY [continuing]. Technology gets to the commercialization standpoint, and government plays a role in that.

Mr. TONKO. OK. It is a beneficial program to districts like mine. And I would hope that we would grow it, not reduce it or eliminate it.

Secretary PERRY. Yes, sir.

Mr. TONKO. It is clear that many members have both substantive and process concerns with your recent Notice of Proposed Rule-making. It was reported that you said the Obama administration had its thumb on the scale of energy markets to the detriment of base load industries. Could you provide examples of what you mean by that?

Secretary PERRY. Yes, sir. What I mean was is there is clear—and, listen, administrations get elected and elections have consequences. And for 8 years President Obama was the President of the United States and he had a clear, philosophical——

Mr. TONKO. Examples. Examples so we can get right to that.

Secretary PERRY. Yes, sir. Whether it was putting money into clean energy programs, whether it was putting money into batteries. Sometimes they were——

Mr. TONKO. Clean energy programs.

Secretary PERRY [continuing]. Good procedures, sometimes they weren't. I am going to suggest to you Solyndra wasn't a good idea. Maybe that one wasn't a place that—So it is about using good, thoughtful processes. It is the reason I created when I was back in the State of Texas the program——

Mr. TONKO. The examples again. The examples.

Secretary PERRY. I just gave you one, the——

Mr. TONKO. But others?

Secretary PERRY. Whether the clean energy across the board.

Mr. TONKO. Are you talking about renewables?

Secretary PERRY. I am talking about clean energy. I will tell you what I will do, I will try and get you a list of all of those programs and do that.

Mr. TONKO. OK. Did it include renewables?

Secretary PERRY. Well, if you consider battery technology a renewable, yes, I guess it would.

Mr. TONKO. But renewable power itself: ITCs, PTCs?

Secretary PERRY. I am not sure what you mean by that.

Mr. TONKO. Well, the Investment Tax Credits or Production Tax Credits, are you upset with that? Is that a thumb on the scale?

Secretary PERRY. I am not upset with them. I just think it is a conversation we need to have so that——

Mr. TONKO. But is it an example of what you mean about the thumb on the scale?

Secretary PERRY. I am talking about when you are sending clear messages through, whether it is the EPA or whether it is through the DOE that these are the programs, these are the places that we want the Administration to expend dollars. I will be more than happy to try to get you a list——

Mr. TONKO. So were ITCs and PTCs part of that then?

Secretary PERRY. Have they been used as a way to influence the market? Yes.

Mr. TONKO. Well, weren't they passed by Congress?

Secretary PERRY. That doesn't mean everything that Congress does I agree with.

Mr. TONKO. OK. Well, you are pointing the finger at the Obama administration. But I would suggest that they were authorized by this Congress, a Congress in 2015 when your party was in control, so.

But if you can get us a list of those, please.

Secretary PERRY. I think that would probably be a better way to do this.

Mr. TONKO. All right. Do you agree with the DOE assessment that distribution systems are responsible for over 90 percent of total electric power interruption?

Secretary PERRY. Ask the question again.

Mr. TONKO. Rather than lack of generation. Do you agree with that report?

Secretary PERRY. That 90 percent of?

Mr. TONKO. Of interruptions were caused by distribution systems rather than lack of generation?

Secretary PERRY. I don't know the details of the report about all the ways that it was studied. I think the idea to be making a—

Mr. TONKO. OK.

Secretary PERRY [continuing]. Black or white, yes or no decision on that question is the—

Mr. TONKO. Well, let me ask this then. What factors did you consider when deciding that it would be more cost effective to support specific types of generation to enhance reliability rather than shooting right out and improving infrastructure?

Secretary PERRY. I think the cost-effective argument on this is secondary to whether or not the lights are going to come on. And I think it is really important for—

Mr. TONKO. Did you measure costs to the consumer when you did these, because that would be important?

Mr. BARTON. That has to be the last question. The gentleman's time is expired.

Mr. TONKO. Can he answer the question?

Secretary PERRY. I think you take cost into account. But when it comes to, what is the cost of freedom? What does it cost to build a system to keep America free? I am not sure I want to just put that straight out on the free market and say, OK, whoever can build the cheapest delivery system here to keep America free, that is the same argument I make on the energy side.

Mr. TONKO. But my businesses and manufacturers are upset about the cost to them of your proposal, so.

Secretary PERRY. Well, I am concerned about a citizen that is calling you up and saying, Why did you not address this issue when we had the opportunity to in 2017.

Mr. BARTON. The gentleman's time has expired.

Secretary PERRY. The electricity in my house is not on. My family is freezing to death.

Mr. BARTON. Mr. Secretary, the time to answer has expired.

Mr. TONKO. Thank you, Mr. Secretary.

I yield back.

Mr. BARTON. All right. We want to go to the gentleman from College Station, Texas, Mr. Bill Flores, for 5 minutes.

Mr. FLORES. Mr. Secretary, it is great to see you.

Secretary PERRY. The senior class of Texas A&M.

Mr. FLORES. That is right. I am thrilled that President Trump picked a fighting Texas Aggie to serve in your position. So I am honored to have you here today.

Secretary PERRY. Thank you, sir.

Mr. FLORES. I will give you an example that you have used to respond to questions like the one you just had when you were badgered a few minutes ago. Australia had a large blackout. It started out as a weather-induced incident. But what they quickly found out is they had an imbalance in their grid. They didn't have sufficient base load capacity to back up their wind capacity, and as a result several million people were without power for quite a long period of time. So that is something that you can use to talk about what you are trying to prevent with your order to FERC that I think would be helpful.

I would like to move on to NAFTA for a minute. As you know, NAFTA has created a robust energy trading market between the U.S., Mexico, and Canada. And in particular, following Mexico's liberalization and privatization of their energy business we have had a huge increase in energy flows across the border, particularly between Texas and northern Mexico. And this has resulted in a trade surplus to the United States, or for the benefit of the United States.

I am concerned that the U.S. Trade Representative is making proposals with regard to NAFTA that would short circuit those gains that we have had in terms of our ability to export energy to Mexico. And so I was going to ask you, my question is this: are you consulting with the Administration, particularly with the U.S. Trade Representative, about making sure that we get NAFTA 2.0 done correctly so that we have a robust energy market with energy and Canada?

Secretary PERRY. We are, Mr. Flores. And I have been in direct contact with Pedro Joaquin Caldwell, my counterpart in Mexico, as well as Jim Carr, my counterpart in Canada. And we are going to have a trilateral meeting in Houston the 13th through the 15th of November to discuss this and other issues, particularly a North American energy strategy. We think it is really important that this—actually Western Hemispheric, but in particular the North America region is as attached to the hip as we can be, and supporting each other, and developing an energy strategy that will take care of us for a while.

Mr. FLORES. Particularly I am pleased to hear that you are going to stay engaged in that process because I think it is important for the United States as a whole, and Texas in particular.

I really like the approach of energy dominance that you and the Administration have adopted. And it has huge geopolitical implications as the United States becomes energy secure. A great example is Lithuania. I mean they have a ship there called the Independence. Imagine that name, Independence. And they use it to liquify LNG that is imported from around the world, but particularly from the United States. That has changed Lithuania from being dependent on Russian gas to being a net energy supplier to its Baltic neighbors. I think that has huge implications geopolitically.

So I appreciate your efforts with the Administration to come up with this idea of energy of energy dominance.

But moving on, how has this new age of energy abundance benefitted our global competitiveness and allowed us to position ourselves as a global energy superpower?

Secretary PERRY. Well, the short answer is in the next 24 months the U.S. will be a net energy exporter in totality. That is both crude and which Chairman Barton carried that piece of legislation, too, and I am sure you supported it, allowing us to be the economically—that is a powerful issue. And then, obviously, the geopolitical side of that when it comes to supporting our allies and getting them some options to other sources of energy. It is going to speak volumes about America's role in global issues going forward.

Mr. FLORES. I have a couple of other questions I will submit for the record in the interest of time. But I do have one final question.

Recently the House passed H.R. 2910, which is one of my pieces of legislation, called Promoting Interagency Coordination for the Review of Natural Gas Pipelines Act which improves FERC's permitting process, or FERC's role in the permitting process. Do you agree that it would help to have one agency acting as the lead agency for the purposes of coordinating the various environment reviews for pipeline construction?

Secretary PERRY. I will put on my previous hat as a former governor of Texas. It would make abundant good sense to always keeping the people's needs and the safety and environmental issues paramount, but to find more efficient, effective, streamlined ways to permit projects is going to help this economy. There is nothing that we did in the State of Texas that sent a more powerful message for economic development than having a stable permitting and regulatory climate.

Mr. FLORES. That is great. Thank you for being here today. It is great to have you as our lead cabinet witness.

I yield back the balance of my time.

Secretary PERRY. Thank you, sir.

Mr. BARTON. The gentleman's time has expired. And we now recognize the gentleman from Iowa, Mr. Loebsack, for 5 minutes.

Mr. LOEBSACK. Thank you, Mr. Chair. Great to have you, Mr. Secretary, today. I am really glad that you are here.

I have learned a lot being near the end of the dais here. I get to listen to a lot of questions and hear the answer.

Secretary PERRY. Me too.

Mr. LOEBSACK. First of all, thank you for your service and your commitment to veterans. I have a couple of my own children, one who is going to be deployed any minute now to Kuwait. So thank you very much, I appreciate it.

I liked what you said at the outset, too, that our national security depends upon our energy security. There is no question about that, whether we are talking about oil imports or whatever the case may be. And so I do appreciate that comment. And you have talked about diversity, including wind, solar, a variety of different—it is kind of all-of-the-above approach.

I am from Iowa, and while in the aggregate Texas does have more wind energy output than Iowa does, percentage-wise, as you mentioned,——

Secretary PERRY. Right.

Mr. LOEBSACK [continuing]. Texas about 12 percent, and Iowa is about 37 percent.

Secretary PERRY. Yes, you do a great job.

Mr. LOEBSACK. And we are moving up all the time.

And in your confirmation hearing you said, "If confirmed, I will advocate and promote energy in all forms, and that certainly includes renewables." But then just last week EPA Administrator Pruitt attacked these provisions by saying that he would like to see them eliminated.

And I quote what he said, Secretary Pruitt again, "I would do away with these incentives that we give to wind and solar."

You know that the production tax credit for wind, the investment tax credit for solar have really driven billions of dollars into rural America in particular. And I represent 24 counties in southeast Iowa. I visited a new wind farm that MidAmerican is putting up just recently. And it has helped consumers, of course, save money, created all these new jobs.

Just a very simple question, yes or no. Do you agree with Mr. Pruitt that we have got to end these programs, these incentives that we are giving to wind and solar?

Secretary PERRY. I can't give you a yes or no. I can refer you back to what I said about my children earlier. There is a place for these subsidies as we build innovation and we commercialize it. There is some point that you say you are on your own. You can stand or fall on the market.

And I would suggest to you that both the solar and the wind industry is approaching that very mature stage. You can't on one hand say, we are this clear deliverer of a base load of energy; oh, but we need to be, continue to be treated like we were when we were not that mature. So finding the balance there and finding the right time to say, you are mature enough, out the door.

Mr. LOEBSACK. Well, I will say that rural America is hurting big time, and these investment tax credits for solar, and production tax credits for wind have been very, very wonderful for rural America, for our farmers, and for clean, renewable energy, and also for making sure that we are secure in the energy sector, and that is national defense as far as I am concerned.

I really was hoping that you could give me a yes or a no whether you agree with Secretary Pruitt or not.

I would like to mention the Renewable Fuel Standard, too, if I could. Again, I think it is about 25 percent of our oil that we actually import. I think half of that comes from an area where my stepson is being deployed as we speak. And it was very disappointing, I think, for a number of us in states that really do produce a lot of ethanol and biodiesel. Especially when it comes to ethanol it was very, very disheartening for us to see that the volumes were reduced when it comes to ethanol with respect to the EPA's proposal for next year.

And this is a bipartisan concern. We have had our senators from Iowa speak out about this, and they are Republican. I am the only Democrat from the State of Iowa. We are united on this. And so I want to ask you, do you believe that there is a real commitment from this Administration to the Renewable Fuel Standard? Or are

our fears to be confirmed that this Administration is backing off on that commitment?

Secretary PERRY. Well, I would refer you to the remarks that the President has made about Iowa and Iowa corn growers and ethanol. He has made it abundantly clear to me—I can't speak about any of the other cabinet members—but he has made it abundantly clear to me that he is supportive of it.

Mr. LOEBSACK. I can just say this, and look, the President has said a lot of things on a lot of different issues, and not always consistent from day to day, minute to minute, or month to month, and so that is, I think, a big part of why we have a lot of concerns in Iowa about the commitment of the Administration to the Renewable Fuel Standard.

Secretary PERRY. Yes, sir. I will leave that argument to some other folks. I just know what he said to me.

Mr. LOEBSACK. Do you have commitment yourself to the RFS?

Secretary PERRY. I think exporting American energy is where our focus needs to be.

Mr. LOEBSACK. No offense, but I do believe we have to make sure that we are not so dependent upon energy——

Secretary PERRY. That is right.

Mr. LOEBSACK [continuing]. Being brought in from the outside.

Mr. BARTON. The gentleman's time has expired.

Mr. LOEBSACK. Thank you, Mr. Secretary, I appreciate it.

Secretary PERRY. Yes, sir, thank you.

Mr. BARTON. I want to announce we have got about three more members. And we have got lunch in my office, which is like 30 seconds, if you and your staff have the chance——

Secretary PERRY. Great.

Mr. BARTON [continuing]. To come down and eat as soon as we get through. I know you all are on a tight schedule, but I think it is Texas barbecue, so it might be worth coming by.

The gentleman from North Dakota, Mr. Cramer, for 5 minutes.

Mr. CRAMER. Thank you, Mr. Chairman.

I am from the very north tip of Texas. I am the only member, it is hard sometimes to be among all these Texans who stick so closely together, but I am proud to be part of the same, same cult, I suppose you could say.

I cannot tell you how much I appreciate you being here and how refreshing you are to listen to, Mr. Secretary. It is very impressive. And I love the fact that you have taken center stage on all things energy, realizing there are lots of other agencies that have the energy nexus clearly. But you are providing real leadership, and I appreciate that.

And I especially appreciate your references earlier to the importance of the intellectual value chain of all things nuclear. I don't think that can be overstated, so thank you for that. And for the fact that we have acquiesced as a country much of our leadership on nuclear, including the enrichment of uranium. So thank you for that.

I want to focus a little bit back on, and want to say thank you for your leadership on searching for a way to properly compensate the inherently more reliable, most reliable sources of base load electricity. I never cease to be amazed by how little regard there

is for having lights on 24 hours a day, 365 days a year around here. Sometimes I worry, Mr. Secretary, that it will require a crisis for some people to remember how important coal and nuclear are. Thank you for focusing on that.

It is entirely appropriate for FERC to take a look at this and give it appropriate value. In fact, I find it rather offensive that some people suggest you are putting a thumb on the scale, when the reality is you are just rebalancing the scale.

Secretary PERRY. Good point.

Mr. CRAMER. Where have people been for the last several decades who suggest that somehow we are manipulating markets? The whole idea of RTO is just to manipulate markets. That is why we have RTOs. It is not a free market. From the subsidies, through the tax code, through DOE grants and loan programs, all the way to public utility commissions in states who have mandates based on portfolio standards, those are all manipulations of markets. Your responsibility is right: make sure the lights stay on. So I appreciate that focus.

With that in mind I am going to ask a couple of questions. And I don't need you to answer them today, but I am hoping you can get back to me on it.

In the proposed Grid Resiliency Pricing Rule, resources that are subject to cost observance or state regulation, state and local regulation, are excluded. And I would like to get an explanation as to why.

And I am wondering if what you meant was only those sources that don't participate in a FERC-regulated wholesale market? Because in North Dakota, where I was once an energy regulator, all of our utilities are virtually, obviously they are either under regulation or they are under regulation by their ownership in the case of the rural electric cooperatives. But they are all subject to rate regulations of some sort. And I want them to be afforded the same economic benefits as a merchant generator, for example. So that is one area I would like to explore a little bit with you later.

I also wonder about the 90-day fuel supply. And I say that because in North Dakota all of our generators are at mine mouth. They are all, all but one small one, literally co-exist with the coal mine itself. So while they may have a 30-day pile next to the plant, the plant is next to the coal mine and there is an 800-year supply. I am wondering if there is not some adjustment that could be made to understand that.

With my remaining minute-and-a-half, though, I want to get to, I need to address something that has been said a couple of times by my friends on the other side of the aisle. They have referenced NERC, as though somehow NERC doesn't support what you are doing. And I pulled up some comments from the NERC, specifically the CEO, regarding the concerns that were raised with your order. I am just going to quote a couple things:

"Higher reliance on natural gas exposes electric generation to fuel supply and delivery vulnerabilities, particularly during extreme weather conditions." This is from NERC now.

"Maintaining fuel diversity and security provides best assurance for resilience."

"Premature retirements of fuel secure base load generating stations reduces resilience to fuel supply disruptions." This is not just simply your heart speaking, this is your experience speaking, and this is NERC's CEO speaking.

Here is another direct quote from him:

"Coal-fired and nuclear generation have the added benefits of high availability rates, low forced outages, and secured on-site fuel. Many months of onsite fuel allow these units to operate in a manner independent of supply chain disruptions."

You are entirely appropriate and right to challenge FERC with this lest we let emotions dictate our policy.

So, with that, as my time runs out thank you for your service, and I look forward to following up on the rest of this.

Mr. BARTON. The gentleman's time has expired.

Last but not least, the gentleman from Michigan, Mr. Walberg, for 5 minutes.

Mr. WALBERG. Thank you, Mr. Chairman. And I assume the invitation for lunch in your offices goes for us, too, that have stayed to the end.

Mr. BARTON. Excuse me?

Mr. WALBERG. I was just asking, Mr. Chairman, I was hoping that your invitation to lunch was included for us as well.

Mr. BARTON. Well, sure.

Mr. WALBERG. Especially since we stayed all the way to the end. But let me just—

Mr. BARTON. We may have to do the loaves and the fishes, but all the members that are here, including my good friend Bobby Rush, are welcome to come to my office. And we will make do with whatever is there.

Mr. WALBERG. Mr. Chairman, you are taking my time right now. But—

Mr. UPTON. I will reset the clock.

Mr. WALBERG. Thank you.

Mr. Secretary, thank you for being here. And those of us who sit this far to the end of the dais, oftentimes it is difficult to sit this far to the end of the dais to listen to what is going on, but you have been very refreshing today. And the fact of your candor and your willingness to not let issues like climate change, like the issues of regulatory concerns get in the way of a whole understanding that we still have to do what we have to do for our people.

And we can debate all these issues, and they certainly have worthiness of debate, but in the end we have to provide the power to keep the lights on and keep grandma and, oh by the way, me warm as well in my house. So, thank you for that.

And I also appreciate your humility, even admitting mistakes. I sat next to you the morning after those mistakes at a breakfast of supporters of you, and appreciate the fact that you are here right now. Thank you for your work.

I represent a district in Michigan that has all of the above in energy production and use. We make things that go into renewable power and ship those around the country. We have the largest coal-fired plant in North America sitting on Lake Erie in my district. We have Fermi 1, 2, and we also have the license for Fermi 3. And it discourages me that Fermi 3, right now the license is there, the

utility is not really thinking about using it at this point in time because of economics and politics.

And so I would like your comments on that. I appreciate your position that you have laid out so far on nuclear energy and how it relates to our entire life here in the United States and security. But what about that? I mean, should we hold these, these plans in abeyance? Are we going to have the opportunity for nuclear power to be used and to be competitive? Or do we just have a license and assume that it is uncertain?

Secretary PERRY. I think it is, thank you, sir, it is important to talk about nuclear energy as part of our portfolio. It doesn't play a more important role than fossil fuel, or wind, or the others. I think having those sectors all be healthy is really important.

And I don't think anyone would argue right now that nuclear energy is healthy. It is not. And it is not because of the regulatory burden that has been in place, the political burden that has been put in place. And I think for our future security, both energy security and our national security, to have that industry be healthy is very important. That means having a supply line of both the products that go into those, the hardware if you will, and the intellectual capital that comes from the young men and women that are going into the university pipeline at this particular point in time to be nuclear energy engineers, et cetera.

So what is next I think is one of the important questions. Just like looking over the horizon and seeing the future of, maybe not too clearly because it is opaque in a lot of ways when it comes to trying to decide or know what is going to happen from a weather phenomenon when we talk about why it is important for us to have that solid and resilient grid.

But the same is true on the nuclear side. Look over the horizon and see what is new. That is what your national labs are involved with, and partnering with the private sector so that we, whether it is small, modular reactors. And when you think about the challenges, Mr. Rush, that we have in Puerto Rico today, it would seem to me that if we had a small cadre of small modular reactors that we could have air-lifted down there and to have plugged in and to make a difference, maybe that is the kind of planning we need to be talking about as a country.

And it is not just in an island environment like the citizens of Puerto Rico find themselves, but in a host of different ways, whether it is events around the world where America can participate. But having this nuclear energy industry healthy again—and I haven't even mentioned the part about our role in keeping America safe from the standpoint of having a nuclear weapons arsenal that is safe and modern. And that is going to only occur if we have the bright, young minds that are coming up through the nuclear programs to populate those positions.

Mr. WALBERG. Well, thank you, Mr. Secretary. And keep speaking the truth in a realistic fashion as you do about energy and its needs. Thank you.

Secretary PERRY. Thank you, Mr. Walberg.

Mr. BARTON. The gentleman's time has expired.

Before we excuse you, Mr. Secretary, one last question and quick answer. How many Senate-confirmed people do you have in DOE right now?

Secretary PERRY. Not enough.

Mr. BARTON. Your staff is holding up three fingers.

Secretary PERRY. Yes. That is why I say not enough.

Mr. BARTON. Do you know how many are yet to be confirmed?

Secretary PERRY. Not that you have ever had to wait on the Senate before. If there is anything that you all can do to kind of—

Mr. BARTON. But you have got three, and probably 10 or 12 are waiting to be confirmed?

Secretary PERRY. At least. Yes, sir. I don't know what the numbers are, but.

Mr. BARTON. The chair recognizes the gentleman from Illinois for one brief question.

Mr. RUSH. One brief question.

Mr. Secretary, my office has been working closely with the Office of Economic Impact and Diversity on efforts to increase diversity in the energy sector. What is the future of that office under your administration, the Office of Economic Impact and Diversity?

Secretary PERRY. Mr. Rush, it is there and the will of this committee and the will of Congress is going to be where, I am going to take my instructions from you and from the members of this committee and from the Senate. It is there. I would suggest to you it is functioning properly and it will continue to get the attention and the respect that it should.

Mr. BARTON. It will be a part of our reauthorization this session, I assure you.

Mr. Secretary, we thank you. The Chair wants to announce that all members have ten days to submit written questions for the record.

This hearing is adjourned.

[Whereupon, at 1:03 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

GREG WALDEN, OREGON
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FIFTEENTH CONGRESS
Congress of the United States
House of Representatives
COMMITTEE ON ENERGY AND COMMERCE
2125 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6115
Majority (202) 225-2927
Minority (202) 225-3641

November 22, 2017

The Honorable Rick Perry
Secretary
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, DC 20585

Dear Secretary Perry:

Thank you for appearing before the Subcommittee on Energy on Thursday, October 12, 2017, to testify at the hearing entitled "Department of Energy Missions and Management Priorities."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on Thursday, December 7, 2017. Your responses should be mailed to Allie Bury, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to Allie.Bury@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,



Fred Upton
Chairman
Subcommittee on Energy

cc: The Honorable Bobby L. Rush, Ranking Member, Subcommittee on Energy

Attachment



Department of Energy

Washington, DC 20585

February 9, 2018

The Honorable Fred Upton
Chairman
Subcommittee on Energy
Committee on Energy and Commerce
U. S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On October 12, 2017, Secretary Rick Perry testified regarding a hearing entitled "Department Of Energy Missions and Management Priorities".

Enclosed are answers to questions submitted by Representatives Barton, McKinley, Hudson, Cramer, Walberg, Pallone, Jr., Sarbanes, Welch, Tonko, Butterfield, and you.

If you need any additional information or further assistance, please contact me or Fahiye Yusuf, Office of Congressional and Intergovernmental Affairs at (202) 586-5450.

Sincerely,

A large black rectangular redaction box covering the signature of Marty Dannenfelser.

Marty Dannenfelser
Deputy Assistant Secretary for House Affairs
Congressional and Intergovernmental Affairs

Enclosures

cc: The Honorable Bobby Rush
Ranking Member



Printed with soy ink on recycled paper

QUESTIONS FROM CHAIRMAN FRED UPTON

- Q1. In recent years, DOE has done a commendable job of establishing its role as a sector specific agency, especially related to cyber threats in the electricity sector. The collaboration and trust that has been developed between the Department and private sector partners is critical when faced with such a dynamic challenge. However, as the threats become more sophisticated and the energy landscape – especially the grid – continues to evolve, cyber threats will only become more challenging for the energy sector.
- Q1a. I understand the department has a strong relationship with the electric sector but what is the current level of engagement with other areas of the energy sector – such as oil and gas, pipelines, nuclear?
- A1a. Per Presidential Policy Directive 21 (PPD-21): Critical Infrastructure Security and Resilience, the U.S. Department of Energy (DOE) is the sector-specific agency (SSA) for the energy sector, which includes both the electricity subsector and oil and natural gas subsector. In that role, DOE leads the Government’s coordination with the Electricity Subsector Coordinating Council (ESCC) and Oil and Natural Gas Subsector Coordinating Council (ONG SCC).

The ONG SCC has been the primary vehicle for coordination with all operational segments of the oil and natural gas industry—drilling, exploration and production, marketing, processing, refining, service and supply, transmission, distribution, and transportation (pipeline, marine, motor, and rail)—on a variety of security and resilience issues, with cybersecurity as a standing agenda item. The meeting is held three times a year with senior cybersecurity and physical security representatives from the oil and natural gas industry and with DOE Office of Electricity and Energy Reliability (OE) leadership and Department of Homeland Security (DHS) Infrastructure Protection (IP) leadership as co-chairs from the government side. Other Federal departments and agencies in attendance include the Federal Bureau of Investigation, Transportation Security Administration, U.S. Coast Guard, and Pipeline and Hazardous Materials Safety Administration. This forum allows the public and private sectors to coordinate oil and natural gas security strategies, activities, and communication across the sector to support the Nation’s homeland security mission. Earlier this year, DOE also took the ONG SCC

to DOE's Oak Ridge National Laboratory to tour and discuss cutting edge research and development work in the areas of cyber and physical security.

Finally, DOE works closely with individual oil and natural gas companies and trade associations on specific projects such as the DOE Energy Sector Security Workshop. The DOE Workshop took lessons learned from the 2015 and 2016 Ukraine cyber incidents and developed a hands-on workshop to train natural gas operators on how to defend their networks against similar attacks.

DHS is the SSA for Nuclear Reactors, Materials, and Waste under the National Infrastructure Protection Plan, and DOE cooperates closely with the nuclear subsector as a supporting agency. Given its critical role in the electricity subsector, DOE maintains a close relationship and awareness of the subsector with nuclear generating companies through the ESCC, the Nuclear Regulatory Commission, and DHS.

Q1b. Is this something that can be improved? If so, how? If not, why not?

A1b. DOE is continuously working with its industry and government partners to improve coordination with the energy sector. For the oil and natural gas (ONG) subsector, for instance, following on the recommendations of the National Petroleum Council's 2014 Enhancing Emergency Preparedness for Natural Disasters Study, DOE conducts regular outreach with the ONG subsector through education, training, and continuous refinement of response coordination procedures at the Federal, State, and local levels.

DOE tests this coordination regularly during its Clear Path energy-focused exercise. This year's Clear Path V exercise occurred in Houston, Texas from May 31 to June 1, 2017, and focused on cross-sector response to a hurricane impacting the Gulf Coast, with particular attention to the interdependencies of the electricity, ONG, and communications sectors. The exercise focused on improving coordination of restoration crews across the different sectors, better integration of access and credentialing of energy responders, and a focus on improved unity of message across industry and government.

- Q1c. As cyber threats become more sophisticated, our energy infrastructure – especially the grid – is becoming more connected. While this digitization and connectivity provide important benefits, it also creates new risk. What is DOE doing to help the sector anticipate threats in order to incorporate security and/or resiliency in grid modernization efforts?
- A1c. Cybersecurity of the energy sector is a priority for DOE, and the Department is working closely with stakeholders across industry, law enforcement, the intelligence community, and state governments to ensure resilience is factored into ongoing grid modernization efforts. DOE works with its energy sector partners, through forums such as the ESCC and ONG SCC, to prioritize efforts to strengthen cybersecurity preparedness in the energy sector, improve capabilities to coordinate cyber incident response and recovery, and accelerate innovative research and development of resilient energy delivery systems.

DOE advances industry-wide cybersecurity risk management and practice by disseminating information through classified threat briefings and security workshops and by providing access to tools and technical resources that are used to improve decision making and inform investments by our sector partners. One of these resources, DOE's Cybersecurity Capability Maturity Model (C2M2), helps organizations evaluate their current cybersecurity capabilities and prioritize and improve future activities to improve them, and has been used by over 1,200 energy sector organizations.

DOE has also worked with Idaho National Laboratory and the Electricity Information Sharing and Analysis Center (E-ISAC) to host the Energy Sector Security Workshop series, which provides energy-sector owners and operators with a hands-on, simulated demonstration of a cyber-attack. The lessons learned from these workshops help to better inform future security and resiliency investments by furthering attendees' understanding of the range of methods and tools, as well as common targets, associated with a cyber-attack. These engagements are further complemented by DOE's partnerships with the E-ISAC, Oil and Natural Gas Information Sharing and Analysis Center (ONG-ISAC), and Downstream Natural Gas Information Sharing and Analysis Center (DNG-ISAC). DOE works with the energy sector ISACs to regularly share threat information and trends with a broad range of industry stakeholders to help them better protect their current networks and inform future security decisions.

In addition to cybersecurity preparedness and information sharing initiatives, maintaining a robust pipeline of cutting-edge technologies is essential to helping the energy sector continue adapting to the changing cyber landscape. As the technology landscape in the energy sector continues to advance, including the growing use of digital communications and control systems to improve reliability, so does the capabilities of the threat. DOE has been working with the energy sector for more than a decade to get ahead of this continual evolution through investments in advanced R&D to develop resilient systems that can survive a cyber event without loss of critical functions. More than 35 tools and technologies resulting from OE cybersecurity research, development and demonstration (RD&D) projects have transitioned to the energy sector and are in use today. And nearly 1,000 utilities in all 50 states have purchased technologies developed under our Cybersecurity for Energy Delivery Systems research program.

DOE's current RD&D portfolio of more than 60 projects builds on new concepts from past R&D to develop groundbreaking cybersecurity solutions. Researchers are developing tools and technologies that can be transitioned to the energy sector to prevent, detect, and mitigate cyber-attacks intended to disrupt the computers and networks that manage, monitor, protect, and control energy delivery, the power grid, and oil and natural gas.

For example, DOE recently worked with Chevron, the Department of Defense, and Sandia National Laboratories to demonstrate a resilient microgrid using a moving-target defense technology to dynamically and randomly change the virtual configuration of the network to prevent cyber reconnaissance and disrupt cyberattacks.

DOE also worked with ABB, Bonneville Power Administration, and the University of Illinois to develop and demonstrate a project for the Collaborative Defense of Transmission and Distribution Protection and Control Devices against Cyber Attacks (CODEF), which has the capability to automatically detect and reject malicious commands that could jeopardize physical grid operations if acted on. CODEF anticipates the effects of each command and only acts on those that will support grid stability. This

type of solution is especially effective in providing resilience as it can detect malicious activity regardless of the source, be it an insider threat or an external actor.

DOE also recently launched several new R&D projects with DOE's national laboratories and energy sector partners, including a project with Oak Ridge National Laboratory and Los Alamos National Laboratory focused on Quantum Key Distribution systems that enable real-time detection of adversarial intrusion on control system networks, and a project between Lawrence Livermore National Laboratory and San Diego Gas & Electric to develop a technology to rapidly detect interference in the precisely synchronized time signals used by phasor measurement units for wide area situational awareness of power grid operations.

- Q2. A number of different National laboratories have programs in cybersecurity. How do you approach managing these efforts to avoid unnecessary duplication and ensure focus on our national and energy security needs?
- A2. The DOE national laboratories are at the forefront of science and technology efforts to improve security and resilience of energy systems, including cybersecurity. The cybersecurity knowledge and technologies from the 17 national laboratories inform DOE's comprehensive strategy for energy sector security. This strategy includes strong preparations (training, exercises, and threat intelligence gathering), a robust response, and scientific innovation. Working with the national laboratories, our sector partners, and interagency colleagues, DOE leads collaboration to develop and implement projects and programs to support the three strategic areas. DOE works closely with several coordinating councils, such as the Electricity Subsector Coordinating Council (which includes 21 utility CEOs) and Energy Government Coordinating Council, which lead government-industry partnerships to enable strong cybersecurity for U.S. energy systems.
- Q3. Congress is committed to its strong relationship with Israel in areas of mutual energy interests. To that end, language has been included in both the House and Senate FY 2018 Energy and Water Appropriations bill to establish the U.S.-Israel Center of Excellence in Energy Engineering and Water Technology as authorized by the United States-Israel Strategic Partnership Act. This joint research and development center between the U.S. and Israel shall focus on collaborative research initiatives among universities, research institutions, and industry partners that could include hydrocarbon extraction and processing, energy infrastructure and policies, process water treatment, alternative energy

sources, and impacts on coastal communities. As you know, Louisiana has a deep history and level of expertise in these areas.

Q3a. Will you please provide the Committee an update on the status of discussions with Israel on this front and an expected timeline for DOE to establish this center?

A3a. The Department has had preliminary discussions with Israeli government officials regarding the expected timeline for the establishment of the Center. Currently, the Department is working with the State Department to complete the Circular 175 in order to have authority to officially begin negotiations with the Israelis regarding the Center. The notional timeline, subject to the availability of funds, is to have the Center operational between 12-16 months.

Q3b. In what ways is DOE ensuring that the center will have an impact on a national scale in these areas?

A3b. Since January, to encourage participation nationally, the Department has engaged in discussions regarding the Center with the Government of Israel and other potential stakeholders from the United States covering topics of potential mutual interest in energy. These discussions showed promising indications of interest in collaboration across multiple partners throughout the country, and also indicated strong interest on the part of the Department's National Labs in working with the Center. Utilizing the labs and the wide-ranging interest that already exists there will help ensure that the Center has an impact on a national scale in the U.S., and will support its sustainability as well as increase the profile of its work.

QUESTIONS FROM REPRESENTATIVE JOR BARTON

- Q1. DOE has vital energy security responsibilities, but in the last Administration, we watched DOE sit on the sidelines as EPA set energy policy, undermining its role to protect the public interest. At the same time, fully 60% of DOE's \$30 billion budget goes towards nuclear security missions, weapons modernization, and addressing its vast environmental liabilities. DOE's National Nuclear Security Administration has estimated weapons modernization will surpass \$300 billion over the next two decades; the department will have to spend more than \$250 billion to cleanup its sites. As Secretary, you have the ultimate ownership and responsibility for DOE's performance on all these areas—and you are working with agency put together in 1977.
- Q1a. What are your plans to review whether DOE's existing structure is aligned with executing its most critical missions?
- A1a. On December 15, 2017, the Department of Energy (DOE) announced its intent to modernize the agency's organizational structure to advance its policy goals consistent with its statutory requirements.

Under the DOE Organization Act, the Secretary of Energy has the authority to organize the Department in order to meet the needs of the current time and support and advance the policy priorities of the new Administration. Those priorities are: achieving U.S. energy dominance; protecting our energy and national security; advancing innovation; and improving outcomes in environmental management.

Under the new plan, the office of Under Secretary for Science and Energy (established in 2013 during the previous Secretary's tenure) has been separated into two Under Secretary positions so that there will once again be three Under Secretaries: the Under Secretary of Energy; the Under Secretary for Science; and the Under Secretary for Nuclear Security and NNSA Administrator, as is consistent with DOE's statutory mandate.

The Under Secretary of Energy will focus on energy policy, applied energy technologies, energy security and reliability, and certain DOE-wide management functions, while the Under Secretary for Science will focus on supporting innovation, basic scientific research, and environmental cleanup.

In addition, elements of the Under Secretary for Management and Performance's portfolio will fall under the responsibility of the Deputy Secretary of Energy. Another change to the agency's organization includes replacing the Office of Energy Policy and Systems Analysis with an Office of Policy.

These measures will enhance DOE's focus on early-stage scientific research and development and energy technology innovation, while improving environmental and legacy management outcomes.

- Q1b. Will you work with the Committee to identify where statutes or authorizations need to be updated?
- A1b. Yes, DOE consulted with bipartisan staff of the Committee on the administrative changes noted above and looks forward to working with the Committee on any future modernization initiatives.
- Q1c. What are your priorities for performing your national security responsibilities and how do you intend to reassert DOE's role on setting energy policy for this nation?
- A3c. Ensuring the safety of every American citizen from various national security threats such as cyber-attacks, nuclear proliferation, aging weapon stockpiles and environmental contamination is the top priority of DOE. Congressionally appropriated funding guides DOE's efforts in these areas. DOE is committed to the Administration's focus on promoting American energy dominance. By responsibly developing America's abundant resources, combined with the technical and engineering know-how of the American people in the private sector, at DOE and at the national laboratories, America can pursue an energy strategy that will benefit our people, our economy, our environment and our national security.
- Q2. In the Energy Independence and Security Act of 2007, the Bureau of Energy Resources was created at the Department of State—effectively providing the State Department its own energy office.
- Q2a. Please describe how DOE and State work together on energy policy?

- A2a. As provided in the DOE Organization Act of 1977, DOE establishes and implements policies regarding international energy issues that have a direct impact on research, development, utilization, supply, and conservation of energy in the United States. DOE also undertakes activities involving the integration of domestic and foreign policy relating to energy, including provision of independent technical advice to the President on international negotiations involving energy resources, energy technologies, or nuclear weapons issues, in coordination with the Secretaries of State, Treasury, and Defense.

DOE coordinates its strategies and papers on international energy issues with the State Department, including its Bureau of Energy Resources (ENR), State's regional bureaus and our embassies, as well as with Defense, Treasury, Commerce, and other agencies as appropriate and participates in the interagency process directed by the National Security Council. DOE coordinates with the State Department on international energy issues in multilateral energy organizations and institutions, including the International Energy Agency (IEA), the International Energy Forum (IEF), G-7, and G-20.

DOE works with State Department officers and U.S. embassy locally employed staff, including with DOE overseas staff, where energy issues are critical to foreign policy objectives to provide DOE information and analysis on energy issues abroad and on the integration of U.S. domestic and foreign policy relating to energy to address regional and local energy objectives and support economic, political, and foreign policy objectives. State Department Foreign Service Officers and locally employed staff at U.S. embassies assist DOE officials and energy attachés to facilitate meetings with energy counterparts abroad, provide background briefings, and assist with reporting through official channels.

- Q2b. Please identify whether and how cooperation may be improved?
- A2b. State Department Foreign and Civil Service officers have long and demonstrated expertise in foreign policy and can provide insight into foreign country energy policies. However, DOE has worked with State to deploy DOE energy attachés with technical expertise in various regions. Mutual recognition of each agency's respective expertise and two-way coordination that allows DOE to better consult on State's efforts in the energy sector would strengthen overall foreign policy in the energy space and strengthen

relations with foreign energy counterparts. Furthermore, the establishment of delineated roles for both DOE and State regarding international energy policy, would help to establish optimal constructs for interagency consultation, reporting and overall effectiveness with international counterparts.

- Q3. Please describe the role of DOE, Department of Commerce and the State Department to help facilitate US Energy businesses within foreign markets, including whether they have complementary roles or are duplicative in any way.
- A3. DOE through its Office of International Affairs (IA) coordinates with U.S. embassies, including DOE representatives attached to select embassies, the Department of Commerce (DOC), and foreign energy ministries to identify potential market opportunities. DOE, unrivaled in its extensive energy policy expertise and technical and scientific expertise of its program offices and National Labs, utilizes its resources and expertise to assist our international allies and partners in identifying energy security risks within their own energy sectors, ranging from infrastructure to diversification of energy resources to energy efficiency and support efforts to enhance their energy security, including advice on policy and regulatory structures that encourage U.S. investment and trade. In identifying these risks and policy issues, DOE is able to emphasize the exceptional capabilities of U.S. companies to provide innovative technology and alternate, competitive sources of energy supply. U.S. embassy Chiefs of Mission, DOE energy attachés, State Economic and Commercial officers, as well as Foreign Commercial Service Officers share the responsibilities to help facilitate U.S. energy businesses within foreign markets and promote U.S. exports of energy products, services, and technology based on their unique areas of expertise. DOE, DOC, and State embassy officers advocate for U.S. energy businesses abroad to open new markets and protect U.S. investments abroad. It is important to note that it is often the case that the Secretary of Energy's counterpart is the key decision maker when it comes to the inclusion of U.S. companies within their energy markets. This feature further enhances the symbiotic relationship between DOE and DOC.
- Q4. When DOE approves LNG export permits, it includes "clawback language" that says it can revoke the permit at any time. What is DOE's understanding/reasoning for including such specific language?

- A4. Though it is important to preserve its authorities, DOE conducts all due diligence to avoid any rescindment of export authorizations once granted. DOE recognizes the importance of certainty in commercial contracts. It should be noted that DOE has never exercised this provision.
- Q4a. Do you believe that you have the authority to revoke the permit without this language?
- A4a. DOE's authority to modify or rescind existing export authorizations is prescribed by law. Under section 16 of the Natural Gas Act (15 U.S.C. § 717o), DOE is authorized "to perform any and all acts and to prescribe, issue, make, amend, and rescind such orders, rules, and regulations as it may find necessary or appropriate" to carry out its responsibilities.
- Q4b. Do you believe that it increases uncertainty for companies?
- A4b. DOE has heard from some authorization holders that reference to DOE's authority to rescind existing authorizations is a concern voiced by potential LNG buyers in the market. Again, we recognize the sanctity of contracts and have never used this authority.
- Q4c. Will you assess options for removing or otherwise reducing the use of this language in permits?
- A4c. DOE is in the process of reassessing the reference to section 16 of the Natural Gas Act in future orders granting authorization to export natural gas, including LNG. As a Department, from the Secretary on down we have sought to address the concerns of potential buyers of LNG and provide the certainty to suppliers and marketers.

QUESTIONS FROM REPRESENTATIVE DAVID MCKINLEY

- Q1. The Appalachian region is blessed with an abundance of natural gas resources. What are your thoughts on the need to geographically diversify the petrochemical business into areas like the Appalachian basin?
- A1. The Appalachian region has experienced near-exponential growth in natural gas production, and that production is expected to increase for decades to come. The U.S. Energy Information Administration (EIA) forecasts that natural gas production in Appalachia will increase over 350 percent from 2013 to 2040.¹ The natural gas produced in Appalachia contains valuable resources in the form of natural gas liquids (NGLs), including ethane and propane. When separated from the natural gas stream, ethane and propane are key feedstocks for the petrochemical industry to produce compounds for making plastics. According to EIA, Appalachian NGL production is projected to increase over 700 percent in the 10 years from 2013 to 2023.² The abundance of these NGLs presents an opportunity for the private sector to invest in petrochemical plant capacity in the region to take advantage of these locally produced feedstocks. Businesses have already started making some of these investments. According to EIA, between 2010 and 2016, natural gas processing capacity in Kentucky, Ohio, Pennsylvania, and West Virginia, grew nearly tenfold, from 1.1 billion cubic feet per day (Bcf/d) to 10.0 Bcf/d. Fractionation capacity in the region has increased from just 41,000 barrels per day (b/d) in 2010 to nearly 850,000 b/d in 2016, and may grow as high as 1.1 million b/d in 2019.³
- Q2. What could the Department of Energy do to help encourage the infrastructure required to deliver the value-added benefits of natural gas to the Appalachia region?
- A2. The Department of Energy (DOE) invests in oil and natural gas research and development with industry, academia, and the national laboratories. Through the Office of Oil and Natural Gas, as well as the National Energy Technology Laboratory, DOE is conducting research to improve the productivity of production in unconventional shale

¹ U.S. Department of Energy, "Natural Gas Liquids Primer: With a Focus on the Appalachian Region," December 2017. <https://www.energy.gov/sites/prod/files/2017/12/f46/NGL%20Primer.pdf>

² Ibid.

³ Ibid.

plays in such locations as the Marcellus and Utica plays in Appalachia. In addition, DOE is pursuing technologies and new processes for converting hydrocarbons into valuable products, which would increase the value of fossil resources in Appalachia.

- Q3. What could Congress do on the regulatory and permitting side to encourage these types of projects?
- A3. DOE does not have jurisdiction over natural gas liquids infrastructure projects. Generally, permitting of these types of projects falls to the states or local authorities.
- Q4. Do you believe the Department of Energy's fossil energy research programs are an important part of the President's promise to support coal country?
- A4. Yes. The Fossil Energy Research and Development program advances transformative science and innovative technologies that enable the reliable, efficient, affordable, and environmentally sound use of fossil fuels.

Fossil energy sources constitute over 80% of the country's total energy use, and are important to the nation's security, economic prosperity, and growth. While the percentage of coal used for electricity generation has dropped over the past decade due to increased capacity from renewables and generation by natural gas plants, according to EIA data, coal is projected to play a critical role to our national security and economy by providing electric power for decades to come.⁴ In addition to power generation, coal is a crucial feedstock for the steel and cement industries, two industries that are essential to our infrastructure.

The Transformative Power Generation program, for example, would support improving the efficiency and reliability of existing and new power plants by developing and applying advanced new materials, instrumentation and monitoring equipment, and controls systems that improve the efficiency and reliability of existing units over the load range.

⁴ U.S. Energy Information Administration, "Annual Energy Outlook 2017," January 5, 2017. <https://www.eia.gov/outlooks/aeo/y>

By enabling the continued operation of the coal fleet, this program can support domestic coal jobs by helping to revitalize the industry. It can also help to improve reliability of the nation's power grid by sustaining and potentially expanding reliable baseload power across the nation. DOE remains committed to creating commercially viable economic solutions to protect our environment and enhance our nation's energy independence. A reliable and resilient electrical grid is critical not only to our national and economic security, but also to the everyday lives of American families. Coal can play a significant role in ensuring grid resiliency and reliability.

- Q5. Prior to any determination or response by FERC, according to some reports, the annual cost of the DOE-NOPR is anywhere from \$890 million to \$3.8 billion. For the sake of argument, let's assume the cost to be \$2 billion per year and spread among 60 million customers. The total annual cost to a customer would be around \$32.00. Most utilities charge their customers for tree trimming. As a point of comparison, one such utility charges each customer about \$50.00 for tree trimming. Do you think \$32.00 a year is a reasonable cost to make sure a customer's lights stay on during the next polar vortex?
- A5. Ensuring that American families and their businesses have access to reliable, resilient and affordable electricity is vital to the economy, national security and quality of life. The 2014 Polar Vortex was a warning that the current and scheduled retirements of fuel-secure units could threaten the reliability and resiliency of the electric grid. In America, no one should have to choose between keeping their family warm and keeping the lights on. We need to be ready for the next Polar Vortex or any other shock to the system.
- Q6. Do we, in your estimation, have an electric grid today that is reliable and resilient?
- A6. A reliable and resilient electric grid is critical to our national and economic security. As our Staff Report to the Secretary on Electricity Markets and Reliability showed and as I made clear in our DOE Notice of Proposed Rulemaking and letter of September 28 to FERC, there are serious threats to the nation's electricity grid. It is the Commission's responsibility to determine how to take action to ensure that generation resources and the ancillary reliability services they can provide, including voltage support, frequency services, operating reserves, and reactive power, are fully valued. In particular, it is FERC's responsibility to exercise its authority to ensure market rules support this objective.

- Q7. We have seen in Puerto Rico how catastrophic weather events can leave people without electricity indefinitely. How does the grid reliability and resilience pricing rulemaking that DOE has proposed help ensure that the United States has done all it can to protect itself against extreme weather events?
- A7. Specifically for Puerto Rico, DOE has been supporting the efforts of the U.S. Army Corps of Engineers and the Federal Emergency Management Agency to ensure the restoration of power and will play a key role in planning for the future resiliency of the grid in Puerto Rico. For the continental United States, FERC has jurisdiction over the wholesale electric power system, including its reliability. DOE, under Section 403 of the DOE Organization Act, has authority to submit a proposed rule to FERC for its consideration. With the continued retirement of fuel-secure generation impacting grid reliability and resiliency during severe weather or other adverse events, I directed FERC to consider measures to ensure that the reliability and resiliency attributes of fuel-secure generation are appropriately accounted for in wholesale power markets.

The North American Electric Reliability Corporation (NERC), the FERC-authorized electric reliability organization for our Nation's bulk power system, filed comments with FERC affirming that "[r]eliable operation of the BPS [bulk power system] requires a generation resource mix that includes resources with fuel assurance and low sensitivity to disruptions of the fuel supply." NERC further recommended "that the Commission continue to pursue policy reform that recognizes the secure capacity and essential reliability service attributes currently and historically provided by coal and nuclear generation."

Given the trends pointing to future reliability and resiliency concerns, as subsequently noted by NERC, and with the experiences we have had with extreme weather events and the importance of electricity to our Nation, I utilized the authority that Congress has given DOE.

- Q8. Mr. Secretary can you advise us of what has occurred relative to coal-fired baseload generation during the last 8-years and the impact or potential impact this has or might have on the reliability of our nation's electric grid?

- A8. Between 2009 and 2016, about 49,000 MW of utility-scale coal-fired generation retired.¹ Thousands of megawatts of fuel-secure generation capacity, including environmentally compliant coal and emission-free nuclear resources, have been prematurely retired before reaching full life expectancy or will be placed into retirement soon. The resiliency of the electric grid is impacted by the retirements of these fuel-secure traditional baseload resources. During the Polar Vortex, PJM Interconnection (“PJM”) struggled to meet demand for electricity because a significant amount of generation was not available to run. The loss of generation capacity could have been catastrophic, but a number of coal plants that were scheduled for retirement were dispatched to meet the need for electricity. Sixty-five million people within the PJM footprint could have been affected if traditional baseload units were not available.
- Q9. Why is it important to have a diverse supply of electric resources on the grid?
- A9. America’s national security and energy dominance depends on a reliable, resilient electric grid powered by a diverse mix of generation resources that help mitigate disruptions and enable rapid response when disruptions occur. This diverse resource mix includes traditional baseload generation with on-site fuel storage that can withstand fuel supply disruptions caused by natural and man-made disasters. But the resiliency of the electric grid is impacted by the retirements of these fuel-secure traditional baseload resources that include coal and nuclear.
- Q10. Do you believe that the reliability and resiliency of the electric power grid will be compromised if we continue to retire large numbers of baseload coal-fueled electric power plants?
- A10. Yes. Thousands of megawatts of fuel-secure generation capacity, including environmentally compliant coal and emission-free nuclear resources, have been retired before reaching full life expectancy or will be placed into retirement soon. If we lose this capacity, we impact the resilience of the grid, specifically the ability of the grid to withstand and recover in times of major fuel supply disruptions.

¹ U.S. Energy Information Administration (EIA), “Form EIA-860 detailed data,” 2016 Data, November 9, 2017, accessed: December 1, 2017, <https://www.eia.gov/electricity/data/eia860/>

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Q11. Mr. Secretary some have criticized your grid reliability and resilience pricing proposal as violating free market principals and picking winners and losers. During your testimony you stated that we don't have a free market system today given the subsidies that are afforded certain fuel sources. Do you think it's the government's role to subsidize selective energy sources or should we eliminate all subsidies to let market forces determine our power generation make-up?

A11. America's greatness depends on a reliable, resilient electric grid powered by a diverse mix of generation resources. This mix of generation resources includes traditional baseload generation such as coal and nuclear that have secure supplies of on-site fuel. For years, our fuel-secure generation resources have been impacted by regulation and pricing rules that arguably under-value fuel security.

Under the proposal, FERC would direct the organized markets to revalue the grid resiliency benefits provided by traditional baseload resources with on-site fuel storage capability.

Q12. Can you provide the committee with an analysis, by year, of the subsidies (tax credits) provides to developers of renewable energy sources – wind and solar?

A12. The President's 2018 budget estimates that the Energy Production Credit, which includes wind, costs \$1.400B, \$1.770B, \$2.320B, \$2.970B, and \$3.570B from 2016 to 2020, respectively. The budget also estimates that the Energy Investment Credit, which includes solar, costs \$1.190B, \$2.440B, \$3.450B, \$3.830B, and \$3.920B from 2016 to 2020, respectively. These figures do not include expenditures due to firms electing a grant in lieu of the production or investment credits; these outlays were \$750m in 2016 and \$500m in 2017.

- Q13. What in your estimation will happen to the growth of wind and solar once the tax credits expire and should we burden taxpayers with the cost of these credits?
- A13. EIA's most recent projections for renewables (which includes wind and solar) indicate approximately 2.5% annual growth in capacity through 2050. After the expiration of the production tax credit, EIA's forecasted wind investment growth rate slows to 1.9% per year between 2020 and 2050. After the reduction of the solar investment tax credit, solar capacity is projected to grow at 5.0% annually between 2022 and 2050 due to "substantial cost reductions, performance improvements, and a permanent 10% investment tax credit."¹
- Q14. Comments filed by a bi-partisan group of former FERC Commissioners on the grid reliability and resilience pricing proposed rule state, "Subsidizing resources so they do not retire would fundamentally distort markets. The subsidized resources would inevitably drive out the unsubsidized resources ..." Isn't this exactly what's happening today by virtue of the tax credit wind and solar receive?
- A14. Prices in the Commission-approved organized markets may not reflect full valuation of grid reliability and resiliency benefits provided by traditional baseload resources with on-site fuel storage, such as coal and nuclear. The rule would help ensure that each eligible reliability and resiliency resource will recover its fully allocated costs and thereby continue to provide the energy security on which our nation relies.

¹Annual Energy Outlook 2017

QUESTIONS FROM REPRESENTATIVE RICHARD HUDSON

- Q1. How could the DOE work with the Department of Commerce, including the National Telecommunications and Information Administration (NTIA), to facilitate a better understanding of the vital nature of communications networks to grid resilience? Frequent intergovernmental engagement will facilitate better understanding of the operational needs of various critical infrastructures, thereby enhancing homeland security and safety. Each agency should work to understand the cross-sector impacts of its decision-making, which will yield better policies overall. At a time when cross-sector interdependencies are increasing, cross-government engagement is essential. DOE, with its expertise about the energy sector, could provide needed education and collaboration with other agencies about the energy sector's ICT deployment and policy challenges. What can DOE do to ensure that our federal government is thinking holistically about these cross sector interdependencies?
- A1. The U.S. Department of Energy (DOE) participates as an interagency partner in the NTIA, as a Federal spectrum holder and as a representative for energy sector stakeholders. Cross-sector interdependencies are indeed rising, and DOE considers electric infrastructure to be interdependent with oil and natural gas infrastructure, communications infrastructure, and, to some extent, water infrastructure. DOE will continue its participation within NTIA, but is also investing in analysis and new engineering disciplines to better understand these interdependencies. Grid architecture is one such new discipline, incorporating system engineering, organizational design, and an understanding of control theory to allow this new level of complexity to yield benefits while revealing risks and weaknesses. Additionally, new research into the unique requirements of communications networks that serve electric infrastructure has been the subject of DOE-convened stakeholder engagements, revealing some unmet needs that will be shared with industry and interagency partners alike.
- Q2. For the past few years, this Committee has heard from numerous witnesses who have stressed that the electric sector is the most critical of critical infrastructures. Our Committee has explored ways to ensure the resilience of the electric grid. I know that Duke in my district works hard to keep the lights on. Utility Information and Communications Technology (ICT) needs, such as access to spectrum for wireless communications free from interference and congestion, are integral to securing the country's energy infrastructure. Unfortunately, despite their vital importance to national security, energy and water providers face increasing challenges in accessing spectrum for mission critical communications, including those used for the Supervisory Control and Data Acquisition (SCADA) systems fundamental to grid operations. The need for

spectrum becomes more acute as utilities increasingly rely on wireless technologies that enable smart-grid devices and accommodate new generation resources such as solar and wind. Access to spectrum also allows utilities to deploy drones and other technologies that provide greater situational awareness and enhanced grid resilience, and were a vital component of damage assessment post Hurricane Harvey. Reliable communication systems are essential for maintaining operational safety, reliability and security, as well as resilience and restoration of service. My question to the DOE is, given the critical role communications networks play in keeping the lights on and what that means for both our national and economic security, how could DOE be encouraging the Department of Commerce, the FCC and others to develop policies that recognize the needs of critical infrastructure owners and operators in its spectrum allocation policies?

- A2. DOE has an obligation to understand the evolving needs of modernized, resilient electric infrastructure across a variety of technical and policy dimensions, including communications. Once a level of understanding is achieved, our role is to advance the state of the art and educate the private and public sectors, to deliver on our mission of furthering of the economic security of the country.

The ICT role in electric infrastructure is developing rapidly, because the performance gains consistently outweigh the costs of such technology. That increased reliance creates a need for increased communications bandwidth, which in some cases translates to a need for wireless technology and therefore spectrum. Establishing a transparent, quantitative basis for how much bandwidth is necessary to support a reliable, secure and resilient electric system is a complex undertaking, with many needs unique to regional and regulatory situations. This basis, however, is very important in informing a justification for spectrum access, and for the special case of dedicated spectrum. DOE is enhancing its understanding and research agenda in communications tools, technologies, and policy challenges, and will engage with industry and interagency partners as we further develop our understanding.

- Q3. Hydropower serves as the largest source of renewable electricity in the United States, providing clean, reliable, and affordable energy to hundreds of American communities. But our current capacity only scratches the surface. Last year, the Department of Energy released a report that found that the existing fleet could be realistically expanded by 25% by 2030, and 50% by 2050 with advanced hydropower technologies. This Committee has spent considerable time this year advancing policies --- the Hydropower Policy Modernization Act and the Promoting Small Conduit

Hydropower Facilities Act --- that would expand both small conduit hydropower development, as well as relicensing and expanding the existing fleet.

- Q3a. In your opinion, what are the largest regulatory barriers to pursuing these ambitious hydropower expansion goals?
- A3a. Existing regulatory processes are intended to ensure that hydropower development is carried out responsibly and consistently. As with many regulatory processes, the broad spectrum of the hydropower regulatory environment has evolved over time. As a result, hydropower project developers face a complex set of approval and compliance processes administered by various authorities including the Federal Energy Regulatory Commission (FERC), federal and state resource agencies, local governments, and tribes. Under the Federal Power Act (FPA), FERC authorizes the construction and operation of non-federal hydropower projects. In addition to FERC's permitting powers under the FPA, authorizations by a number of other federal (Interior, Commerce, Corps of Engineers) and state agencies under other federal statutes (Clean Water Act, Endangered Species Act) are also needed prior to FERC authorization. While timelines for many such approvals are statutorily indicated, FERC has limited authority to enforce them and delays are common, often adding many years and substantial uncertainty to the overall licensing process. In addition, there is no formal process to agree on what studies must be conducted for a particular type of project and site; instead, study requirements are defined on an ad hoc, case-by-case basis, adding substantial cost and uncertainty to the entire licensing process. While many environmental studies are absolutely appropriate and necessary, the current process can lead to decisions that are highly costly, not based on best-available science, and lack consideration of existing information and/or cost-effectiveness.
- Q3b. What should Congress do to improve the regulatory process to prevent hydropower projects from uncertainty and unnecessary regulatory delay?
- A3b. The continued development of unified, well-established mechanisms for collaboration and dissemination of the best available scientific procedures and findings could allow participants and regulators to realize mutual benefits by increasing approval process efficiency.

DOE's Hydropower Vision report identifies actions intended to assist parties in navigating regulatory processes, identifying opportunities to make steps more efficient while also being consistent with environmental protection statutes and equally protective of affected resources.¹

- Q3c. Given the Administration is committed to advancing an infrastructure package, which reportedly will include alternative financing tools, what are some of the alternative funding models the federal government could utilize to pay for retrofits?
- A3c. Hydropower facilities are typically long-lived assets with high upfront capital requirements relative to other generation technologies. Many hydropower units can operate reliably for more than 50 years, but project owners often cannot finance their assets over such a long duration. For example, few utilities sign power purchase agreements for terms of up to or beyond 20 years. Although power purchase agreements for 50 years or more would not be likely on a regular basis for any project, having certainty for a longer revenue stream would be beneficial. Financing for large-scale projects (i.e., \$1 billion or more for a merchant pumped storage hydropower project) also faces challenges, such as high upfront risk and long development timeframes. Risk-sharing mechanisms and partnerships warrant an investigation relative to financing and ensuring maximum ratepayer value.

Any mechanism to effectively increase financing terms to match productive asset life would help align the cost of hydropower developments and upgrades with their long term value. In addition, many of hydropower's important contributions to grid reliability, from sub-second frequency response to black-start capabilities that can help the grid quickly recover from an outage, may not be fully compensated in current electricity markets. In order for hydropower to continue to provide these services to a rapidly evolving grid, operators should be compensated in a way that reflects the economic value of what they provide.

- Q3d. The federal government is the largest owner of U.S. hydropower capacity. With most capacity built well over 50 years ago, there is a significant business case to modernize

¹ U.S. Department of Energy, *Hydropower Vision*, 2016, Chapter 4.4, Regulatory Process Optimization, page 379

these facilities. Will modernizing the federal hydropower fleet be an opportunity in the infrastructure package?

A3d. The Administration's infrastructure package has been undergoing development. The federal hydropower fleet is a national asset that has provided affordable, reliable electricity for generations.

Q3c. Would hydropower expansion fit in the Administration's vision of a robust infrastructure package?

A3e. DOE is committed to responsible and sustainable hydropower development, and recognizes the important opportunities for innovation in hydropower technology that simultaneously improve environmental outcomes and increase hydropower's contribution to a low-cost, reliable power system.

QUESTIONS FROM REPRESENTATIVE KEVIN CRAMER

- Q1. Your grid reliability and resilience pricing proposed rule focuses on what we've considered to be traditional baseload generation, i.e. power generated at coal and nuclear plants given that they have fuel at the source, at all times. Responding to my question about how to define baseload, Marty Durbin with the American Petroleum Institute testified on October 3, 2017 that traditional baseload is no longer relevant. How would you respond to Mr. Durbin's comments?
- A1. A reliable, resilient electric grid is powered by a diverse mix of generation resources that help mitigate disruptions and enable rapid response when disruptions occur. This diverse resource mix includes generation with on-site fuel storage that can withstand fuel supply disruptions caused by natural and man-made disasters, such as traditional baseload coal and nuclear generation. But the resiliency of the electric grid is impacted by the retirements of these fuel-secure generation resources.
- The grid faces many challenges, made-made and natural. It is important that the grid have the support of fuel-secure generation resources that have essential reliability and resiliency attributes needed to keep the lights on for all Americans in times of crisis—including on-site fuel supplies and the ability to provide voltage support, frequency services, operating reserves, and reactive power. In particular, it is especially urgent to respond to retirements of the resources that have these critical attributes.
- Q2. Why is it important to ensure that we have an adequate amount of coal and nuclear baseload power units on the grid?
- A2. The American economy, its defense and its people depend on a reliable, resilient electric grid powered by a diverse mix of generation resources. This diverse mix of resources includes traditional baseload generation with on-site fuel storage — such as coal and nuclear — that can withstand major fuel supply disruptions caused by natural and man-made disasters. These fuel-secure generation resources have essential reliability and resiliency attributes needed to keep the lights on for all Americans in times of crisis. During the Polar Vortex, PJM Interconnection ("PJM") struggled to meet demand for electricity because a significant amount of generation was not available to run. According to the Staff Report to the Secretary on Electricity Markets and Reliability, the

loss of generation capacity could have been catastrophic, but a number of coal plants that were scheduled for retirement were dispatched to meet the need for electricity. Likewise, nuclear power plants “performed extremely well during the Polar Vortex, with an average capacity factor of 95 percent.” Sixty-five million people within the PJM footprint could have been affected if these traditional baseload units were not available.

- Q3. What is the role of baseload power today given the increased number of gas pipelines that have been constructed and the dramatic growth in renewable energy?
- A3. Traditional baseload generation with on-site fuel storage – such as coal and nuclear – have essential reliability and resiliency attributes needed to keep the lights on for all Americans in times of crisis, including: on-site fuel supplies and the ability to provide essential reliability services. A reliable, resilient electric grid powered by a diverse mix of generation resources helps mitigate disruptions and enables rapid response when disruptions caused by natural and man-made disasters occur.
- Q4. Is interruption of gas deliveries for power generation of concern to you?
- A4. Yes. The DOE Staff Report recognizes that “system fuel supply chain disruptions can impact many generators during a single widespread fuel shortage event,” and that “nuclear and coal plants typically have advantages associated with onsite fuel storage...”
- Q5. Critics of the previous Administration criticize their failure to consider the fragility of the electric grid – the unfounded reliance on energy sources that are not always available to meet demand-driven circumstances. The DOE staff report speaks to this as have other experts. How much of a concern is this to you?
- A5. For years, our fuel-secure generation resources have been impacted by regulation and pricing rules that under-value grid security. I am taking, and will continue to take action as needed to keep our diverse generation mix in place. America’s greatness depends on a reliable, resilient electric grid powered by a diverse mix of generation resources. This mix of generation resources includes traditional baseload generation such as coal and nuclear that have secure supplies of on-site fuel.
- Q6. Paul Bailey, CEO of American Coalition for Clean Coal Electricity October 3, 2017 that in his conversations with grid operators they would need at least three years for market

reforms to take effect. Can you comment on the need for the aggressive timeline for the proposed rule you released

- A6. Under the proposal, FERC would direct the organized markets to revalue the grid resiliency benefits provided by traditional baseload resources with on-site fuel storage capability. The DOE Staff Report warns that the continued closure of traditional baseload power plants, especially coal and nuclear, means that “States and regions are accepting increased risks that could affect the future reliability and resilience of electricity delivery for consumers in their regions.”
- Q7. Do you believe that baseload coal and nuclear plants are inadequately compensated under current wholesale electric power markets? Why?
- A7. Yes, baseload coal and nuclear plants are likely under-compensated within current wholesale electric power markets.

America’s energy dominance depends on traditional baseload generation with on-site fuel storage that can withstand fuel supply disruptions caused by natural and man-made disasters. Baseload generation resources with on-site fuel supplies, such as coal and nuclear, help maintain the resiliency of the electric grid.

The resiliency of the electric grid is impacted by the retirements of these fuel-secure traditional baseload resources, including coal and nuclear. The reliability and resiliency attributes of these generation resources are likely under-valued. Prices in the Commission-approved organized markets may not reflect full valuation of grid reliability and resiliency benefits provided by traditional baseload resources, such as coal and nuclear.

- Q8. Your grid reliability and resilience pricing proposal seeks to “establish just and reasonable rates for wholesale electricity sales” by having FERC finalize procedures to ensure that reliability and resiliency of baseload power are fully valued. This, as you know, will be limited to unregulated plants. Are the baseload concerns that drove you to propose this applicable to the entirety of the generating fleet and if so, did you consider alternatives that would address these concerns more broadly?
- A8. The retirement challenge associated with traditional, fuel-secure baseload resources varies across the nation and depends on the regulatory context. The Staff Report to the

Secretary on Electricity Markets and Reliability found that vertically integrated utilities' coal and nuclear plants regulated by States under cost-of-service models stay open longer than those operating in centrally organized wholesale power markets.

This proposal could be a first step in seeking to ensure that we truly have an energy policy that first and foremost protects the interests and needs of the American people. Following the recommendations of the Staff Report, the DOE is continuing to study these issues and, if necessary, will be prepared to make a series of additional recommendations to improve the reliability and resiliency of the electric grid.

QUESTIONS FROM REPRESENTATIVE TIM WALBERG

- Q1. The proposed rule asks FERC to require the RTOs who operate the deregulated markets to ensure full cost-recovery for certain types of generation. Does this mean that you also support full re-regulation of these markets? If not, how do you envision retaining a deregulated market along with participating resources receiving full regulated cost-recovery?
- A1. No. The proposed rule allows for the recovery of costs of fuel-secure generation units frequently relied upon to make our grid reliable and resilient. Such resources provide reliable capacity, resilient generation, frequency and voltage support, and on-site fuel inventory – in addition to providing power for our basic needs, quality of life, and robust economy. The rule allows the recovery of costs of certain eligible units physically located within the Commission-approved organized markets. The rule requires the organized markets to establish just and reasonable rate tariffs for the recovery of costs and a fair rate of return.
- All of this can be done within the existing organized markets. The Federal Energy Regulatory Commission (FERC) has adjusted its market rules for reliability and resilience purposes on numerous occasions and is authorized to do so again.
- Q2. As noted in the DOE Staff Report on Electric Markets and Reliability, the North American Electric Reliability Corporation (NERC) identified three essential reliability services: voltage control, frequency response and ramping. But ramping capability, or the ability to respond to large swings in generation and/or demand, is not mentioned in the proposed rule. Do you consider ramping capability as essential to the reliability and resilience of the grid?
- A2. Ramping capability is important for the reliable and resilient operation of the grid, and FERC has recently taken steps to ensure that ramping services are valued in markets. The FERC Fast Start NOPR, Docket RM17-3, introduced a proposal to value this important attribute and to ensure that fast-ramping generators including peaking plants can collect sufficient revenues in markets.
- Q3. Mr. Secretary, I greatly appreciate the emphasis you are placing on the resiliency of the electric grid. I represent constituents who receive their electricity from rural electric co-ops and they appreciate you beginning the conversation about the need to reform the

nation's organized electricity markets. To ensure a reliable, resilient supply of affordable electric power, a dialogue over the appropriate role of the markets must occur

Could you explain your thoughts on the resiliency of the electric grid and how you will include rural electric co-ops in this discussion?

- A4. The American economy, its defense and its people depend on a reliable, resilient electric grid powered by a diverse mix of generation resources. This diverse mix of resources includes traditional baseload generation with on-site fuel storage – such as coal and nuclear – that can withstand major fuel supply disruptions caused by natural and man-made disasters. These fuel-secure generation resources have essential reliability and resiliency attributes needed to keep the lights on for all Americans in times of crisis, including those located in the markets of rural electric co-ops.

In its comments filed with FERC the National Rural Electric Cooperatives Association (NRECA), the national service organization representing America's electric cooperatives, stated that NRECA agrees with the premise of the proceeding on grid reliability and resilience pricing, and said that the cooperatives share a concern that centralized markets are not fully realizing their promise and need reforms to ensure a reliable, resilient supply of affordable electricity in the years ahead. We look forward to continuing to work with and including the needs of rural electric co-ops in this effort.

- Q4. States and RTOs/ISOs by design have ways to provide grid reliability and what they deem to be resiliency—sort of bottom up approaches driven by stakeholders on the ground to meet their unique needs—as an advocate of limited government and federalism, do you see this NOPR (and unprecedented quick timeline) as federal overreach?
- A4. No. Ensuring that American families and their businesses have access to reliable, resilient and affordable electricity is vital to the economy, national security and quality of life. For years, our fuel-secure generation resources have been impacted by regulation and pricing rules that arguably under-value grid security. I am taking, and will continue to take, action as needed to keep our diverse generation mix in place. Our electricity supply powers our economy, lights our streets, heats our homes, and supports our way of life. As Secretary of Energy, I will not sit idly by when I see a threat to that reliability or resiliency, or a reasonable course of action that is within my authority to mitigate it. The

matters addressed in the NOPR are squarely within FERC's statutory jurisdiction over interstate wholesale power sales and I have urged FERC to act promptly.

- Q5. In 2015, Congress signed into law the FAST Act, which included provisions authored by this committee that provided DOE new authorities to address grid security emergencies. DOE has a unique position in the federal government, with its institutional knowledge and specialized expertise and technological resources to provide vital assistance, especially in the cyber security space.
- Q5a. What further efforts do you envision to strengthen DOE's role as the sector specific authority on protecting energy infrastructure?
- A5a. DOE's future roles and responsibilities as a sector-specific agency for the energy sector will be focused on security and resilience. The well-developed, trusted relationships with private sector stakeholders facilitate joint efforts to improve information sharing and available Federal support, as well as identification of gaps to improve and refine developed programs and activities. DOE will continue to enhance cyber and physical security and resilience within the energy sector by leading collaboration between industry and states to better plan for energy disruptions and support the development of resilient energy systems. This collaboration will support DOE regional and national assessments to strengthen U.S. energy security.
- Q6. In the past Administration, we witnessed resource priorities for DOE skewed to renewable energy projects at the apparent expense of fossil energy research and DOE's electricity office, which house DOE's emergency support functions. This Administration's initial budget actually proposed additional cuts to this office, and kept its emergency functions flat at about \$9 million.
- Q6a. Going forward, what do you see as necessary to ensure DOE has full capabilities to support and respond to critical infrastructure risks – from the power grid to the energy supply to that grid?
- A6. DOE's Fiscal Year (FY) 2018 Budget Request reflects a prioritized assessment of the resources necessary to support and respond to critical infrastructure needs.

QUESTIONS FROM REPRESENTATIVE FRANK PALLONE, JR.

- Q1. In your opening statement, you reassured the Subcommittee that you understand the importance of travel oversight and spending tax payer dollars "...appropriately and thoughtfully." You also noted your frequent travel from Washington, D.C. to your home state of Texas. Can you provide additional details about how your trips to Texas are financed?
- A1. When I travel for official business, I comply with all Federal travel requirements. When I travel for personal reasons, I do not use government funds.
- Q2. There are reports that your wife has accompanied you on official travel in multiple instances. Since you became Secretary, how many times has the Department of Energy paid for your wife's travel, and what is the total cost of these purchases?
- A2. My wife Anita has accompanied me on four occasions during my tenure as Secretary of the Department of Energy (DOE). This has been reviewed and approved by DOE ethics officials in the Office of General Counsel. I know the high value we place on being good stewards of taxpayer dollars. Therefore, her travel is not done at taxpayer expense.
- Q3. Does the DOE Grid Pricing Notice of Proposed Rulemaking only apply to power plants presently in operation, or could retired coal and nuclear plants come back on line and receive full cost recovery plus a profit to do so whether they are needed or not?
- A3. After they are decommissioned, coal and nuclear plants generally cannot feasibly be returned to service. This underscores the urgency for the Federal Energy Regulatory Commission (FERC) to adjust market rules to help address retirement of these irretrievable, fuel-secure units.

QUESTION FROM REPRESENTATIVE JOHN SARBANES

- Q1. President Trump's Executive Order dated September 29, 2017 cancelled mandatory Labor Management Forums but left the option for voluntary agency-labor partnerships. You were scheduled to address the DOE LM Forum but the meeting is now suspended. The Forum has been a productive vehicle increasing employee engagement and morale while improving pre-decisional involvement. Can you and your leadership support continuing a voluntary partnership of the DOE organized workforce and management?
- A1. The Department of Energy (DOE) is committed to following the Presidential direction in Executive Order 13812, and will continue to work collaboratively and cooperatively with labor unions in a constructive, proactive way, consistent with past practices, honoring all collective bargaining unit agreements across the complex.

QUESTION FROM REPRESENTATIVE PETER WELCH

- Q1. The Staff Report on Electricity Markets and Reliability released by DOE in August 2017 points out that appliance and equipment standards are projected to save more than \$545 billion in utility costs between 2009-2030. Five standards – for air compressors, portable air conditioners, uninterruptible power supplies, walk-in coolers and freezers, and commercial packaged boilers – are projected to save more than \$11 billion on consumer energy bills but have not yet been published in the Federal Register. What is the status of these efficiency standards?
- A1. This question addresses a topic currently in litigation. As such, The Department of Energy (DOE) will not comment on the matter.
- Q. Given the enumerated benefits of reduced energy bills enjoyed by U.S. consumers and spurred by these standards, what will you do to protect the integrity of the appliance and equipment standards program at DOE in the face of the Administration's intent to cut funding requests by up to \$2.2 billion for the Department of Energy's energy programs, including a \$1.4 billion reduction for the Office of Energy Efficiency and Renewable Energy?
- A2. DOE remains committed to meeting its statutory obligations with respect to the appliance and equipment standards program.
- Q3. In June 2017, you testified to the House Committee on Appropriations that you wish you "had been confirmed by the Senate earlier" so that you could "be a full participant in crafting" the FY 2018 budget proposal. A month later, in a July 2017 memo, OMB Director Mick Mulvaney indicated agencies should use the FY 2018 Presidential Budget Request figures as topline requests for FY 2019 budget planning. What are you doing during this early stage of the next budget cycle to ensure the Department of Energy has the budget needed to do its job, aside from changing the Department's mission?
- A3. We have worked diligently throughout the budget formulation process to ensure that the President's Fiscal Year (FY) 2019 Budget works within budget constraints to be good stewards of taxpayer resources while also enabling DOE's critical missions of promoting America's energy security; spurring innovation; reducing regulatory burden; restoring the nuclear security enterprise and enhancing national security through the military application of nuclear science; and addressing the obligation of legacy management and nuclear waste.

To address these challenges and improve the lives and security of all Americans, DOE's world-leading science and technology enterprise engages in cutting-edge research that expands the frontiers of scientific knowledge and generates new technologies. We, through our national laboratories, must continue to support the world's best enterprise of scientists and engineers who create innovations to drive American prosperity, security and competitiveness for the next generation.

- Q4. The Department of Energy has noted that one of the purposes of the Section 403 proposal is to maintain grid resiliency during a disaster by incentivizing utilities to have a 90-day supply of fuel on site. I agree we should be working to improve the resiliency of the grid, but don't believe this approach will solve the issue. There are several concerns with the proposed approach.

In regards to reliability, a report from the Rhodium Group noted that between 2012 and 2016, there were roughly 3.4 billion customer-hours impacted by major electricity disruptions. Of that amount, only 0.0007% of outages were due to fuel supply problems. Additionally, a recent ICF report noted this rule will cost anywhere between \$800 million and \$3.8 billion annually through 2030.

Given the small fraction of electricity disruptions attributable to fuel supply issues, how will DOE's proposal solve the grid resiliency challenges we face? Do you agree other sources of energy such as wind, solar, and demand response can provide other grid attributes that are currently uncompensated for? Given the significant cost and impact of this proposal, will you commit to extending the FERC deadline to at a minimum 90 days?

- A4. The NOPR is not intended to address routine outages. It supports fuel security in the event of major fuel supply disruptions. As the Secretary's letter to the Federal Energy Regulatory Commission (FERC) (accompanying the NOPR) states, the NOPR is an effort to help build grid resilience, not a comprehensive solution to prevent all outages. It should also be noted that distribution outages are under State, not Federal, jurisdiction.

America's energy dominance depends on a reliable, resilient electric grid powered by a diverse mix of generation resources. This diverse mix of resources must include traditional baseload generation, and any other resource, with on-site fuel storage that can withstand major fuel supply disruptions caused by natural and man-made disasters. The resiliency of the electric grid is impacted by the retirements of these fuel-secure traditional baseload resources.

Under the proposal, FERC would direct the organized markets to revalue the grid resiliency benefits provided by traditional baseload resources with on-site fuel storage capability.

This proposal could be a first step in seeking to ensure that we truly have an energy policy that first and foremost protects the interests and needs of the American people. Following the recommendations of the Staff Report, DOE is continuing to study these issues and, if necessary, will be prepared to make a series of additional recommendations to improve the reliability and resiliency of the electric grid.

On December 8, 2017, I granted FERC a 30-day extension, giving the Commission a total of 90 days to act.

Q5. Secretary Perry, as you know DOE plays an important role in the successful management of the ENERGY STAR program, which has saved American families and businesses \$430 billion on their energy bills since 1992. But as you also know, the Administration has proposed to eliminate ENERGY STAR as part of sweeping and debilitating cuts to EPA. Do you agree with the Administration's proposal to eliminate ENERGY STAR? If funding for ENERGY STAR at EPA is reduced, will you go along and cut DOE's role in the program? How will you ensure DOE is able to meet its ENERGY STAR responsibilities in the face of these proposed cuts?

A5. DOE is committed to meeting its legislatively mandated deadlines for covered appliances and equipment. The Energy Policy and Conservation Act (as amended) mandates the Department's test procedure and standards rulemaking activities. The rulemaking schedule, and thus the level of program activity, is determined by existing statute.

In FY 2018, the Appliance and Equipment Standards subprogram will fund all necessary and feasible steps to finalize legally required efficiency standards and test procedures, and meet all applicable judicial and statutory deadlines. DOE will, as appropriate, undertake activities regarding the certification and enforcement of existing energy conservation standards.

Q6. While U.S. manufacturing has a central role in our domestic energy efficiency industry, local, small business contractors also play a critical part. These contractors work to retrofit homes across the country and are supported by the technical guidance, certifications and standards developed at the Department of Energy. Home Performance with Energy Star within your Buildings Technologies Office is one example of a program

that works to support contractor jobs and training while helping consumers save money on their energy bill. Weatherization is another such program. What will DOE be doing to support these small businesses that are upgrading American homes and helping American consumers save money by installing American-made energy efficient products?

- A6. Through a focus on early-stage research and development of energy efficiency technologies, DOE will enable small businesses and entrepreneurs to develop and deploy commercially viable solutions to help American consumers save money. DOE has played a role in supporting small contractors through programs such as the web-based information tools (called the Building America Solution Center) that include solutions for home improvement contractors retrofitting homes.

In addition, through the Department's SBIR/STTR program, DOE supports early-stage research and development on building technologies by small business in areas such as building envelope performance, HVAC, solid state lighting, and building energy modeling. DOE also uses SBIR/STTR grants to support technology transfer in areas such as improved window and envelope coatings.

QUESTIONS FROM REPRESENTATIVE PAUL D. TONKO

- Q1. Your testimony states that spurring innovation is a core mission for DOE. What do you see as the primary benefits of energy innovation? For example, expanding opportunities for the private sector, empowering consumers, lowering energy costs, and reducing pollution.
- A1. Innovations developed by the Department of Energy (DOE) through our 17 national laboratories provide a wide array of benefits for the American people. New energy technologies improve efficiency; enhance physical and cyber security; and strengthen, transform, and improve our energy infrastructure. These technology innovations enable consumers to access reliable, secure, and clean sources of energy. Transitioning DOE-funded innovation to private industry spurs further innovation, promotes economic prosperity, and contributes to growth in the energy, technology, and manufacturing sectors. Investing in innovation furthers the development of scientific knowledge that can transform society.
- Q2. Do you believe that DOE must continue to play an important role in funding early-stage energy technology research to support the U.S. private sector in making innovative breakthroughs?
- A2. Yes. DOE will continue to play a leading role in early-stage, fundamental energy research and innovation. This early-stage research is critical to advancing American energy innovation, and is often used by our private sector in competing across the globe. Continuing American scientific and technological leadership is important not only for improving our understanding of the world, but also for the economic growth of our nation. The Fiscal Year (FY) 2018 President's Budget refocuses the DOE's energy and science programs on early-stage research and development with a renewed focus on cutting-edge innovation and transitioning those breakthroughs to the private marketplace.
- Q3. Innovation is going to be essential to reducing carbon pollution and addressing climate change. It also will unlock tremendous business opportunities, including domestic job creation. Do you believe DOE has a role to play in reducing carbon pollution through research and development investments? Why or why not?

- A3. DOE has a fundamental research and development mission focused on facilitating the next generation of energy technologies. DOE's work often has a number of benefits including enhanced energy security, enhanced economic competitiveness, and reduced carbon and other emissions. Energy technology innovation at our 17 national laboratories helps enable consumers to have access to reliable, secure, and clean sources of energy.
- Q4. In the context of DOE's Notice of Proposed Rulemaking, submitted to the Federal Energy Regulatory Commission (FERC) on September 29, how do you define resiliency?
- A4. Resilience includes the ability of the grid to withstand and recover in times of major disruptions, including fuel supply disruptions. America's energy dominance depends on a reliable, resilient electric grid powered by a diverse mix of generation resources that help mitigate disruptions and enable rapid response when disruptions occur. The resilience of the electric grid is impacted by the retirements of these fuel-secure traditional baseload resources, including coal and nuclear, that can withstand fuel supply disruptions caused by natural and man-made disasters. If we lose this capacity, we can affect the resilience of the grid—specifically the ability of the grid to withstand and recover in times of major fuel supply disruptions.
- Q5. How do you differentiate resiliency from existing and well-defined reliability standards?
- A5. Resilience includes the ability of the grid to withstand and recover in times of major disruptions, including fuel supply disruptions. Existing and well-defined reliability standards may not adequately capture all aspects of grid resilience, such as the ability to withstand major fuel supply disruptions caused by natural and man-made disasters.
- Q6. DOE's Second Installment of the Quadrennial Energy Review stated, "Electricity outages disproportionately stem from disruptions on the distribution system (over 90 percent of electric power interruptions), both in terms of the duration and frequency of outages, which are largely due to weather-related events. Damage to the transmission system, while infrequent, can result in more widespread major power outages that affect large numbers of customers with significant economic consequences." This finding was reinforced by recent analysis from the Rhodium Group, which found that from 2012 to 2016, 96 percent of lost service hours were due to severe weather, which highlights the vulnerability of transmission and distribution systems. Outages caused by emergencies or deficiencies at power plants, including fuel supply disruptions, accounted for 0.00007

percent of the total. What alternatives to fuel assurance were given consideration by DOE to promote greater grid reliability before settling on the proposal included in the NOPR?

- A6. The NOPR is not intended to address routine outages. It addresses the need for fuel security in the event of major fuel supply disruptions. As the Secretary's letter to FERC (accompanying the NOPR) states, the NOPR could improve grid resilience, not a comprehensive solution to prevent all outages. It should also be noted that distribution outages are under State, not Federal, jurisdiction.

America's greatness depends on a reliable, resilient electric grid powered by a diverse mix of generation resources. This diverse mix of resources includes traditional baseload generation with on-site fuel storage that can withstand major fuel supply disruptions caused by natural and man-made disasters. The resiliency of the electric grid is impacted by the retirements of these fuel-secure traditional baseload resources.

Under the proposal, FERC would direct the organized markets to revalue the grid's resiliency benefits provided by traditional baseload resources with on-site fuel storage capability.

This proposal helps ensure that we truly have an energy policy that first and foremost protects the interests and needs of the American people. Following the recommendations of the Staff Report, DOE is continuing to study these issues and, if necessary, will be prepared to make a series of additional recommendations.

- Q7. As FERC considers the NOPR, millions of Americans in Puerto Rico and the U.S. Virgin Islands have lived without power for over a month. How has the experience of Hurricane Maria informed your thinking on the best methods to promote grid resiliency?
- A7. DOE has taken multiple actions to address the most immediate and future needs of hurricane affected areas. Upon being sworn into his current position as Assistant Secretary for the Office of Electricity Delivery and Energy Reliability (OE) in October, Bruce Walker's first order of business was to travel to Puerto Rico and the U.S. Virgin Islands, where he spent two weeks assisting with the response and recovery efforts. In

addition, DOE received \$17 million in mission assignments from FEMA to provide technical assistance for hurricane response and recovery.

These engagements and the lessons learned following Hurricane Maria are helping to inform not only the actions that DOE will consider in support of power restoration and energy system development in the U.S. Virgin Islands and Puerto Rico, but more broadly, our efforts to improve grid resiliency across the nation. I look forward to a thoughtful conversation focused on our response to this season's hurricanes, and on the reliability, affordability, and resilience of the electricity system nationwide.

- Q8. Did DOE do any cost estimates or cost-benefit analysis on the potential impact of the NOPR? If so, please share all relevant analysis related to potential costs to electricity consumers, including industrial consumers, with the Committee.
- A8. The economic costs of blackouts are staggering. The Final Report of the U.S.-Canada Power System Outage, jointly authored by DOE and the Canadian Ministry of Natural Resources found that the total costs of the relatively brief August 2003 Blackout in the United States ranged between \$4 billion and \$10 billion. Today, a longer outage would likely be far more costly.

As the President's National Electric Grid Security and Resilience Action Plan (Dec. 2016) explains, a major cyber or physical attack on the grid "can have major consequences for the electric grid and adversely affect national security, economic stability, and public health and safety. Securing and encouraging investments in risk reduction in the existing electric grid and against such consequences is central to the national security goals of the United States."

Also, as the NOPR explains, the loss of electric generation fuel diversity could harm consumers. The NOPR cites an independent study by the IHS Markit group, which concludes that preservation of generation diversity provided by fuel-secure resources benefits consumers. Specifically, the current diversified generation portfolio "lowers the costs of electricity production by about \$114 billion per year and lowers the average retail price of electricity by 27%"--i.e., compared with a "less efficient diversity case" involving "no meaningful contributions from coal or nuclear resources."

- Q9. I was pleased to hear your support for the Advanced Research Projects Agency-Energy (ARPA-E) program; however, I am concerned that other valuable programs, despite tremendous performance and benefits, have been targeted for significant cuts in the President's Fiscal Year 2018 Budget Request.
- Q9a. The Weatherization Assistance Program (WAP) reduces energy costs for low-income Americans while making their homes healthier and safer. Since 1976, the WAP has provided weatherization services to more than 7 million families. These households experience an average annual energy cost savings of \$283. This program is critical for low-income Americans who have disproportionately high energy costs. The administration proposed eliminating the program. Given the energy, financial, and health benefits associated with the work funded by the WAP, do you believe DOE should continue to help low-income Americans weatherize their home?
- A9a. The FY 2018 President's Budget proposes to reduce Federal intervention in State-level energy policy and implementation and to focus funding on limited, early-stage applied energy research and development activities where the Federal role is stronger.
- Q9b. A new benefit-cost evaluation published last month, conducted by Research Triangle International, examined research and development portfolios at the Building Technologies Office (BTO) from 1978-2015. The analysis showed that a conservative estimate of the benefits of the BTO's research and development efforts from 1978-2015 are producing estimated benefit-cost ratios of between 20-1 and 66-1 using a seven percent discount rate, with an internal rate of return between 38 and 51 percent. The administration proposed cutting two-thirds from the BTO budget. Do you agree that BTO's research and development efforts have a proven track record of producing benefits that far exceed their costs and have resulted in significant electricity savings and energy security in the United States?
- A9b. This evaluation of BTO's R&D portfolio demonstrates the value of innovation and early-stage applied research to American consumers. For example, the evaluation included a rigorous patent citation analysis that quantified the direct and indirect impacts on knowledge generated from DOE's research investment. These results are aligned with the administration's strategy to support early-stage applied R&D. Moreover, HVAC, Water Heating, and Appliances R&D activities that were studied in this evaluation remain a significant component of the President's Budget Request for BTO in FY 2018.
- Q9c. In its Fall 2017 Better Plants progress update, the Advanced Manufacturing Office (AMO) highlighted a successful program that partners AMO technical experts with more

than 190 businesses, representing approximately 12 percent of the U.S. manufacturing energy footprint across nearly 3,000 facilities. In the last seven years, these U.S. companies achieved cost savings of \$4.2 billion. The administration proposed a 68 percent cut to AMO programs. Do you agree the AMO plays an important role in supporting U.S. industrial efficiency and productivity by bringing the public and private sectors together through a voluntary program to increase the competitiveness of American manufacturers?

A9c. AMO plays an important role in supporting U.S. industrial efficiency and productivity by bringing the public and private sectors together through a voluntary program to increase the competitiveness of American manufacturers.

Q10. Earlier this year DOE launched the 50001 Ready program to accelerate the use of Energy Management Systems in the United States. What progress has DOE made to promote awareness and adoption of cost-effective and verifiable efficiency improvements for industrial and commercial energy users?

A10. In May 2017, DOE introduced 50001 Ready as a self-paced, no-cost recognition program to accelerate uptake of ISO 50001-based energy management business principles. To date, three facilities have earned DOE recognition and more than 200 organizations and 300 users have begun implementation through the 50001 Ready Navigator, a publicly available software tool developed by Lawrence Berkeley National Laboratory to democratize best-in-class energy management principles. In addition to supporting direct adoption of 50001 Ready, DOE is also engaging with trade associations, utilities, and energy efficiency organizations to include 50001 Ready in their efficiency program offerings, in order to build long-term relationships with customers, validate operations and maintenance savings, and develop a pipeline of future improvement opportunities. Since May 2017, three electric and natural gas utilities (TVA, Efficiency Vermont and Focus on Energy in Wisconsin) have committed to partnerships with DOE on pilots of the 50001 Ready program.

Other tools developed by DOE to help users quantify efficiency improvements achieved through energy management practices include the Energy Performance Indicator (EnPI) tool and EnPI Lite, energy savings calculators that employ best-in-class measurement and verification practices.

QUESTIONS FROM REPRESENTATIVE G.K. BUTTERFIELD

- Q1. Secretary Perry, the Administration has made many proposals in the energy space that have baffled business leaders, advocates, Democrats, and Republicans across the country. Most recently, the September 28th Notice of Proposed Rulemaking to have FERC consider your proposal to essentially subsidize coal and nuclear generation has drawn criticism from many unlikely sources. Former Republican FERC Commissioner Nora Mead Brownell said of the request, "It's the antithesis of good economics. It's going to destroy the markets and drive away investment in new more efficient technologies, whether they be generating plants or energy efficiency, at a cost to business and ratepayers that is astronomical." Groups from the largest oil and gas organizations to renewable energy groups and rural electric cooperatives filed a motion against your request. Secretary Perry, how do respond to the fact that nearly every energy consumer group is opposed to this proposal?
- Q1a. Many of those stakeholders have voiced concerns to you directly about the impact the proposal would have on electric rates for consumers. I have seen estimates that this proposal could lead to increased costs to ratepayers of \$800 million per year or more. Will DOE move forward with this proposal if millions of dollars of costs are passed onto consumers?
- A1a. The economic costs of blackouts are staggering. The Final Report of the U.S.-Canada Power System Outage, jointly authored by the Department of Energy (DOE) and the Canadian Ministry of Natural Resources found that the total costs of the relatively brief August 2003 Blackout in the United States ranged between \$4 billion and \$10 billion. Today, a longer outage would could be far more costly.

As the President's National Electric Grid Security and Resilience Action Plan (Dec. 2016) explains, a major cyber or physical attack on the grid "can have major consequences for the electric grid and adversely affect national security, economic stability, and public health and safety. Securing and encouraging investments in risk reduction in the existing electric grid and against such consequences is central to the national security goals of the United States."

Also, as the NOPR explains, the loss of electric generation fuel diversity could harm consumers. The NOPR cites an independent study by the IHS Markit group, which concludes that preservation of generation diversity provided by fuel-secure resources

benefits consumers. Specifically, the current diversified generation portfolio "lowers the costs of electricity production by about \$114 billion per year and lowers the average retail price of electricity by 27%"--i.e., compared with a "less efficient diversity case" involving "no meaningful contributions from coal or nuclear resources."

- Q1b. You have asked that this analysis be completed in 60 days. Can you explain why the Administration is trying to rush such a potentially costly proposal through?
- A1b. The DOE Staff Report warns that the continued closure of traditional baseload power plants, especially coal and nuclear, means that "States and regions are accepting increased risks that could affect the future reliability and resilience of electricity delivery for consumers in their regions."
- Q1c. My home state of North Carolina is now second in the nation in solar energy capacity behind only California. Though solar is a variable source of generation, when coupled with low cost natural gas it provides a cost effective and reliable generation source for many North Carolinians. How do you think this NOPR will impact major investments in North Carolina in renewable and natural gas generation that are replacing older coal plants?
- A1c. Natural gas and subsidized renewable benefit from current Federal Energy Regulatory Commission (FERC) rules that arguably undervalue the resilience benefits of fuel-secure coal and nuclear generation. The proposal could help correct this distortion. However, it may be worth noting only a portion of North Carolina is within a FERC approved organized market (PJM).
- Q1d. Secretary Perry, there are other options to keep plants available that are less distortionary for markets and more technology neutral. Why does DOE prefer the cost-of-service approach to keep these plants available?
- A1d. The proposed rule requires the Commission-approved organized markets to develop and implement market rules that re-price generation resources that help maintain the reliability and resiliency of our Nation's electric grid. Specifically, the rule promotes the recovery of certain costs of fuel-secure generation units that make our grid reliable and resilient. The rule requires the organized markets to establish just and reasonable rate tariffs for the recovery of costs and a fair rate of return.

- Q2. For an Administration that claims to be pro-business, it has been perplexing to see its approach to energy policy in our country. Secretary Perry, are you aware of an April 24th letter to appropriators from 1,050 organizations and businesses in support of the voluntary Energy Star program?
- Q2a. Secretary Perry, can you tell me roughly how many manufacturing partners and product categories fall under Energy Star?
- A1a. In 2015, more than 16,000 partners tapped the value of ENERGY STAR. Americans purchased over 300 million ENERGY STAR certified products across more than 70 product categories.¹
- Q2b. Secretary Perry, how does the Administration treat the Energy Star program in the FY2018 budget?
- A2b. DOE's Fiscal Year (FY) 2018 budget request reflects the suspension of all DOE ENERGY STAR test procedure development and performance verification efforts.
- Q2c. Secretary Perry, would you agree that it is true that American families and businesses have saved over \$430 billion on their energy bills through the Energy Star program?
- A2c. EPA estimates that families and businesses have saved \$430 billion on utility bills since 1992.²
- Q2d. Secretary Perry, does it concern you that so many companies and consumer groups oppose the defunding of the Energy Star program?
- A2d. ENERGY STAR is a joint EPA-DOE program that encompasses more than 75 product types. EPA is the lead agency and brand manager for the ENERGY STAR program. DOE's role consists of supporting EPA through the development of all product test procedures and by administering a product verifying testing program.
- Q3. Secretary Perry, in your testimony you claimed this Administration has a quote "clear focus on innovation" end quote. However, important research programs were eliminated in the FY2018 budget. Secretary Perry, DOE announced in February that the Advanced Research Project Agency – Energy, known as ARPA-E, attracted over \$1.8 billion in follow on funding and that 56 projects have formed new companies. The program

¹ ENERGY STAR Overview of 2015 Achievements. Accessed at https://www.energystar.gov/sites/default/files/asset/document/ES_OverviewAchievements_040816-508.pdf

² ENERGY STAR Overview of 2015 Achievements. Accessed at https://www.energystar.gov/sites/default/files/asset/document/ES_OverviewAchievements_040816-508.pdf

received \$306 million in 2017, so that is a great return on investment. How does the FY2018 Administration Budget treat ARPA-E?

- A3. The FY 2018 Budget Request focuses resources on early-stage R&D, where the Federal role is strongest, for energy technologies best positioned to enable American energy independence and domestic job-growth in the near to mid-term. The Administration's budget reflects an increased reliance on the private sector to fund later-stage research, development, and commercialization of energy technologies by fostering collaboration between National Laboratories, universities and companies. Through careful prioritization and ensuring that funding goes to the most promising research, DOE will continue to be a world-leading science and technology enterprise that generates the innovations that fulfill our missions ensuring the Nation's security and prosperity.
- Q3a. Secretary Perry, what is your rationale for zeroing out a successful program that attracts tremendous return on investment for American taxpayers and helps create jobs?
- A3a. The President's Budget will, by focusing on basic research, spur world-leading energy innovation, while also reducing costs to the taxpayer. Applied research/commercialization should be left to the private sector. I look forward to working with this Committee and both houses of Congress as the budget process moves forward.