

PENDING NOMINATIONS OF BROUILLETTE,
CHATTERJEE AND POWELSON

HEARING
BEFORE THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

ON

THE NOMINATIONS OF THE HONORABLE DAN R. BROUILLETTE TO BE
DEPUTY SECRETARY OF ENERGY AND NEIL CHATTERJEE AND THE
HONORABLE ROBERT F. POWELSON TO BE MEMBERS OF THE FED-
ERAL ENERGY REGULATORY COMMISSION

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**PENDING NOMINATIONS OF BROUILLETTE,
CHATTERJEE AND POWELSON**

THURSDAY, MAY 25, 2017

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The Committee met, pursuant to notice, at 9:45 a.m. in Room SD-366, Dirksen Senate Office Building, Hon. Lisa Murkowski, Chairman of the Committee, presiding.

**OPENING STATEMENT OF HON. LISA MURKOWSKI,
U.S. SENATOR FROM ALASKA**

The CHAIRMAN. Good morning. We will call the Committee to order.

It should be noted for the record that sitting next to me this morning is not my Ranking Member, Senator Cantwell, but I am joined this morning by Senator Franken, who will be filling in for Senator Cantwell, who is a little bit under the weather this morning. I know she wanted to be here and she has a statement that she will submit as part of the record.

[The information referred to follows:]

Opening Statement of Senator Maria Cantwell
DOE AND FERC Nominations Hearing
Thursday May 25, 2017

Thank you Madam Chairman for scheduling this hearing to consider the President's nominations of Dan Brouillette to serve as Deputy Secretary of Energy (DOE), and Neil Chatterjee and Robert Powelson to serve on the Federal Energy Regulatory Commission (FERC or Commission). These nominees, if confirmed, are going to play an important role in forming our nation's energy policies at a critical point in time as the United States seeks to continue to lead in developing the technologies that are revolutionizing the way energy is produced and consumed.

Deputy Secretary of Energy

The Department of Energy plays an essential role in protecting our national security, our economic security, our energy security, and our environmental security. Its wide-ranging missions impact virtually every part of our lives. As the second in command at DOE, the Deputy Secretary has a number of significant responsibilities, not the least of which is managing the Department's operations.

I had the opportunity to meet with Mr. Brouillette yesterday and we had a good discussion about the important work DOE performs on a daily basis. For instance, the Department continues to have a legal and moral obligation to the communities that are home to the waste left over from the nuclear production mission that was vital to our nation's success in World War II and the Cold War. And we have an obligation to the workers today, who are grappling with very complex and hazardous missions at these nuclear weapons facilities. I was pleased to hear from Mr. Brouillette that cleaning-up the Hanford site and ensuring workers there are safe will be at the top of his priorities list should he be confirmed to serve as the Deputy Secretary.

In addition, Mr. Brouillette committed to prioritizing the increasingly critical issue of protecting the electric grid from the growing threat of cyber-attacks. In 2015, the Russians reportedly hacked into three Ukrainian distribution utilities, knocking power out to more than 225,000 customers. And it appears the Russians may have recently done it again. Several months ago a utility in northern Kiev reported that its grid was brought down as a result of a cyber-attack that was very similar to the 2015 attack.

Fortunately, the U.S. grid has not yet been successfully attacked. But we do know that there are frequent attempts to hack into our utility systems. The Department of Energy is the Sector Specific Agency with the responsibility to protect our nation's electric infrastructure from attack.

Unfortunately, the President's Budget for Fiscal Year 2018, which was released earlier this week, proposes to cut funding for DOE's Office of Electricity Delivery and Reliability by approximately 50 percent. Spending on DOE's cybersecurity programs would be reduced by \$32 million.

The Budget proposal also slashes funding for numerous key Department programs. It also would auction-off the transmission facilities of the Bonneville Power Administration and the other Federal Power Marketing agencies, raising electric rates.

We need a Deputy Secretary of Energy that will fight for the Department and its programs. I hope that, if he is confirmed, Mr. Brouillette will bring his experience and judgement to an agency that is currently lacking both.

Federal Energy Regulatory Commission

We also will be hearing from nominees for two FERC seats. The Commission has been operating without a quorum since early February. There are currently three vacant seats and Commissioner Honorable recently announced she will be leaving the Commission at some point this year. I was disappointed by her decision. Commissioner Honorable served at FERC with great distinction and she will be missed.

We are still waiting for the President to nominate two more people to the Commission – one Democratic and one Republican. I will be working with Senator Schumer to ensure that we retain the party balance at FERC that is required by law.

I look forward to hearing from the two FERC nominees before us today about their views on the key issues pending before the Commission. For example, I want to be sure that the pending change in leadership at FERC does not mean we are going to roll-back the progress we have made in preventing and punishing manipulation of our gas and electric markets. I will want assurances from the FERC nominees that they will not allow that to happen.

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I look forward to hearing from the nominees this morning.

Thank you.

The CHAIRMAN. We are here this morning to consider three nominations: Dan Brouillette, to be Deputy Secretary of Energy; and Neil Chatterjee and Robert Powelson, to be members of the Federal Energy Regulatory Commission (FERC).

I want to welcome all three of the nominees to the Commission and thank them for their willingness to serve our country.

To start, we will hear introductions from Majority Leader McConnell, from Senator Cornyn and from Senator Toomey. They have come to provide introductions and to speak to the nominees' qualifications.

I recognize that we do not have two of our three, but I would like to welcome you, Senator Toomey, to the Committee. If you would like to go ahead with the introduction of Mr. Powelson, we can commence and then hopefully Senator Cornyn and Leader McConnell will be joining us as well. After you have made your comments, we will have an opportunity to provide ours and turn to the nominees themselves.

Thank you for joining us this morning.

**STATEMENT OF HON. PATRICK J. TOOMEY,
U.S. SENATOR FROM PENNSYLVANIA**

Senator TOOMEY. Thank you very much, Madam Chairman, and thank you to the "Giant of the Senate" for filling in for Ranking Member Cantwell.

Senator FRANKEN. You are quite welcome.

Senator TOOMEY. Senator Franken, good to see you both, as always.

We have three outstanding nominees that your Committee will be hearing from today, and I am delighted that your Committee is doing so. It is my personal honor to introduce Rob Powelson to the Committee.

Mr. Powelson is a native of Chester County, Pennsylvania. And he has had a successful career both in business and in public service and he has certainly established himself as one of America's leading experts in energy policy and particularly, electricity markets, serving, as he currently serves as a Commissioner on the Pennsylvania Public Utility Commission.

I think it's entirely fitting that President Trump chose to nominate a FERC Commissioner from Pennsylvania. Pennsylvania is now a top energy-producing state. We are number two in the nation in natural gas production. The development of the Marcellus shale has been a tremendous boon to the Pennsylvania economy and job creation. And Pennsylvania ranks number three in the nation in electricity generation. We're a net exporter of electricity, utilizing all sources of energy, including coal and natural gas and nuclear.

Energy infrastructure needs improvement, especially in Pennsylvania, but beyond. We need to keep pace with the natural gas production that has come online recently, and we need to make sure that we maintain affordable prices for consumers.

Rob Powelson, as I mentioned, has served on the Pennsylvania Public Utility Commission. He has done so since 2008 when he was unanimously confirmed by the Pennsylvania Senate. He was the Chairman for four years and in that capacity oversaw Pennsylva-

nia's electricity, water, natural gas and telecommunication markets. He managed a staff of 500 employees and served on a state-wide task force for natural gas development where he focused on, among other things, the feasibility of compressed natural gas vehicles in Pennsylvania.

He also has a record of improving our pipeline safety, hired a significant number of additional pipeline safety inspectors and worked with federal and state lawmakers to pass common sense safety reforms.

Mr. Powelson oversaw the cleanup after Hurricane Sandy where we had to restore electricity to one and a half million affected customers and implemented electric utility response plans for future emergency events.

Mr. Powelson is the current president of the National Association of Regulatory Utility Commissioners (NARUC) which represents state utility regulators across the country. And prior to his public service, Mr. Powelson served as the CEO and President of the Chester County Chamber of Business and Industry, an organization that he led for 14 years and which received accreditation from the U.S. Chamber of Commerce during his tenure.

He also currently serves on the Board of Trustees of Drexel University.

It is an honor for me to be able to be here today to introduce and to be an advocate for Rob Powelson. He will certainly provide the FERC with a wealth of knowledge and experience. I know he will support American energy independence and to ensure the reliability of our electric grid.

So, again, I want to thank Chairwoman Murkowski and all the members of the Committee. And I appreciate the opportunity to be with you today.

The CHAIRMAN. Thank you, Senator Toomey, we appreciate that, and I know Mr. Powelson appreciates your introduction as well.

Leader McConnell, it is good to have you before the Committee. We are pleased to finally begin the processing of these FERC nominees, and you have a special relationship with one of them this morning so we welcome you to the Committee to introduce Mr. Chatterjee.

**STATEMENT OF HON. MITCH McCONNELL,
U.S. SENATOR FROM KENTUCKY**

Senator McCONNELL. I do indeed, Madam Chairman. Thank you so much, members of the Committee.

I am here this morning to recommend an extremely well qualified Kentuckian. Let me start with the headline that Neil Chatterjee is going to make a great addition to the Federal Energy Regulatory Commission.

He has worked in my office for about a decade. And for those of you who know him, and I know several of you do, he is someone with a real passion for energy policy. His mastery of the issues is extremely impressive. He knows the ins and outs of just about every energy topic you can think of, and if you let him, he will talk your ear off about it.

I have no doubt he would approach matters that come before the Commission with the same kind of thoughtfulness and enthusiasm.

Of course, it's one thing to have a great idea. It's another to get the idea enacted. And Neil has gotten that, clearly, over the years. He knows the importance of building bridges and finding common ground. He's got a real gift for forging strong and lasting relationships, sometimes with Republicans, sometimes with Democrats. And more often than you might think, believe it or not, with Barbara Boxer. We call Neil the Boxer whisperer in my office.

[Laughter.]

It is a term of endearment, I assure you.

[Laughter.]

Let me give you an example. His work was key in forging alliances between Senator Boxer, myself, some would argue a rather odd couple, and others that ultimately resulted in a bipartisan agreement on issues that once seemed completely intractable, the five-year highway bill is one notable example. WERTA is another. Both of these bills, obviously, had strong infrastructure component and an agency like FERC, that considers issues related to infrastructure, having that kind of varied experience, which Neil has, will be a particular asset.

So here is what Senator Boxer said on the Senate Floor after one of our legislative successes together about Neil. She said, "Neil helped us greatly to know the lay of the land. He said this is where we have problems. This is where we can come together. I hope," Senator Boxer added, "I do not ruin his career by thanking him."

[Laughter.]

Well I think the fact that we're having this hearing today proves that Senator Boxer didn't ruin his career. Neil has repeatedly shown how to get a good result while listening to good ideas, proposing those of his own and ultimately working in good faith to get things accomplished. He's got the right attitude when it comes to thoughtfully hearing out all sides of an argument as well. He is, by every measure, exceptionally well qualified for the position to which he's been nominated.

I will also note that in addition to Neil's background in energy and infrastructure issues, he also has experience working on environmental matters. His efforts on TSCA, another important bipartisan accomplishment for our country, is another example.

As the members of this Committee know, it is long past time to get FERC working again and the quorum it needs. I think the President made wise choices in the selection of Robert Powelson and Neil Chatterjee for these important positions.

Obviously, I hate to lose Neil, but I know that FERC and our country will benefit from the expertise, the talent, the good humor, I have come to know this nominee possesses over the years.

Thank you so much for your consideration today of this outstanding nominee.

Thank you, Madam Chair.

The CHAIRMAN. Thank you, Leader McConnell.

Many of us here in this room have had an opportunity to work with Neil as we attempted to move our energy bill, not only through the Senate last year, but through the whole entire process, and Neil was a great friend and ally.

We are going to have an opportunity to re-up that, perhaps not with Neil's expertise, but an opportunity to continue much of the

good work there. So we appreciate that. We appreciate you coming over to the Committee, and we appreciate your time.

We are still waiting for Senator Cornyn, but I think what I would like to do is at this time ask the nominees to come forward and take their seats. I will make my opening statement and ask Senator Franken to make his. After that, if Senator Cornyn has joined us, we will hear from him, but we will then swear in each of the nominees, hear their testimony and also ask for the introduction of their family members, many are here with us this morning.

As has been noted, this is a significant hearing. It is significant because this is a step toward restoring a crucial, independent commission to functionality. FERC has been operating without a quorum since February 3rd, for two reasons. First, was President Obama's failure to nominate anyone for the two Republican seats that were vacated in 2015 and 2016. Then also, former Commissioner Norman Bay's decision to resign from his term in February, well before it was scheduled to end. As a result of those two factors, this is the first time in 40 years that FERC has lacked a quorum, and according to Bloomberg, up to \$50 billion in projects are now at risk.

So we need to move quickly to restore FERC's ability to do its important work. If we care about the business of a critical, independent, expert agency, we need to have a fully functioning commission. That is why I am pleased that we are able to hold a hearing featuring two very qualified nominees.

Our first nominee, Neil Chatterjee, is well known to all of us here on the dais. As I mentioned, he has been instrumental here with the Committee, helping us on energy-related matters. He is a first-rate energy professional. Almost all of us have worked with him on bills that drew bipartisan support and passed the Senate, in part, because of his efforts and his guidance. Neil is known to consider all points of view and has repeatedly brought decision-makers with distinct perspectives together, and I think we heard that just now from the Majority Leader. I have worked with Neil now for five years. I am pleased to support his nomination, and I believe that his approach will well serve the Commission.

Our second nominee, Robert Powelson, has been a leader on the Public Utility Commission of Pennsylvania for years and is now the President of the National Association of Regulatory Utility Commissioners, NARUC.

His colleagues, including several of my friends from Alaska, have recognized his leadership. They share their support for his confirmation to the FERC, and I likewise support Mr. Powelson's nomination.

Our third nominee this morning is Dan Brouillette. This will be his second term at the Department of Energy (DOE), having served as Assistant Secretary for Congressional and Intergovernmental Affairs from 2001 to 2003. Following his time at DOE, he served as the Staff Director of the House Energy and Commerce Committee, Vice President of Ford and is currently Senior Vice President at USAA. He is well qualified for the role of Deputy Secretary. He has the confidence of Secretary Perry, and I believe he will be a capable partner at the Department.

All of us are very well aware that the President's budget request proposes significant cuts to basic research and applied energy programs, along with the elimination of certain programs that have proven to be effective for accelerating innovation. While Mr. Brouillette will play a significant role in developing and implementing any changes that are made at DOE, I think we should all remember that the budget request was written without him. Now I do not agree with everything in it and questions about his views and his priorities are certainly fair this morning, but I don't think it is going to do us much good to try to hold Mr. Brouillette personally accountable for the budget proposal or try to delay his confirmation based on it.

So for members who have questions of our nominees, and I am sure all will, I will be here for as long as possible this morning. Should members have additional questions after the hearing any questions for the record will be due at the close of business today. I would just advise members to be prepared to report these nominees, as well as the nomination of Mr. Bernhardt, to be Deputy Secretary of the Interior, right after we come back from our work period after this next week.

With that, I will now turn to Senator Franken. I thank you for filling in this morning on this very important hearing and appreciate your comments this morning as well.

**STATEMENT OF HON. AL FRANKEN,
U.S. SENATOR FROM MINNESOTA**

Senator FRANKEN. Thank you, Madam Chair, and thank you for your comments.

We have three very important nominations before us this morning. We are experiencing a dramatic transformation in our energy sector. American innovation is not only changing how we produce and use energy, it is also providing an enormous economic opportunity in a growing global market for clean energy technologies.

According to Bloomberg New Energy Finance, \$7.8 trillion will be invested in new, renewable energy facilities between now and 2040. The International Energy Agency estimates that an additional \$23 billion will be spent on the energy efficiency during this same period. It is essential that our government invest in research and development and that we adopt the appropriate policies to maintain the United States as the world's clean energy leader.

Both the Department of Energy, DOE, and the Federal Energy Regulatory Commission, FERC, can play a key role in this clean energy revolution or they can hold us back while our international competitors reap the rewards. That is the prism through which I will consider the nominees that we hear from today.

The Deputy Secretary of Energy is the Department's second highest ranking official. He serves as the Department's Chief Operating Officer and is often assigned the Department's biggest challenges.

The next Deputy Secretary will have an especially difficult job. He will help manage the nuclear arsenal. He must continue to enhance our nuclear non-proliferation capabilities. He must ensure that DOE meets its obligations to clean up the weapons complex.

If Ranking Member Cantwell were here, she would underscore that the Hanford cleanup is a key part of this discussion, wouldn't she?

The CHAIRMAN. She absolutely would.

Senator FRANKEN. Yes, she would.

The Deputy Secretary must also maintain DOE's preeminent role as a global scientific and technology powerhouse. The Department's support for basic and applied research and for technology innovation through its national laboratories is absolutely essential.

The Department of Energy is our investment in the future. We look to DOE and its researchers for innovations that keep our nation secure and our infrastructure and economy strong. The next Deputy Secretary will face an especially difficult job because the President, who has nominated him, does not seem to understand any of this.

The budget the President released earlier this week proposes to slash many of DOE's essential programs. It would devastate our emerging clean energy economy, and it would raise electricity rates across the country by auctioning off public assets to the highest bidder. The President's budget would kill science, innovation and the jobs DOE supports today, and it would foreclose on the trillion-dollar promise of the global energy economy of the future.

When Secretary Perry appeared before this Committee during his confirmation hearing, he was asked several times about media reports that the Trump Administration was planning to devastate a number of important DOE programs and whether he would commit to defending the good work that the Department performs. Because he never gave this Committee a straight answer and failed to give me any confidence during a follow-up discussion, I voted against Secretary Perry's confirmation.

If he is confirmed I hope Mr. Brouillette will be a voice of experience and reason in the Administration. The Deputy Secretary needs to have the wisdom and the courage to be an advocate for his Department and its important programs. He should not embrace and implement misguided policies. Instead, he should advocate and champion wise ones.

We also will hear from nominees for two seats on FERC. It is unfortunate that the Commission has not had a quorum since early January. Then Chairman Bay told the transition team he would resign if replaced as Chair and that is exactly what happened. It then took the White House approximately three months to send us nominees that could restore the quorum.

I am disappointed that one of our two sitting Democratic Commissioners has chosen not to seek another term. Commissioner Honorable has served with great distinction, and she has my sincerest thanks.

It is important that we restore the quorum at the Commission, but it is equally important that the President nominate two more members to fill the remaining vacancies, one Democratic and one Republican and maintain the party balance that the law requires. We on the Committee will be working with Senator Schumer to ensure that that happens.

FERC will eventually have a new chair and four new commissioners that will be called up to make numerous decisions that will impact our energy future. In my view, the Commission needs to en-

sure that incumbent utilities do not discriminate against new technologies such as wind and solar power, distributed generation and energy storage. Similarly, FERC must continue to play a key role in protecting the reliability of the bulk power system, especially in enhancing the industry's ability to guard against the growing threat of cyberattack.

I will want assurances from the FERC nominees that they recognize the gravity of this issue. The law establishing the Commission requires its members to be "individuals who, by demonstrated ability, background, training, or experience are especially qualified to assess fairly the needs and concerns of all interests affected by federal energy policy." I look forward to hearing from both of the FERC nominees this morning.

Thank you, Madam Chair.

The CHAIRMAN. Thank you, Senator Franken.

Senator Cornyn has joined the Committee. We have already heard from Leader McConnell and Senator Toomey in the introduction of Mr. Chatterjee and Mr. Powelson, but we would welcome your introduction this morning, Senator Cornyn, of Mr. Brouillette to be nominee within the Department of Energy.

**STATEMENT OF HON. JOHN CORNYN,
U.S. SENATOR FROM TEXAS**

Senator CORNYN. Well, thank you, Chairman Murkowski, Acting Ranking Member Franken. Thank you for holding this hearing to consider these nominations today, all of which are very important. I'm here particularly to introduce Dan Brouillette, who has been nominated as Deputy Secretary of the Department of Energy, and it's an honor to introduce him and to see his large, beautiful family.

Dan hails from my hometown of San Antonio, also known as Military City, USA. Although he may tell you he is not a native Texan, he did get there as fast as he could. And let me also say Dan is glad to have his wife, Adrienne, here and all their children. And of course, it has always been a pleasure. The one thing that always impresses me about Dan and his wife is just how incredibly well behaved your children are. You all have done really well.

In San Antonio, Dan serves as Senior Vice President at USAA, a Texas-based company made up of a tremendous team of hard working people with a heart for serving military families. But before his role there, Dan's career was one marked by dedicated public service, that service began in the United States Army as a tank commander and reserve drill instructor.

After serving eight years in the Army, Dan didn't want to give up on government service, so he became a legislative director on the House side for eight more years learning the ins and outs of Congress which will serve him well in his new role.

Later, he was nominated by President George W. Bush to serve as Assistant Secretary for Congressional and Intergovernmental Affairs at the Energy Department, a job that requires a keen understanding of how to get the Executive and Legislative branches on the same page to achieve results.

Following his first tour at DOE, Dan came back to the Hill to serve as Majority Staff Director on the House Energy and Commerce Committee.

And most recently, Dan served on Louisiana's Mineral and Energy Board for three years.

Dan's the kind of man we should all want in a senior position at the Department of Energy. He doesn't just have policy chops, but he also knows the Executive Branch can work in tandem with Congress to produce good results for the American people. There's absolutely no doubt in my mind that a man of his caliber, someone who's demonstrated great leadership, a zeal for public service and a firm understanding of our nation's energy needs, will serve the United States well. That is why I wholeheartedly support his nomination and encourage the Committee to do the same.

I look forward to working with him and Secretary Perry and the rest of the Administration to make the United States an even stronger player in the global energy landscape, something which, Madam Chairman, I know you support enthusiastically.

Thank you very much.

The CHAIRMAN. Enthusiastically.

We appreciate you being here this morning and for your welcome and introduction. I do note for the record that we are getting a little bit Texas heavy here, but that is okay.

Senator CORNYN. There's no such thing, no such thing.

The CHAIRMAN. We can help balance it out with Alaska, I am sure.

[Laughter.]

Senator Cornyn, thank you for joining the Committee.

At this time, I will invite the nominees to please stand.

The rules of the Committee which apply to all nominees require that they be sworn in connection with their testimony. So I would ask you each to raise your right hand.

Do you solemnly swear that the testimony you are about to give to the Senate Committee on Energy and Natural Resources shall be the truth, the whole truth and nothing but the truth?

[Each nominee responds, I do.]

The CHAIRMAN. Before you begin your statements, you can go ahead and keep standing, but I would just ask you to lower your hand.

Before you begin your statement, I will ask you three questions addressed to each nominee before this Committee.

Will you be available to appear before this Committee and other Congressional Committees to represent departmental positions and respond to issues of concern to the Congress?

[Nominees respond with Yes.]

The CHAIRMAN. Are you aware of any personal holdings, investments or interests that could constitute a conflict or create an appearance of such a conflict should you be confirmed and assume the office to which you have been nominated by the President?

Mr. Chatterjee?

Mr. CHATTERJEE. My investments, personal holdings and other interests have been reviewed both by myself and appropriate ethics counselors within the Federal Government. I've taken appropriate action to avoid any conflicts of interests. There are no conflicts of interest or appearances thereof, to my knowledge.

The CHAIRMAN. Mr. Powelson?

Mr. POWELSON. Madam Chair, I would echo what Nominee Chatterjee presented to you.

I have no ethical or financial disclosure issues to report.

The CHAIRMAN. And then finally, are you involved or do you have any assets held in blind trusts?

[Nominees respond with No.]

The CHAIRMAN. Thank you. You may sit down and we will proceed with your testimony.

As each of you have already been introduced, at this time I would invite you to introduce your family and provide the Committee with your opening statement. We would ask that you try to limit your statement to just about five minutes and your full comments will be included as part of the record.

Mr. Brouillette, we will begin with you and then we will go down the line. So if you would like to commence your comments this morning and your introduction of your beautiful family.

**STATEMENT OF HON. DAN R. BROUILLETTE, NOMINATED TO
BE DEPUTY SECRETARY OF ENERGY**

Mr. BROUILLETTE. Thank you, Chair Murkowski.

Thank you, Chairman Murkowski and Acting Ranking Member Franken. It is my honor to be here today and all told, the staff, the professional staff of this Committee and the professional staff of the individual offices, thank you for the opportunity to appear before this Committee as the President's nominee to be Deputy Secretary of Energy.

Each of you have been extremely generous with your time and gracious with your counsel, and it's been truly a pleasure to sit down with you and understand your special, your particular policy interests and more importantly, your expectations of the Department of Energy.

I'd also like to thank the President and Secretary Perry for the confidence that they have placed in me with this nomination. It is truly humbling to be here today and, if I'm fortunate enough to be confirmed to this important position, I look forward to working with them and with you, this Committee, to advance our nation's energy and national security interests.

I know they've been introduced already, but Madam Chairman, as important a position as this is I actually hold a more important position and that is as father and husband. And I'll take a moment just to introduce the rest of our family. With me is my wife of 29, 28 years? How long has it been?

[Laughter.]

It's been a long time. She's been my best friend for nearly 30 years and we have been together a long time. But my wife, Adrienne, is here, and our nine children. And if I can quickly name them all. Christopher is right here in the front row. We have Stephen and his wife Lauren. We have Julia, Danielle. I can't see them. Danielle, Sam, Catherine, Jackie, Joelle, Adelaide, and Christopher.

The CHAIRMAN. Can we ask them all to stand?

Mr. BROUILLETTE. I'm sorry?

The CHAIRMAN. Will you ask them all to stand so we can recognize them?

Mr. BROUILLETTE. There we go.

[Applause.]

The CHAIRMAN. Thank you.

Mr. BROUILLETTE. There we go.

We also have with us this weekend my mom from Louisiana, Deanna Brouillette, my sister-in-law, Laura Brouillette, and many, many friends and family, friends and colleagues that we do consider family. It's never lost upon me that without them, I wouldn't be here today.

If confirmed to this position, it will be the third time, as Senator Cornyn said, in a three-decade career that I take an oath to defend the Constitution of the United States.

My path to this Committee to here today, leads through the United States Army, where I served as a young tank commander in the 11th Armored Cavalry Regiment. Many years ago, we stood in the "Fulda Gap", which was then the "furthest frontier of freedom." It was the front line of our nation's efforts to deter Russian nuclear and conventional aggression.

From there, service in the U.S. Congress, as Senator Cornyn alluded to, and the Department of Energy. And I also served with Congressman "Billy" Tauzin of Louisiana and later served as his Staff Director to the counterpart of this Committee in the U.S. House, the House Energy Committee. It was with Billy that I learned the value of bipartisanship. He was a gifted legislator. He's a gifted lawyer and he taught me well while I was there.

From there, I served with two iconic American companies, Ford Motor Company and USAA. And in each of those roles I've been fortunate to work with individuals who are truly visionary and capable.

For Calvary troopers across the world, Lieutenant General and now National Security Advisor, H.R. McMaster, a modern-day Patton. I was fortunate enough to serve in the Army and for all of us who were in the cavalry and tank commanders, we looked up to him and we learned a lot from him.

In this room, several Chairs of this Committee have served as informal mentors. Senators Murkowski, Bingaman, Johnston, Landrieu and Domenici.

At Ford and USAA, I was honored to serve next to individuals who helped develop market technologies we now take for granted, adaptive cruise control, hybrid vehicle power systems, and remote deposit capture, which is a technology that USAA invented that allows you to take a picture of a check and have the funds immediately deposited to your banking account. Many of those people were former DOE scientists.

Additionally, at USAA I've had the extreme privilege of serving our nation's military community at times they most needed us—and that was during the difficult moments that followed a natural catastrophe or personal tragedy. All of these experiences are diverse and varied, just as the Energy Department itself, and each experience has prepared me well, I think, for the dynamic challenges and opportunities that lie ahead.

If I'm fortunate enough to be confirmed, I'll look forward to serving as Deputy Secretary, along with the members of this Committee, Secretary Perry and the incredible workforce at DOE to ad-

dress the wide array of opportunities and challenges facing the Department with expanding obligations.

Chairman Murkowski, Acting Ranking Member Franken and I will say, Ranking Member Cantwell because we had a fantastic meeting yesterday and I did get an opportunity to learn from her, thank you again for the opportunity to be here today.

It is an honor and I look forward to your questions.

[The prepared statement of Mr. Brouillette follows:]

Opening Statement of Dan Brouillette, Nominee for U.S. Deputy Secretary of Energy

U.S. Senate Committee on Energy and Natural Resources, May 25, 2017

Chairman Murkowski, Ranking Member Cantwell, members of the committee, and to the professional staff of the committee and your individual offices, thank you for the opportunity to appear before you as the President's nominee to be Deputy Secretary of Energy. Each of you have been extremely generous with your time and gracious with your wise counsel. It has been a pleasure to learn of your specific policy interests, as well as your experiences with and expectations of the Department. Thank you. I would also like to thank the President and Secretary Perry for the confidence they have placed in me with this nomination. It is humbling and, if I am fortunate enough to be confirmed to this important position, I look forward to working with them and with you to advance our nation's energy and national security interests.

As important a position as this is within our government, I'd be remiss if I didn't mention another very important position I already hold, perhaps even more important, and that is as a husband and a father. Madam Chairman, with your approval I'd like to introduce my family to the committee. With me today are my incredible wife and best friend of 28 years, Adrienne, and our nine children, Stephen, along with his wife Lauren, Julia, Danielle, Sam, Catherine, Jackie, Joelle, Adelaide, and Christopher. Also with me are my mom, Deanna Brouillette Gaudet, two of my sisters-in-law, Karen Kornfeld and Laura Brouillette, and many, many friends and colleagues we consider our family. It is never lost upon me that without their selfless support I would not be here today.

If confirmed to this position, it will be the third time in a three-decade career I will take an oath to defend the Constitution of the United States. My path here leads through the United States Army, where as a young tank commander in the 11th Armored Cavalry Regiment we served in the "Fulda Gap", then the "furthest frontier of freedom" and front line of our Nation's effort to deter Soviet nuclear and conventional aggression, to service as an Assistant Secretary of the US Department of Energy, as a congressional staffer to US Rep W.J. "Billy" Tauzin and later as Staff Director of the House Energy and Commerce Committee, to service in the senior executive ranks of two iconic American corporations: Ford Motor Company and USAA.

In each of these roles I have been fortunate to work with and learn from visionary and truly capable leaders. For cavalry troopers around the world, Lieutenant General and now National Security Advisor HR McMaster is a modern-day Patton. Chairman Tauzin taught me the importance of bipartisanship. In this room, several chairs of this committee have served as informal mentors: Senators Murkowski, Bingaman, Johnston, Landrieu, and Domenici. At Ford and USAA, I was honored to serve next to individuals who helped develop market technologies we now take for granted: adaptive cruise control, hybrid vehicle power systems, and remote deposit capture, a technology invented by USAA that allows the use of smart devices to deposit funds into our banking accounts. Additionally, at USAA I have had the extreme privilege of serving our country's military community at times they needed us most: during the difficult moments that follow either a natural catastrophe or personal tragedy.

These experiences are diverse and varied, just as the Energy Department itself. Each experience has prepared me for the dynamic challenges and opportunities that lie ahead. Additionally, my tenure as Assistant Secretary for Congressional and Intergovernmental Affairs gave me extraordinary exposure to the work of this incredible department. With its 17 National Laboratories, the Department plays the central role in advancing America's leadership in scientific research and development, energy technology, and nuclear security. Collectively these labs comprise the most comprehensive research network of its kind in the world, and over 100 Nobel Prizes are directly associated with their work. Their continuous improvement of enabling technologies such as particle accelerators, high-performance computing, and the modeling of complex physical systems have led to entirely new areas of research within the scientific community. Anyone benefitting from an MRI, or medical treatments newly available because of our deeper understanding of genomics, can likely attribute those successes to work done by a scientist in a DOE laboratory. The labs are also critical to maintaining our strong national defense posture. Since the commencement of the Manhattan Project the Department has maintained a safe, secure, reliable and militarily effective nuclear weapons stockpile.

The labs can and do also play a crucial role in ensuring the reliability of our electric grid and protecting against cyber security attacks. I intend to work with Secretary Perry to develop and implement enhanced security measures where necessary and to assist with resilience efforts, so that Americans can depend on stable sources of power. I will draw upon my military experience, as well as my prior experience at the Department of Energy and in the private sector, to help organize emergency response personnel to handle disasters effectively and efficiently.

If I am fortunate enough to be confirmed, I look forward to working as the Deputy Secretary - along with the members of this Committee, Secretary Perry and the incredible workforce at DOE - to address the wide array of opportunities and challenges facing a Department with expanding obligations and tightening budgets. Among those challenges will be working with the Senate and the House to develop and implement appropriate budgets that will allow the Department's work on crucial science, research, national security and environmental management to move forward. The recent events at the Hanford complex remind us of the importance of prioritizing the work of the Department. I stand firmly committed to the mission at Hanford, as does the new Administration, and, if confirmed, stand ready to lead with you the effort to see its ultimate completion.

Chairman Murkowski and Ranking Member Cantwell, thank you again for the opportunity to be here. I ask the committee for your favorable consideration of the President's nomination, and I look forward to your questions.

The CHAIRMAN. Thank you very much, Mr. Brouillette.

Mr. Chatterjee, welcome to the Committee. We welcome your comments and the introduction of your family as well.

STATEMENT OF NEIL CHATTERJEE, NOMINATED TO BE A MEMBER OF THE FEDERAL ENERGY REGULATORY COMMISSION

Mr. CHATTERJEE. Thank you, Chairman Murkowski, Acting Ranking Member Franken, Senator Cantwell, members of the Committee, thank you for this opportunity. It is my distinct privilege to come before you today as a nominee to serve as a Commissioner on the Federal Energy Regulatory Commission.

If confirmed, I will serve to the best of my ability, always seeking what is right for our country and for the American people.

I want to express my sincere appreciation to President Trump for presenting me the opportunity to serve my nation in this manner and to Chairman Murkowski for her support, her encouragement and her efforts in scheduling this hearing without delay.

I'd also like to thank Leader McConnell for being here with us and introducing me today. Words cannot convey how grateful and humbled I am by this opportunity. Serving as the Leader's energy policy advisor has truly been the honor of a lifetime, and, put simply, I would not be where I am today without him entrusting me with this great responsibility all these years.

Growing up in Lexington, Kentucky, I remember seeing the work Senator McConnell did on behalf of the Commonwealth and I dreamed of eventually serving under him in the Senate. Of course, back then, I couldn't have known that I'd actually achieve that goal, much less that I'd be sitting before this distinguished Committee as a nominee for Commissioner, with the Leader speaking on my behalf.

The experience I've gained while working for Leader McConnell these past years extends well beyond the ins and outs of energy policy, though of course that's a significant part of why I'm here today. But of equal importance, are the many principles about one's temperament, about discipline, about judgment and about patience that the Leader has taught me by example. Each of these lessons has had a profound impact on who I am, and who I will continue striving to be if confirmed to this new role serving our country.

There are several others I'd like to recognize, without whom none of this would even be possible. I am joined today by my amazing wife, Rebecca, my son, Bo, my son, Anderson, and my daughter, Lane. Rebecca and I have been together since high school and I have no doubt that it's because of her love and support, at every step of the way, that I am sitting before you now.

The CHAIRMAN. We welcome the whole family to the Committee. Nice to have you here.

[Applause.]

Mr. CHATTERJEE. I am also proud to be joined today by my parents, Drs. Sunil and Malaya Chatterjee, as well as my sister Sumana. My family has sacrificed a great deal to pave the way for me to reach this moment and I know I will never be able to thank them enough for their strength, for their wisdom and for their dedication. But today, I'd like to try.

The Federal Energy Regulatory Commission is an independent agency responsible for ensuring just and reasonable wholesale rates while maintaining reliability. Its broad jurisdiction covers a wide array of energy matters and it plays an increasingly critical role in the development and maintenance of our nation's energy infrastructure. As the members of this Committee know well, this is a crucial time for the Commission and for America's energy future.

Having had a front row seat to the legislative process over the last eight years, I've had the distinct privilege of working to address many matters that impact the entire country, from the Chairman's home state of Alaska, to the Commonwealth of Kentucky and just about everywhere in between. I've also had the opportunity to work with, I believe, nearly every Senator on this Committee at some point in time. Because of my experience developing sound policy with of different backgrounds and ideologies, I believe I can bring a much-needed perspective to the Commission should I be granted the opportunity.

As my colleagues in the Senate on both sides of the aisle can attest, I have always endeavored to be pragmatic, fair and transparent in my interactions. In an effort to gain majority support on key legislative priorities, I have proven my commitment to hearing all sides of an issue and looking for common ground. It is only then, I believe, that we can forge lasting and meaningful solutions to the critical challenges facing our nation.

To cite some examples from my time in the Senate. I have worked with Chairman Murkowski and Ranking Member Cantwell on major bipartisan energy legislation; with Senators Portman and Shaheen on energy efficiency solutions; with Senator Stabenow on farm bills and on critical resources for the crisis in Flint; and with Senators Barrasso, Daines and Gardner on energy production issues, just to name a few. I've also, obviously, worked on a number of coal issues with Senator Manchin, and on energy efficiency issues with your team, Senator Franken, as well.

I hope to be able to bring the same equitable, level-headed approach that I've taken here in the Senate with me to the Commission so that we can move our country forward on the numerous big issues before us.

Former Commission Chairman, Joe Kelliher, often reminded us that FERC speaks loudest when it speaks with one voice. I couldn't agree more.

If confirmed, I feel confident that my straightforward approach and reputation as a consensus builder can help foster that environment in the years to come.

With that, I'd like to once again thank the members of the distinguished Committee for allowing me the opportunity to be here today. At this time, I look forward to answering any questions you may have.

[The prepared statement of Mr. Chatterjee follows:]

Statement of Neil Chatterjee
 Nominee to the Federal Energy Regulatory Commission
 Before the
 Committee on Energy and Natural Resources
 United States Senate
 May 25, 2017

Chairman Murkowski, Ranking Member Cantwell, Members of the Committee: thank you for this opportunity. It's my distinct privilege to come before you today as a nominee to serve as a Commissioner on the Federal Energy Regulatory Commission. If confirmed, I will serve to the best of my ability, always seeking what is right for our country and for the American people.

I want to express my sincere appreciation to President Trump for presenting me the opportunity to serve my nation in this manner, and to Chairman Murkowski for her support, her encouragement, and her efforts in scheduling this hearing without delay.

I'd also like to thank Leader McConnell for being here with us and introducing me today. Words cannot convey how grateful and humbled I am by this opportunity. Serving as the Leader's energy policy advisor has truly been the honor of a lifetime, and, put simply, I would not be where I am today without him entrusting me with this great responsibility all these years.

Growing up in Lexington, Kentucky, I remember seeing the work Senator McConnell did on behalf of the Commonwealth and I dreamed of eventually serving under him in the Senate. Of course back then, I couldn't have known that I'd actually achieve that goal, much less that I'd be sitting before this distinguished Committee as a nominee for Commissioner, with the Leader speaking on my behalf.

The experience I've gained while working for Leader McConnell these past eight years extends well beyond the ins-and-outs of energy policy — though of course that's a significant part of why I'm here today. But of equal importance, are the many principles — about one's temperament, about discipline, about judgment and about patience — that the Leader has taught me by example. Each of these lessons has had a profound impact on who I am, and on who I will continue striving to be if confirmed to this new role serving our country.

There are several others I'd like to recognize, without whom none of this would even be possible. I am joined today by my amazing wife Rebecca, my son Bo, my son Anderson, and my daughter Lane. Rebecca and I have been together since high school, and I have no doubt that it's because of her love and support — at every step of the way — that I am sitting before you now. I am also proud to be joined by my parents, Drs. Sunil and Malaya Chatterjee, as well as my sister Sumana. My family has sacrificed a great deal to pave the way for me to reach this moment, and I know I will never be able to thank them enough for their strength, for their wisdom, and for their dedication. But today, I'd like to try.

The Federal Energy Regulatory Commission is an independent agency responsible for ensuring just and reasonable wholesale rates while maintaining reliability. Its broad jurisdiction covers a wide array of energy matters, and it plays an increasingly critical role in the development and maintenance of our nation's energy infrastructure. As the Members of this Committee know well, this is a crucial time for the Commission and for America's energy future.

Having had a front row seat to the legislative process over the last eight years, I've had the distinct privilege of working to address many matters that impact the entire country, from the Chairman's home state of Alaska to the

Commonwealth of Kentucky and just about everywhere in between. I've also had the opportunity to work with, I believe, nearly every Senator on this Committee at some point in time. Because of my experience developing sound policy with Members of different backgrounds and ideologies, I believe I can bring a much-needed perspective to the Commission should I be granted the opportunity.

As my colleagues in the Senate on both sides of the aisle can attest, I have always endeavored to be pragmatic, fair, and transparent in my interactions. In an effort to gain majority support on key legislative priorities, I have proven my commitment to hearing all sides of an issue and looking for common ground. It is only then, I believe, that we can forge lasting and meaningful solutions to the critical challenges facing our nation. To cite some examples from my time in the Senate: I have worked with Chairman Murkowski and Ranking Member Cantwell on major bipartisan energy legislation, with Senators Portman and Shaheen on energy efficiency solutions, with Senator Stabenow on farm bills and on critical resources for the crisis in Flint, and with Senators Barrasso, Daines and Gardner on energy production issues, just to name a few.

I hope to be able to bring the same equitable, level-headed approach that I've taken here in the Senate with me to the Commission so that we can move our country forward on the numerous big issues before us.

Former Commission Chairman Joe Kelliher often reminded us that FERC speaks loudest when it speaks with one voice. I couldn't agree more. If confirmed, I feel confident that my straightforward approach and reputation as a consensus builder can help foster that environment in the years to come.

With that, I'd like to once again thank the Members of the distinguished Committee for allowing me the opportunity to be here today. At this time, I look forward to answering any questions you may have.

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The CHAIRMAN. Thank you very much, Neil. We appreciate you being here and for your comments this morning.

Mr. Powelson, welcome to the Committee. It is an honor to have you before us, and we appreciate your willingness to step forward and to serve in this capacity as well.

Your introduction, please.

STATEMENT OF HON. ROBERT F. POWELSON, NOMINATED TO BE A MEMBER OF THE FEDERAL ENERGY REGULATORY COMMISSION

Mr. POWELSON. Well, good morning Chairman Murkowski and belated happy birthday. And Acting Ranking Member Franken, I also thank you for the opportunity to be here this morning.

Let me first start off by personally thanking the entire Committee staffs, both on the Republican and Democratic side, for their steadfast commitment to, not only helping and listening to nominees but the work that they do on behalf of American energy.

I'm deeply honored to be here today as a nominee to serve on the Federal Energy Regulatory Commission. I'd also like to thank President Trump for this incredible opportunity.

I'm also humbled by the introduction here this morning from my home state Senator, Pat Toomey, for his very generous introduction. I'm proud of my lifelong residency in the Commonwealth of Pennsylvania for many reasons, and one of them is the Commonwealth's rich tradition of bipartisanship and collegiality among its congressional delegation.

You know, anytime you get to an opportunity like this, is I'd like to say, it's your family that's here. And I want to take this opportunity to thank my family members. My wife of 19 years and Dan, I'm inching toward you.

[Laughter.]

Lauren and I are lifelong Philadelphians and we're proud parents of our two sons. Ryan, who is not with us here today—he's on a mission trip. He's 14 years old, a proud student at Malvern Preparatory, and he sent me a beautiful text message last night saying, Dad, good luck here this morning. But my other son, who's got the gift to be maybe a governor someday, Shane, who's 11 years old—and I'm very proud of his accomplishments this past year in his school year and his ice hockey. And then my wife of 19 years, her unwavering support of me throughout this process and my public service. I know she jokes with me, someday I'm going to get a real job, she says. I respectfully submit to her, it's been an honor to be a public servant in the Commonwealth of Pennsylvania.

And a dear family friend, my former Board Member and Godfather to my sons, just a great gentleman, John McGowan, is with me here.

I also want to recognize a young lady who's worked for me for six years but started her career working at the Federal Energy Regulatory Commission, my Chief of Staff, April Baloo. This young lady is just an incredible asset to me. She's a great, just an unbelievable asset, and I'm proud that she's with me here today.

The CHAIRMAN. Wonderful to have your family and your friends. Thank you.

Mr. POWELSON. Thank you.

[Applause.]

To the members of the Committee, thank you for conducting today's hearing. I know many of you are, kind of, impatient with the fact that it's taken this long to get here, but I want to personally say, we appreciate this opportunity here today. I am truly honored by the nomination, and I look forward to answering your questions and discussing the important energy issues facing our nation.

If confirmed, I pledge to you I will bring a steadfast commitment to upholding FERC's mission to ensure that rates are just and reasonable by which utilities operate and more importantly, that we protect the public interest standard in our decision-making.

Now, as you heard from Senator Toomey, for the past 8-1/2 years, I have served as a public utility commissioner in the Commonwealth of Pennsylvania. And I believe that my experience there has suited me well for this potential opportunity.

I was nominated to the Pennsylvania Public Utility Commission in 2008 by Democratic Governor Ed Rendell and was approved unanimously by the Pennsylvania State Senate. In 2011, Republican Governor Tom Corbett appointed me to serve as Chairman. And in 2014, I was re-nominated by the Pennsylvania State Senate to serve a second term and again, was unanimously confirmed, excuse me, by the Pennsylvania State Senate.

During my time as chairman, I often look back over that wonderful experience, but I had a number of events that I had to deal with. As Senator Toomey mentioned, the restoration associated with Super Storm Sandy was really a life-changing experience for me. Pennsylvania was impacted dramatically by that weather event and we worked very closely with our federal agencies, our National Guard and others, to really create, what I consider to be, a national success story when it comes to power restoration. Most Pennsylvanians were restored power in less than four days.

I'm also proud of the fact that Pennsylvania was one of the first states in the nation to adopt a Distribution System Improvement Charge to get at antiquated, hazardous distribution pipeline in our gas distribution systems.

During my tenure at the Commission, I also oversaw the successful implementation of Act 129 which is Pennsylvania's energy efficiency and conservation law. And I'm also proud of the fact that as Chairman I administered Pennsylvania's very successful renewable portfolio standard.

And Senator Franken, I appreciate your comments around clean tech investment because we're going to need it all in this 21st century environment.

Let me conclude that one of the greatest honors that has been bestowed on me is to serve as our President of the National Association of Regulatory Commissioners and NARUC is a wonderful organization, founded in 1889. I can tell you that looking back on just my tenure working across the 50-state compact and more recently, our international outreach, it's been truly a wonderful opportunity. What I learned from my experience in NARUC is that what works in Pennsylvania might not work in other jurisdictions and the proud appreciation we all have for our individual states' rights in supporting our state energy policies. As I like to say, the states have been the incubations of energy policy.

So, Madam Chair, I really thank you for this opportunity and look forward to your questions from the Committee members here this morning.

Thank you.

[The prepared statement of Mr. Powelson follows:]

Statement of Honorable Robert F. Powelson
Nomination Hearing
U.S. Senate Committee on Energy and Natural Resources
May 25, 2017

Good morning Chairman Murkowski, Ranking Member Cantwell, and members of the Senate Energy and Natural Resources Committee. I am deeply honored to be here today as a nominee to the Federal Energy Regulatory Commission. I would like to thank President Trump for this incredible opportunity. I would also like to extend a personal thank you to my home state Senator Pat Toomey for his generous introduction. I am proud to be a Pennsylvanian for many reasons, including the Commonwealth's rich tradition of bipartisanship and collegiality among its congressional delegation.

I would like to recognize my wife, Lauren, and my sons, Ryan and Shane, and thank them for their steadfast and unwavering support throughout this process. Ryan regrets that he is not able to attend today's hearing, as he is on a mission trip to Central America with classmates. My family and my faith have been the cornerstone of my success as a public servant, and I am very appreciative of the support they have given me.

To the members of the Committee, thank you for conducting today's hearing and for taking the time to meet with me over the past few weeks. I recognize and appreciate the hard work of this Committee on energy issues that affect the lives of Americans every day. I am extremely honored by the nomination, and I look forward to answering your questions and discussing some of the important energy issues facing our nation. If confirmed, I will bring a steadfast commitment to upholding FERC's mission to ensure that the rates and terms of service by which utilities operate are just and reasonable and will do my part to uphold the public interest standard to which the agency is bound.

For the past eight and a half years, I have served as a public utility commissioner in Pennsylvania, and I believe that experience makes me well suited to be a FERC Commissioner. I was appointed to the Pennsylvania Public Utility Commission in 2008 by Democratic Governor Ed Rendell and was approved unanimously by the Pennsylvania State Senate. In 2011, Republican Governor Tom Corbett appointed me to serve as Chairman. In 2014, I was re-nominated by Governor Corbett to serve a second term and was unanimously confirmed by the Pennsylvania Senate.

During my time as chairman, the Pennsylvania Commission accomplished a great deal that I am proud of, including measures to address pipeline safety and aging utility

infrastructure. Pennsylvania was one of the first states in the nation to implement a Distribution System Improvement Charge (DSIC), an innovative ratemaking tool that has helped Pennsylvania utilities proactively address the aging infrastructure problem. Ensuring that our nation's utility infrastructure is in sound operating condition is not only a reliability issue, but a safety issue. I am proud that, during my tenure, we were able to expand the Pennsylvania Commission's authority to enforce federal pipeline safety laws under Act 127 and hire eight new pipeline safety inspectors. Pennsylvania is home to the Marcellus Shale play, one of the world's largest natural gas formations. As chairman, I oversaw the implementation of Pennsylvania's "impact fee" legislation. To date, the Pennsylvania Commission has collected and distributed over \$1 billion in impact fee revenue to the counties and municipalities across the Commonwealth.

During my tenure at the Pennsylvania Commission, I also oversaw the successful implementation of Act 129, Pennsylvania's energy efficiency and conservation law, whereby Pennsylvania reduced its electric consumption and peak demand over the course of several phases. Pennsylvania is currently implementing Phase III of Act 129, which is projected to result in a savings of 6,629,460 MWh across the Commonwealth and achieve net benefits of approximately \$1.5 billion over the lifetime of the efficiency measures installed. I also helped implement a state law requiring the Commonwealth's electric distribution companies to procure a portion of their electric generation from renewable resources. Today, Pennsylvania acquires 13 percent of its electricity from these alternative resources, which is up from six percent in 2007.

Throughout my career, I have been a steadfast supporter of competitive markets. In 2010, the Commission initiated a Retail Markets Investigation, which resulted in numerous enhancements to the competitive electricity and natural gas markets. Pennsylvania is a restructured state, and, thanks to competitive electric and gas markets, Pennsylvania consumers have enjoyed some of the lowest energy rates in the nation, not to mention innovative product offerings and a robust generation mix.

In 2012, the Pennsylvania Commission played a key role in the Hurricane Sandy restoration effort, which was a national success story because of our storm preparedness efforts and the work done by utilities' mutual assistance crews in the Commonwealth. In 2014, the Polar Vortex hit Pennsylvania, as it did the rest of the East Coast, and resulted in price spikes for many utility customers. In response, the Pennsylvania Commission undertook extensive efforts to improve consumer protections and utility disclosure requirements.

Beyond my experience in Pennsylvania, I am also the president of the National Association of Regulatory Utility Commissioners (NARUC). Founded in 1889, NARUC is a non-profit organization dedicated to representing the state commissions that regulate our nation's utilities. With over 200 state commissioners as members, NARUC's mission is to serve the public interest by improving the quality and effectiveness of public utility regulation. In working with state commissions across the country, I have gained an appreciation of the diversity in utility regulation that exists across the 50 state compact. What works in Pennsylvania does not necessarily work in other markets, and, should I be confirmed, I will continue to value the variety of perspectives that the states bring to an issue.

My experience as NARUC president and state commissioner has prepared me well for the complexities faced by FERC. It is an exciting and challenging time to work in the energy sector, and FERC plays an important role in navigating these issues. It is a great honor to be nominated, and, if confirmed, I would be committed to taking an impartial and fair-minded approach to carrying out the duties and obligations of the position of FERC commissioner.

Thank you for your consideration of my nomination, and I look forward to your questions.

The CHAIRMAN. Thank you, Mr. Powelson.

We thank each of you.

We will now begin a round of questions. Hopefully, we will have time for a second round, depending on the interest of Committee members.

Let me begin with our FERC nominees first, and this is just generally related to the Alaska gas line.

Back in 2015, the DOE granted conditional——

[Protester shouting in the background.]

The CHAIRMAN. Back in 2015, there was conditional authorization for the Alaska gas line to export LNG to countries that do not have a free trade agreement with the United States. This was a pretty major milestone for our efforts in the state with the gas line in terms of how we can move forward toward achieving the investment necessary, helping to build out the jobs and really build the economic growth. In April of this year the Alaska Gas Line Development Corporation filed their application with FERC. It is a 58,000-page application. It is substantive.

The question for both of you is, and I am not going to ask you to prejudge any specific application. I know you can't do that. But just generally, do you support Alaska's effort to market its stranded gas? And then in terms of complications, again, of this size, I think we need to have some level of commitment that you will do what you can, provided you are approved, to see that not only the Alaska application but all applications can proceed through a process in a timely and a predictable way. I am going to ask the same question to both of you. Mr. Chatterjee, if you want to begin?

Mr. CHATTERJEE. Thank you for the question, Chairman.

Certainly, I believe in states and local communities seeking projects that are in their interests and would be supportive of projects that enable us to utilize our domestic energy resources. Should I have the opportunity to be confirmed, I will happily look to read through those 58,000 pages and take very seriously the considerations made by folks and stakeholders on all sides of the issue.

As you know from working with me here in the Senate, I try to be productive, to hear out stakeholders on all sides and come to decisions that are in the interest of the country and——

[Protester shouting in the background.]

The CHAIRMAN. The Committee will be in order, please.

Mr. CHATTERJEE. And I hope to work with stakeholders in Alaska should I have the opportunity to perform.

[Protester shouting in the background.]

The CHAIRMAN. Mr. Powelson?

Mr. POWELSON. Thank you, Chairman, for the question here.

The CHAIRMAN. You need to push the button there a little bit.

Mr. POWELSON. Thank you, Senator, for your question.

I think you put it best one time, you look at the investment that we have oversight of, if nominated. It's \$400 billion per annum of critical infrastructure that needs to be approved by the FERC.

And to echo what Neil said in his answer, respecting that state right compact, the states' ability to develop their energy resources and do it in a safe manner. Pipeline safety is critically important, and I stand behind that.

And so, as these projects develop, I want to be fair and balanced, look at the record and obviously, the business case, as you know, we don't build these projects on speculation. And so, I would give you my steadfast commitment to be fair, balanced and do my homework in approving, if I have to give an approval to these projects.

The CHAIRMAN. I appreciate that.

Mr. Brouillette, we had an opportunity to discuss the high-energy crisis in Alaska, particularly rural Alaska. In many of my communities we have folks that are paying upwards of \$9 a gallon for home heating fuel and this is not just a challenge for many, it is a crisis.

We spoke generally about your commitment to work with us to help do what we can to reduce the price of energy in Alaska and in other areas where we are significantly impacted. And again, we generally ask for your continued commitment to do just that.

Mr. BROUILLETTE. Yes, ma'am. You have that and whatever else I may be able to do to help the people of Alaska.

As you and I discussed in your office yesterday, and thank you very much for that opportunity, I sincerely appreciated the chance to talk to you and learn more about that.

There's many things that we can do from technology to supply, and we can do it in ways now that we couldn't do 50 or 60 years ago. So it's very important that we increase domestic production, and I think you'll see that from this Administration, from this Department of Energy. I look forward to working with you and Secretary Perry on those matters.

The CHAIRMAN. And we look forward to having you and the Secretary up North so that you can see for yourself some of the impacts there.

Mr. BROUILLETTE. I would be honored to visit.

The CHAIRMAN. Very good. Thank you.

Senator Franken.

Senator FRANKEN. I believe Senator Manchin is on a tight schedule, so I will yield to him.

The CHAIRMAN. Certainly.

Senator MANCHIN. Thank you, my friend. I appreciate that, Madam Chairman and Senator Franken.

As you know, I come from West Virginia. We do a lot of heavy lifting and we are really dependent upon FERC, a working FERC. So we are very glad that we have two qualified people up for this nomination, and we will get to work as quick as we can.

I would ask both of you, Neil and Robert, what are your concerns in the FERC? What do you think is the most critical challenge you have as FERC, as a FERC regulator?

Mr. Powelson?

Mr. POWELSON. Thank you, Senator Manchin, for that question.

I think there are a number of issues in front of us. Obviously, first and foremost, is the backlog of cases that are sitting there right now. I think Chairwoman LaFleur, to her credit, has done a remarkable job leading the organization and trying to keep some semblance in managing the day-to-day operations of the Commission.

But let me go through the suite of issues from cybersecurity to physical security, to infrastructure investment, to, you know, deal-

ing with market issues. We are certainly not lacking issues right now at the FERC. It is not only an exciting time but a very challenging time.

Senator MANCHIN. If I may ask? Do you all know that there has been a request for a grid study? I think Mr. Brouillette understands me. We had a good conversation about this.

Can I ask you all? Where do you believe the reliability, if you are looking at what the role of price is a big consideration, the grid system, PJM is big in this whole area, as you know. How do you rank reliability?

Neil?

Mr. CHATTERJEE. Thank you for the question, Senator.

I think, you know, overseeing reliability is at the core of the Commission's mission, along with ensuring just and reasonable rates. And I think the key to ensuring that reliability is that we have a diverse fuel source, including a strong base load power.

I think, obviously, coming from a region of the country, West Virginia and Kentucky, we've been dependent and we've been the beneficiaries in Kentucky of safe, affordable, reliable electricity from coal-fired generation. There is, obviously, considerable pressure on coal and coal's role in our generation mix. I think we need to have a diversified fuel mix going forward.

Senator MANCHIN. Let me ask you this, if I could?

Mr. CHATTERJEE. Yes, sir.

Senator MANCHIN. You know how tight we are on time here.

How do you define base load, base load fuel? Very quickly.

Mr. POWELSON. So coming from Pennsylvania and we're good neighbors. Always commend you as a former governor of a state.

How do I define base load? If I look at the PJM mix right now it's nuclear, it's coal and it's natural gas, but renewables are playing a part of this energy mix.

Senator MANCHIN. Sure.

Mr. POWELSON. But they're the resources right now that seem to be evolving and on a national level as well.

Senator, I can tell you, there's a tectonic shift taking place across the U.S. In Pennsylvania right now, 30 percent of our generation, as you know, I came on the Commission in 2008, natural gas was less than 20 percent of the energy mix. It's up to 30 percent now. We're diversifying.

Senator MANCHIN. In Pennsylvania, yes.

Mr. POWELSON. Yup.

Senator MANCHIN. It is coming up strong in West Virginia. Coal is still 90, but it is coming up strong, and we are all for renewables too.

Mr. POWELSON. And we're going to need it all, to your point.

[Protester shouting in the background.]

Senator MANCHIN. Neil, if you could—

Mr. CHATTERJEE. I agree with Commissioner Powelson. We need it all. We need coal, we need nuclear, we need hydro, and we need renewables. And then, I think, obviously, gas plays an important role, sometimes it serves as base load, sometimes it serves as backup and sometimes it's used opportunistically.

[Protester shouting in the background.]

Senator MANCHIN. The previous discussions—

[Protester shouting in the background.]

The CHAIRMAN. The Committee will come to order.

Senator MANCHIN. I hope this does not count against my time.

The CHAIRMAN. It will not count against your time, Senator.

[Laughter.]

[Protester shouting in the background.]

Senator MANCHIN. Oh, boy.

[Protester shouting in the background.]

Senator MANCHIN. Is there anybody else in the audience who wants to say something before I get started again?

The CHAIRMAN. Senator Manchin, your time has not been deducted from you, if you would like to proceed?

Senator MANCHIN. Thank you, and God Bless America.

My main concern, basically, is base load, and I am afraid that the polar vortex about took us down.

Mr. Powelson, you know, and I think Mr. Chatterjee, you know how critical that was. And that is all we are asking for is the proper mix.

I am being told by the utility companies that the proper mix, they are being forced because of certain conditions and certain requirements that the previous FERC has put on them, not to have the proper mix that they think to make the reliability. That is what we are concerned about.

There is going to be a fuel of the future, I am sure, 10, 20, 30 years from now, but right now we have to use the cleanest fashion we can, what we have that we can depend on. So that is mine.

Mr. Brouillette, if I can, real quickly. You know there are some severe requests for budget cuts, and with that there is a recommendation on the NETL, the National Energy Technology Labs.

Mr. BROUILLETTE. Yes, sir.

Senator MANCHIN. Consolidation.

If you could speak about that and what your concerns would be and how you intend to take that on?

Mr. BROUILLETTE. Yes, sir. I appreciate the question. And thank you, again, sir, for spending time with me yesterday. I really appreciate it.

Senator MANCHIN. Sure.

Mr. BROUILLETTE. The opportunity we had to chat in your office.

If I could just back up, just real quickly and opine quickly on this grid study.

As I told you yesterday—

Senator MANCHIN. It was given to your new forthcoming agency.

[Laughter.]

Mr. BROUILLETTE. Exactly.

I've not been briefed on the study. But I'm told that it is and based on press accounts, it is to understand this new balance that may be affecting the marketplace. So, that's its intent. I think it's going to be an internal study at this point to review a lot of literature that's been already been written by the laboratories.

Senator MANCHIN. Sure.

Mr. BROUILLETTE. I know NETL is an important part of the laboratory components at the Department of Energy.

The budget, as the Chairwoman, Chairman, explained earlier, I've not been a part of. I have read the paper accounts. I do understand that there are cuts.

You know, I guess from my background, I understand full well what the process is too, sir.

The President has made a request. And it does lay out his policy directives. But the process, as you all know better than I, involves both the House and the Congress. And I look forward, if confirmed, to working with the Congress to arrive at an appropriate number for the scientific labs.

Senator MANCHIN. Well, that is all we would ask, and we want to make sure that we do the most effective and efficient thing we can for our country. I would hope that you would look into Morgantown, the NETL lab, which is a very, very productive lab and does an awful lot of heavy lifting and a lot of work. And it's tied into WVU's research centers, so it's really been very effective there.

Mr. BROUILLETTE. Yes, sir. They do outstanding work.

Senator MANCHIN. Yes.

I just want to thank all of you for your interest in serving. I really do. I know it is very difficult and it is very challenging, but I thank your families for the support they give to you all and for you all giving of yourselves because it is going to be very demanding in the next few years.

Thank you, Madam Chairman.

The CHAIRMAN. Thank you, Senator Manchin.

Senator Lee.

Senator LEE. Thank you, Madam Chair.

Thanks to all of you for being here today.

As you are aware, in many parts of the country there are public and private entities alike that are waiting for the approval of infrastructure projects, projects that would serve each community well and provide for substantial employment opportunities and opportunities for economic growth.

In Utah, the Lake Powell pipeline project is something that would help to develop Utah's allocation of water from the Colorado River. If built, would help provide water to one of Utah's driest regions and also a region that is experiencing really fast growth. They need water.

The preliminary licensing and environmental review documents have been filed with FERC. To date, we are 11 years into the project and, to date, about \$32 million has been spent just in this process. Yet it is still nowhere near where it needs to be.

I would like to ask some questions of those who have been nominated to serve in FERC. We will start with you, Mr. Chatterjee.

What could you do to work to make sure that there is better coordination between agencies, between FERC, entities like the BLM and other agencies and departments? And would you consider supporting review deadlines for projects waiting for FERC approval?

Mr. CHATTERJEE. Thank you for the question, Senator.

I share your sentiment that this type of infrastructure development is critical to not just job creation, but to stimulating economic growth. And FERC plays a critical role in approving this, these, infrastructure projects moving forward.

While I don't want to speak to the specific project you referenced, certainly, you know, philosophically, I want to make sure that the approval system is working as efficiently as possible. I do know that FERC often interacts with myriad agencies through the approval process.

And you have my assurance that I would work to better coordinate and streamline this process in a responsible manner.

I think one of the advantages that I can bring to the position is, you know, having served here in the legislative branch, with a national portfolio, I've developed relationships across a number of these agencies, as well as throughout the Congress. So I can reach out directly to some of these related agencies to ensure that the project can be better streamlined.

But again, I need to stress, we need to do it responsibly because what we don't want to do is, in our push to do it expeditiously, create any kind of legal liability on the back end. But no question, we need to really look at making sure of the processes as efficient as possible.

Senator LEE. How about you, Mr. Powelson?

Mr. POWELSON. Senator, thank you for your question. And I would start just to pick up on Mr. Chatterjee's point. If nominated, I think the first thing that I would do is really, kind of, do some root cause analysis of where these snags are presenting themselves in the Office of Energy Projects.

And I think to Mr. Chatterjee's point, you know, not sacrificing things like pipeline safety or, you know, these delays, as you know, cost real money. And so, for me, personally as a state regulator, getting immersed in where are the issues, what's causing the problem and the delay.

And then one thing I'd get a greater appreciation for in the time that I've spent here in DC, is kind of, there's still this silo mentality of different agencies sometimes not coordinating on that effort, whether it's Army Corps, EPA, DOE and others. So, I think we've got to start having these conversations if, again, we're talking about a state like yours, that wants to go forward with a project of this magnitude, that we're all moving in the same direction.

Senator LEE. Yes.

Mr. Brouillette, let's talk a little bit about the Strategic Petroleum Reserve.

Are you open to the idea of reforming that and what do you think of what some, including the Trump Administration, have suggested about the idea of selling oil for deficit reduction? And if we are going to do that sort of thing, anytime we sell it, what can we do to optimize the price to make sure that we are getting our value out of it?

Mr. BROUILLETTE. Thank you for the question, Senator, and thank you as well for the opportunity to meet. I really enjoyed our conversation in your office.

The Strategic Petroleum Reserve, as you know, was set up for a very specific reason and that was to maintain an emergency supply of fuel. The definitions and the conditions under which it could be sold, are very clearly defined in federal law.

I am not familiar with the discussions, the policy discussions, that the Administration may have had to determine the level of sales that they have included in their budget request to the Congress.

I can tell you as a general matter, I would stand by the federal law. I do think the Strategic Petroleum Reserve serves a valuable purpose. As the Chairman and I discussed as well, I am open to better mousetraps, if you will. I am not convinced that a single repository or a series of repositories in one location in the country is going to serve us well in certain moments or certain catastrophes.

So, if confirmed, sir, I would be more than open to having a conversation about how we might reform that and make it much better and more effective.

Senator LEE. Thank you.

Thank you, Madam Chair.

The CHAIRMAN. Thank you, Senator Lee.

Senator Franken.

Senator FRANKEN. Thank you, Madam Chair.

This is for the FERC nominees. Over the past decade we have seen a transformation in the way electricity is generated and delivered in the United States. With new technologies challenging the traditional grid model because of energy efficiency, electricity demand is down and this is saving households and businesses money.

The plummeting prices of wind turbines and solar panels have driven more renewables and distributed power generation into the marketplace, and we are developing more efficient and effective energy storage systems which improves the reliability and resilience of the grid and allows increasing amounts of variable renewable energy sources.

My state of Minnesota is on track to be 25 percent renewable by 2025. It is working so well the state is actually looking at ways of increasing that target to 50 percent by 2020. And this transformation to clean, flexible resources is going to continue and the future of our grid will be fundamentally different than it is today.

Mr. Chatterjee, Mr. Powelson, I would like to hear your visions for the future of the grid. In your view, what needs to be done to allow distributed energy technologies to meaningfully participate in the marketplace?

Mr. CHATTERJEE. Thank you for the question, Senator Franken.

There's no question in states like Minnesota and other regions of the country you are seeing rapidly increased deployments as there have been dramatic developments in technology. You know, I'm in favor of markets, I'm in favor of competition, and I'm in favor of technology, particularly when technology is in the best interest of consumers. I think that the Commission plays a critical role in the development of infrastructure and getting those, that infrastructure, permitted.

Senator Lee asked a specific question about infrastructure. I think we need to look at our grid infrastructure to make sure that it's prepared to deal with this transformation as different technologies and renewables come into the marketplace. And I think I would take that same view, should I have the opportunity to be confirmed and serve at the Commission.

I've met with a number of folks in this space and have been impressed with the innovation that has been ongoing. I was pleased yesterday to actually receive an endorsement from AEE, an advanced energy group who I'd met with on occasion and demonstrated my willingness to really learn about the advancements that are occurring and how to best integrate them into our energy mix.

Mr. POWELSON. Senator Franken, thank you for the question.

I will wear my Pennsylvania hat and then go to another hat here.

One is, I think, like your state, Pennsylvania, as you heard in my opening comments, we have a statewide energy efficiency program. It was adopted in 2008. Utilities have spent close to \$1 billion in energy efficiency with a total resource cost to customers receiving net benefit of close to \$1.8 billion. Those programs are working. I'm very proud of our record in Pennsylvania with what we've done with energy efficiency.

I also support, you know, what you said about renewables. I mean, look, low, clean tech investment is part of this 21st century landscape. I live right on the border of a new plant that Governor Markell brought to Delaware.

A decade ago you couldn't have defined what an oxidized fuel cell was. Now we have a company like Bloom Energy with their East Coast operation bringing oxidized fuel cells to the market.

You mentioned battery storage, another critical part. I serve on the Electric Power Research Institute. I mean, we're going to have wind farms with battery storage capability here. EV charging, you know, solar and wind cost curves coming down dramatically, new metering technologies. Pennsylvania, like your state, we have advanced metering technology. So it is a dynamic marketplace.

I'll leave you with one note, like my good friend here from Kentucky. In meeting with groups like the Advanced Energy Economy, the first thing I did as NARUC President was to implement an innovation task force to bring all these new technology providers into a working conversation with NARUC Commissioners. And it's been off to a great start.

Senator FRANKEN. Thank you for that answer.

Thank you, both. I know I have run out of time. Just one thing, I would like to respond to Mr. Powelson in terms of storage and wind. That is part of the base load that we are talking about when we talk about base load.

Mr. Brouillette, I was going to ask you about the DOE budget cuts. I have run out of time so I am not going to do that, but I would like to remark, the Chairwoman told me that you and your wife homeschooled your children.

Mr. BROUILLETTE. We do, sir.

Senator FRANKEN. All nine of them?

Mr. BROUILLETTE. All nine.

Senator FRANKEN. Are you going to have time to do this job?

[Laughter.]

I see some of them have aged out of—

Mr. BROUILLETTE. Given my wife's organizational skills, I'm starting to wonder if the wrong Brouillette was nominated.

[Laughter.]

She is very good at what she does.

Senator FRANKEN. Okay. And you do the math and science part?

Mr. BROUILLETTE. I try to, sometimes.

Senator FRANKEN. Okay, alright.

[Laughter.]

Okay.

The CHAIRMAN. Okay.

Senator FRANKEN. Back to you.

[Laughter.]

The CHAIRMAN. Thank you, Senator Franken.

Senator Gardner.

Senator GARDNER. Thank you, Madam Chair.

Senator Franken, I think that is exactly why he needs a laboratory system that has advanced computational ability, to help with the process there.

So I want to thank you, all of you, for being here today, the witnesses who are here today. I know there are a number of children in the room today and thank you for being here. I have three kids myself. And the fact is, moms and dads are doing this, they are willing to commit to public service because they believe that this is a way they can pay back the country and make this a very special place even that more special. So thanks to all the children who are here seeing their moms and dads go through a confirmation process because I know it takes away time from you all as well. Thanks for that service, that sacrifice and that commitment.

Mr. Brouillette, I would like to start with you. I would be remiss if I did not talk about, carry on the conversation that we had in our office just a couple days ago, talking about the National Renewable Energy Laboratory in Colorado. We discussed the importance of that. We discussed the importance of grid reliability, diversified fuel mix. And I think nobody does that better and the understanding of how that works in combination with the diverse fuel mixture and making sure we have grid reliability than the National Renewable Energy Laboratory (NREL).

Both you and Secretary Perry have expressed support for the National Renewable Energy Laboratory, but I want to make sure that it is clear that I will oppose any attempts to shut down lab operations. With the figures that I have in 2015, fiscal year, NREL received approximately \$357 million across 13 EERE, energy efficiency and renewable energy office programs, research programs. The President's budget proposal provides about \$636 million to EERE.

I realize you are not at the Department yet, but you have been nominated to serve as the second in charge, second in command. So please explain to me how, if confirmed, you will work to reconcile the differences in order to ensure the Renewable Energy Laboratory programs ensure cyber and advanced computing will be continued, that those are priorities of the Administration at NREL.

Mr. BROUILLETTE. Thank you, Senator. I sincerely appreciated our opportunity to chat yesterday in your office.

It's always enlightening to me. You have spent much more time at NREL than I have, but I have been there, many times. It's a fascinating place and it's a place filled with incredible talent. I'm always drawn there when I meet the folks there.

As you mentioned with this particular budget I was not part of the process. But you have my assurance, if confirmed to serve in this role, that I will advocate for the programs of the Department. You have my assurance on that and I will always be available to you.

The good people of NREL have not only invented much of the renewable technologies that we talked about with regard to potential base load application, they have enabled it. Much of the technology that they have developed is now in the marketplace because of their good work.

So again, sir, if confirmed, I look forward to working with you and I will be an advocate for the programs.

Senator GARDNER. Thank you.

Additionally, the support for grid modernization, the ease of energy systems integration facility, not clearly stated in the budget. Industry engagement, though, is showing that these are both critical to innovation. How would you advise Secretary Perry on where federal dollars should be spent in order to best prepare this country for energy leadership and cyber readiness?

Mr. BROUILLETTE. I'm sorry, can you repeat that again?

Senator GARDNER. Just the ease of program on cyber and I will submit that for the record because I will run out of time here.

Mr. BROUILLETTE. Sure.

Senator GARDNER. I want to get to the two FERC nominees, both to Mr. Chatterjee as well as Mr. Powelson.

I spoke to both of you in the office. Thanks for coming in. I talked about my support for the liquefied natural gas export projects and facilities. I spoke of my support for a project called Jordan Cove that would take Colorado's Western Slope natural gas from the Piceance Basin, which is spelled a little bit like Brouillette, you have to figure out how to get them both spelled, to markets in Asia. I have long supported this project and look forward to the refiling of that project at FERC this summer during a time when we will have the quorum filled at FERC.

I know you probably cannot comment on the Jordan Cove filing specifically, but I would like your position on LNG exports in general, if you can, Mr. Chatterjee and Mr. Powelson.

Mr. CHATTERJEE. Thank you for the question, Senator.

Yes, I've been advised I can't speak to any action that may come before the Commission. But I do think that permitting LNG facilities is an important part of FERC's role and it's a responsibility that I would take seriously. There are stakeholders on all sides of the issues. But while I certainly would look to try and get these projects sited, I would also be certain to hear feedback from folks on all sides of the issues and make the most responsible decision I could.

Senator GARDNER. Mr. Powelson?

Mr. POWELSON. Senator Gardner, thank you for the question and also thank you for the time you took out of your hectic schedule to meet with me.

This is an issue that, just look at the 2008 timeframe when I came on the Commission we had \$14 per MM BTU gas and we were an import nation. Today we are moving forward toward really dominating the international landscape with export opportunity.

To reiterate what Nominee Chatterjee mentioned, public input, stakeholder process is all part of this equation. People have to have peace of mind that there's transparency in that process, but as I said earlier in comments, you know, we don't build pipelines on speculation.

And in here we are reversing flows from 2008, in less than in an 8-1/2 year window, now we have an opportunity to be exporting. And exporting, in my view, is a geopolitical, creates geopolitical upside for the U.S.

I had a great opportunity with our former Governor to go to Chile, one of our true democracies, and met with Sebastian Panira and talked about the need as they're, kind of, decarbonizing themselves, they needed natural gas and they don't have it in Chile. So these are the opportunities that abound if we do it right.

Senator GARDNER. Mr. Powelson, last question. At the state and federal authority, we talked about that a little bit in our meeting. In the context of wholesale power markets and state energy policies, including the state renewable energy portfolio, where would you come down on using federal authority to preempt state laws?

Mr. POWELSON. That's a great question, Senator, and I will respectfully start with the work that's being done right now at the FERC because this is a very big issue. I come from an organized market and there's organized markets and then there's the bilateral markets.

The first thing that, I think, the FERC is doing responsibly is hold the work that Chairman LaFleur did to start the conversation around this tech conference and gathering feedback from states, generators and other market participants.

So to answer your question, I am not, I respect states' rights but also we, as Federal Energy Regulatory Commissioners, if confirmed here, have a responsibility to uphold the Federal Power Act and we also have responsibility around the Natural Gas Act. And how states develop these policies, if there's an inference in the market design, that's where we have to step in and make those decisions. But I, today, will tell you that I think the FERC has, to its credit, tried to be respectful of the state energy policies.

Senator GARDNER. Thank you.

In general, I think it is important to look at, when we are talking about grid reliability issues or if studies are being embarked upon, I think it is important that we look at all of the experts, whether they are at the National Renewable Energy Laboratory or utilities. Take Xcel Energy, they have done a remarkable job of integrating various sources, fuel mixes, into the grid while maintaining superior reliability.

So I think it is important to listen to all those voices.

Thank you, Madam Chair.

The CHAIRMAN. Senator Cortez Masto.

Senator CORTEZ MASTO. Thank you, Madam Chair.

Gentlemen, welcome and thank you for your willingness to serve and welcome to your family and friends here as well.

Mr. Brouillette, let me start with you.

First of all, thank you for coming to visit with me. I wanted to follow up on the conversation we were having with respect to Yucca Mountain. As you well know, the President's full budget provides

\$120 million to restart licensing activities for a Yucca Mountain nuclear waste repository.

I am opposed to it. My colleague, Senator Heller, is opposed to it. The state is opposed to it. Very directly, are you in favor of siting the nation's nuclear waste at Yucca Mountain?

Mr. BROUILLETTE. Thank you for the opportunity, Senator. I sincerely appreciated our conversation as well.

I'm in favor of following the law, as we talked about—

Senator CORTEZ MASTO. Thank you.

Mr. BROUILLETTE. In your office.

Senator CORTEZ MASTO. And I appreciate that.

So let me ask you this. Do you agree that science should dictate whether high level nuclear waste should be safely stored in a permanent repository?

Mr. BROUILLETTE. Yes, ma'am, I do.

Senator CORTEZ MASTO. Nevada has submitted hundreds of contentions that objectively demonstrate that the site is scientifically unsafe. If the site is declared scientifically unsafe, do you agree that nuclear waste should not be stored at Yucca Mountain?

Mr. BROUILLETTE. Yes, ma'am. I'm aware as well that there is a review underway. And as we discussed in your office, obviously, if the science is so definitive as to show that the site is unsafe, I don't think it's in the interest of anyone to place nuclear waste and endanger the lives of Americans anywhere.

Senator CORTEZ MASTO. Thank you.

Mr. BROUILLETTE. But, if the science were to show that it is safe, we would be obligated to follow the law.

Senator CORTEZ MASTO. Do you support the continuation of DOE's current work on consent-based siting for storage and disposal facilities?

Mr. BROUILLETTE. I'm sorry, ma'am, I apologize, I didn't hear.

Senator CORTEZ MASTO. Sure.

Do you support the continuation of DOE's current work on consent-based siting for storage and disposal facilities?

Mr. BROUILLETTE. I think it's important that states have input into the process.

Senator CORTEZ MASTO. I agree. Thank you.

[Laughter.]

Listen, I appreciate that. I only have so much time.

Mr. BROUILLETTE. Sure.

Senator CORTEZ MASTO. Again, thank you. It was great conversation we had.

Mr. BROUILLETTE. Yes, ma'am.

Senator CORTEZ MASTO. I really appreciate your candor.

Mr. BROUILLETTE. Yes, ma'am.

Senator CORTEZ MASTO. And the conversation.

Mr. BROUILLETTE. Thank you very much.

Senator CORTEZ MASTO. Gentlemen, I have not had a chance, unfortunately, to meet with you so I have a few questions for you as well.

I am going to just throw these questions out to both of you and ask that you respond, if you would.

In late 2016, FERC issued a proposed rule that would eliminate barriers to the participation of renewable energy and electric stor-

age in wholesale markets. Will you support approval of the proposed rule and what changes, if any, would you support before issuing a final rule?

Mr. POWELSON. Senator, thank you for the question.

And if confirmed, I pledge to you that I will read through the record and the comments. As I mentioned to Senator Franken, we need to recognize these new resources that are coming into the market. So I will keep an open mind to that. I don't want to, as you know, as FERC Commissioners we don't pick the winners and losers in the market. But we do have a responsibility as these technologies are emerging and they're going to market, that we have to provide rules and proper incentives for these resources to compete in the market.

I will pledge to you to keep an open mind and continue to work constructively so that we're not, again, getting in a situation of displacing these resources that are providing, believe it or not in my state, a lot of benefits to customers.

Senator CORTEZ MASTO. Thank you, as well in Nevada. So thank you.

Mr. CHATTERJEE. Thank you, Senator. I'd like to echo Commissioner Powelson's comments.

While, you know, I can't speak to the matter before the Commission, nor prejudge it, I would like to echo the conversation I had with Senator Franken. I'm certainly supportive of technological innovation, and there's been tremendous innovation in this space.

You know, I'm for competition and access to markets and particularly when it's in the consumer's interest. I would most certainly judiciously study this issue should I have the opportunity to be confirmed and have it come before me.

Senator CORTEZ MASTO. Thank you.

Do you both agree that the evidence shows that solar and wind power can be reliably integrated into the power grid?

Mr. POWELSON. Well, as a state public utility commissioner, I can tell you it's playing a large part in our energy mix, whether it's rooftop or utility-based solar.

Now Pennsylvania only in its RPS, it only counts for 0.5 percent where if you go across the Delaware River in New Jersey is one of the leading states for solar development. So as the Senator mentioned, as these cost curves come down, it's creating a new opportunity for customers and now we're having a discussion at NARUC about community-based solar. Again, keeping an open mind to all these resources that are coming into the power generation mix is something that I stand behind.

Senator CORTEZ MASTO. Thank you.

Mr. CHATTERJEE. I'd just like to echo the Commissioner's comments, you know, safe, affordable and reliable electricity delivery is essential. And as these new technologies come online I will certainly look to adhere to FERC's core mission and ensure that those principles are maintained.

Senator CORTEZ MASTO. Thank you.

Madam Chair, I noticed my time is up. I'll submit the rest of my questions for the record.

Thank you.

The CHAIRMAN. I appreciate that very much.

Senator Heinrich.

Senator HEINRICH. I just want to thank my colleague from Nevada, as well as my colleague from Minnesota, for those questions. They were very much along the lines of my first question for both of the nominees for the FERC.

I just wanted to mention a story this morning about Tucson Electric Power just inking a deal for three cents a kilowatt/hour. So when we talk about solar PPA and when we talk about benefits to consumers and even on a levelized cost basis, we are seeing many of the analysis come out with solar and wind lower even than combined cycle natural gas, much less things like peaking power. That is incredibly important for consumers across the country, and I think we are just beginning to be able to access what is the tip of the iceberg there.

I want to switch gears since both of you commented on that to transmission. In New Mexico we have enormous supplies of wind and solar resources but what we now lack after substantial development, particularly in wind in the last year, year and a half, is the transmission capacity to deliver that energy to other markets because we are net energy exporter. Without new investment in transmission these resources will simply not fully be developed.

Do you think the Commission has a role to help facilitate investment in new interstate transmission capacity that benefits consumers? And do you think the Commission has sufficient authority to engage or to encourage investment in a new electric transmission capacity or is this an area that Congress should be taking another look at?

Mr. POWELSON. Senator, thank you for your question and it really is a big issue.

You know, we first look at our bulk power system and we look at the, as I mentioned earlier, these tectonic shifts in our generation fleet.

We're doing this on a long-haul transmission system that's carbon 44 tested. And so, there is going to have to be an investment made in transmission to get renewables and other resources to load centers.

Senator HEINRICH. Right.

Mr. POWELSON. To the credit of the former chair, Wellinghoff, and that set of Commissioners, I think we're coming up on a six-year anniversary on FERC Order 1000 which was envisioned to create this highway system for competitive transmission to be built and to recognize these new resources coming into the marketplace.

I still think, as we do a look back on FERC Order 1000, if confirmed, one thing I want to do immediately is sit down with our regional transmission organizations, our independent system operators and kind of see where these bottlenecks are, what's working, what's not working, because again, to your credit as a state, you guys are putting these, you're making an investment around these resources.

Like I joke about Marcellus shale, I'd love to use all 500 trillion cubic feet of natural gas. It's just not the reality. We've got to move these molecules and we've got to move these renewable electrons as well.

So that's, kind of, where I look at the issue. I pledge to you, if confirmed, that we, you know, I would first want to get educated, but more importantly see what's working——

Senator HEINRICH. You see it as a priority.

Mr. POWELSON. I do. I do.

Senator HEINRICH. Mr. Chatterjee, do you want to add to that?

Mr. CHATTERJEE. Yes, just to build on what Commissioner Powelson laid out, I just want to echo and stress the importance of transmission.

Whatever our generation mix, power delivery will rely on continued maintenance of a robust, reliable grid. I agree with you that we need continued investment, and we need to make sure that the return on equity is sufficient to achieve that goal of that needed investment. I would certainly be supportive. And it would be something, should I be fortunate enough to be confirmed, that I would make a priority.

Senator HEINRICH. I want to thank you both for your answers on that, and I want to shift gear to our nominee for the Deputy Secretary position.

I want to start with the most important question which is how do I say your name correctly because I was not here at the beginning.

Mr. BROUILLETTE. It's Brouillette, sir.

Senator HEINRICH. Okay, Brouillette.

I am really pleased to see the Office of Technology Transitions trying some new approaches to promote tech transfer at our DOE labs. We had the chance to talk a little bit about that in my office yesterday.

One example is a really innovative voucher program that pairs small businesses with scientists and engineers at those labs and helps get them up to speed on commercialization of technologies. How familiar are you with the program? And do you think it is a good model for moving new technologies from the labs into the commercial sector?

Mr. BROUILLETTE. Senator, thank you, again, for the opportunity to chat yesterday. I really enjoyed our conversation.

I am not an expert in the program. I am vaguely familiar with it. I have studied it at a high level.

I can tell you that I'm firmly committed to technology transfer within the Department of Energy and the labs, generally. Anything that we can do to move these great ideas from the lab to the marketplace is going to benefit all Americans.

So I will strongly support and, if confirmed, I'll look forward to working with you to advance those issues.

Senator HEINRICH. Thank you, Mr. Brouillette.

Mr. BROUILLETTE. Thank you, sir.

The CHAIRMAN. Thank you, Senator Heinrich.

Senator Cassidy.

Senator CASSIDY. Mr. Brouillette, I know how to pronounce your name, you know what I am saying.

[Laughter.]

It is good to see my constituent back there, and whatever we can do to serve you, please let us know. If you want a tour of the Capitol, let us know. We are glad to have folks visit.

Mr. BROUILLETTE. Thank you, sir.

Senator CASSIDY. I also note that when you were naming your nine children, you actually had their names listed.

Mr. BROUILLETTE. That's important.

Senator CASSIDY. You did not want to skip a name, right?

Mr. BROUILLETTE. That's important.

Senator CASSIDY. Yes, nine gets you there. Yes, I hope they are LSU fans.

[Laughter.]

So anyway, just to go there.

A couple things.

Last year the Department of Energy issued its first conditional loan commitment for an advanced fossil fuel project at the Lake Charles methanol plant. This \$2 billion commitment matched with \$1.9 billion in private equity capital and taking petroleum coke, we are both familiar with that, kind of an end product of the refinement of oil into a methanol facility.

For all the folks who have been yelling in our hearings, it actually takes a by-product of the central products but does something with it capturing the CO₂, using it for enhanced oil recovery. Again, so for those yelling, it should achieve a goal they want which would be to decrease emissions.

So my question is for you. The President's budget proposes to eliminate the Title 17 program, canceling the remaining loan volume authority including that which would include this.

Now aside from environmental and what do we do with pet coke, it creates about 1,000 construction jobs and 200 permanent jobs in my state but also jobs in Texas for enhanced oil recovery which again, is what we should be doing worldwide, energy security, economic development, et cetera.

So, I guess this is, kind of, a beg to answer question but assuming the projects continue to prove its creditworthiness, will you work with me to advance this unique energy project through the appropriate process?

Mr. BROUILLETTE. The short answer, sir, is yes. I look forward to visiting with you further about that, if I'm confirmed.

As we mentioned earlier, or as I mentioned earlier in the Committee, to the Committee, I was not part of the budget process and I understand full well that this is the President's request to the Congress, but at the end of the day the Congress will work, both the House and the Senate, to determine the final appropriate numbers for these programs.

Once you do that and once you complete your process, I will certainly execute to the letter of the law.

Senator CASSIDY. Now let me just ask your attitude because my goal, my idea, is that you have this, kind of, large-scale, first-of-kind project and the equity markets really do not quite know how to price it.

As long as the federal taxpayer gets a return on her investment, we have got to protect the federal taxpayer, but it is a way to, kind of, show that you can do it, taking it to scale. Again, doing a lot of positive things. Would you agree with that or, philosophically saying?

Mr. BROUILLETTE. I do agree that on occasion it is appropriate for the government to step in and provide that type of assistance. I think you're referring to some of the loan programs and perhaps the ARPA-E program within the Department of Energy.

I would like the opportunity, sir, if confirmed, to get there and to learn more about the structure of those two agencies, the structure of those two programs. Coming from a finance background or financial institution, I think it's important that they have proper underwriting and they have proper standards around those loans and around those grants. We just need to understand what the risk portfolio represents.

Senator CASSIDY. Sounds great.

Thank you.

Mr. BROUILLETTE. So I will look forward to working with you, if confirmed.

Senator CASSIDY. Thank you.

Mr. Powelson, obviously, the Marcellus shale has done fantastic in Pennsylvania. It has created an incredible number of jobs. I noticed, speaking in my home state, a lot of folks with French last names have moved to Pennsylvania to help teach the Pennsylvanians how to develop that gas. That said, what impact has the increased use of natural gas in your power grid had upon greenhouse gas emissions in your state?

Mr. POWELSON. Senator Cassidy, thank you for your question and I appreciate the opportunity to have met with you on this topic.

First of all, we are an open border state, so we love having raging Cajuns come into the Commonwealth of Pennsylvania.

[Laughter.]

Senator CASSIDY. It has upgraded your food, I will tell you that.

Mr. POWELSON. It certainly has.

[Laughter.]

You mentioned Marcellus development, you know, this has been an economic, if I can use the word, game changer, for Pennsylvania, but it's hit on all levels.

So the climate piece. Pennsylvania has seen a 32 percent reduction in NOx, SOx and mercury.

Senator CASSIDY. I only have about 30 seconds left.

Mr. POWELSON. Yes.

Senator CASSIDY. And you attribute that to the transition to natural gas?

Mr. POWELSON. I think natural gas is a huge driver in that. I won't discount, though, renewables.

Senator CASSIDY. But as a percent of your overall energy generation, what percent does renewables? What percent is natural gas?

Mr. POWELSON. Sir, the renewable piece is less than eight percent of the energy mix and nuclear. Pennsylvania is the second largest nuclear production—

Senator CASSIDY. And your net gas is what percent?

Mr. POWELSON. Gas is upwards to about 30 percent of the energy mix now.

Senator CASSIDY. What we have observed is that if we can export this gas to other countries, replacing coal in their fuel mix with our

natural gas, we create jobs here, but we also lower their greenhouse gas emissions.

Clearly FERC will be instrumental in that because you all are going to permit those LNG export terminals, correct?

Mr. POWELSON. Well, again, on a case-by-case basis with thorough review and public input? Yes, I think we'll come to conclusions on these projects.

Senator CASSIDY. I will point out that I think you mentioned earlier, or somebody did, that we are now exporting gas to Chile and they are trying to use natural gas again to improve their greenhouse gas emission profile. So for all those concerned with greenhouse gas emissions, natural gas is the way to go.

That said, I yield back.

Thank you.

The CHAIRMAN. Thank you, Senator Cassidy.

Senator Duckworth.

Senator DUCKWORTH. Thank you, Madam Chairwoman.

Gentlemen, I was deeply alarmed late last year by reports that the Trump Administration transition team was collecting names of career civil servants at DOE who worked on climate change matters.

My concerns only increased when subsequent reports emerged that the Secretary of Energy was actively working to manipulate DOE's research efforts to produce studies that advance a non-scientific partisan agenda.

Mr. Brouillette, do you think it is appropriate for the Department of Energy to conduct a witch hunt against scientists who have worked on climate change? I know you were not at the Department when some of this happened, but do you support that type of activity or will you disavow it now?

Mr. BROUILLETTE. Thank you, Senator, I appreciate the question.

I, obviously, disavow any witch hunt. That is not our intention. I am not familiar with the activities of the Department. I am aware that a letter was sent to federal employees within the building. I read the press accounts of that and I did see Secretary Perry's testimony to that effect. I'm aware that I don't think he asked for that. I can assure you that if I am confirmed, that is not something I will pursue.

Senator DUCKWORTH. Thank you.

As the Chief Operating Officer of the Department, will you protect career civil servants who are doing important scientific research from political interference and politically motivated budget cuts?

Mr. BROUILLETTE. Yes.

Senator DUCKWORTH. Thank you and thank you also for your service.

Let me just say it speaks well of you that you come to this from USAA—as many of my fellow veterans and I call it, the “Mother Ship.”

[Laughter.]

Senator DUCKWORTH. You certainly know customer service, so thank you for—

Mr. BROUILLETTE. Thank you for that and thank you for your service as well.

Senator DUCKWORTH. Thank you.

This next question is for Mr. Chatterjee and Mr. Powelson. Approximately 30 states have passed renewable portfolio standards and multiple states, including Illinois, have adopted policies who support existing nuclear power plants. We are the number one.

[Laughter.]

States are enacting these policies for a wide variety of reasons, including energy diversity, environmental benefits and economic development. These policies were passed by state legislatures and I know this was discussed, but do you agree that state legislature is the appropriate place for these policies to be decided? As FERC Commissioners, would you act to preempt these laws as some have suggested?

Mr. POWELSON. Senator, thank you for your question.

And this is an issue that is probably coming before the Commission, so I don't want to prejudge it but your question about—I'm a states' rights individual.

Senator DUCKWORTH. Great.

Mr. POWELSON. And I respect, I'm familiar with what Governor Rauner signed into law to support those nuclear plants.

If we're talking about climate, I will say at a high level, nuclear power is part of that energy mix. We're going to need it.

So as this comes our way, I just pledge to you that I will keep an open mind. I always come from the idea or the philosophy of do no harm to the states. We should—we don't want people losing jobs, and we want these units to run because we want the clean energy resource, the base load resource.

So again, looking at the technical conference that Chairwoman LaFleur put together, I thought was a good first step. And then we'll, obviously, have a discussion, I think, as a FERC Commission on what the next iteration or the conversation is at the higher policy level.

Senator DUCKWORTH. Well, we are deeply concerned in Illinois that there would be any moves that would prohibit the state from being able to provide clean energy incentives to our nuclear power plants which would then cause them to have to shut down and we would lose those jobs. Yes?

Mr. CHATTERJEE. Thank you for the question, Senator.

As I stated earlier, I believe in states' rights. I believe in local communities making these determinations. I also believe that to ensure safe, affordable and reliable electricity delivery, we need fuel diversity. And I understand that there are some very complex questions around how to maintain that fuel diversity with some of the market challenges that we face.

To echo Commissioner Powelson, I understand FERC had a technical conference on this earlier this month and, should I be fortunate enough to be confirmed, I know this is one of the critical matters that will come before the Commission and I will certainly look very closely at it and have an open mind as I go into it.

Senator DUCKWORTH. Thank you.

This next question is for all three witnesses. Do you agree that human activities are warming the planet or will you advance the Trump Administration position that mandates climate change is

not real or a problem deserving of attention? Which one is it? I believe that this will affect your role.

Mr. POWELSON. Senator, thank you for the question.

I am not a climate denier, so I recognize that there's human activity. CO2 emissions is a big, very big, public policy discussion and I will let you know that in my state, as I've mentioned to you, we're very proud of where we're going with our energy policy and it recognizes reductions in CO2.

I will just let you know, one statistic which is amazing about the U.S. right now, for the first time since 1970 in this country, the U.S. power sector had lower CO2 emissions than the transportation sector. So that tells me we're seeing market-based outcomes toward decarbonization, and I think it's a good thing for the environment.

Senator DUCKWORTH. Or from the Clean Power Plan which the Trump Administration is now actively working to reverse.

Mr. CHATTERJEE. Senator, to your question, I think it is important to look at, should I be fortunate to be confirmed, what role I would play at FERC.

FERC's instrumental role is in overseeing reliability. I think that any policy put forward by Congress or the Administration that would seek to mitigate carbon emissions would have to ensure that it not have a negative impact on reliability. And I think it's key for public acceptance that there not be a negative impact on reliability.

And should those policies be put forward, I would certainly work very closely with proponents of the policy to ensure that that reliability impact not, that there not be a negative impact of reliability.

Senator DUCKWORTH. Thank you.

Mr. Brouillette?

Mr. BROUILLETTE. Quite simply, Senator, the climate is changing, and we're all living here so we must have some impact.

I look forward to working with you, if confirmed, to find out what we might do with the DOE labs to help us understand the impact more clearly and perhaps in the future, perhaps balance some of the actions that we take.

Senator DUCKWORTH. Thank you.

Madam Chairwoman, thank you, you have been very generous.

The CHAIRMAN. Senator Risch, you came in next.

Senator RISCH. Thank you very much, Madam Chairman.

First of all, let me say that I think all three of these nominees we have in front of us are highly qualified people, and I think the President should be commended for his choices in these areas. I want to particularly thank you for being willing to take on this public service.

I am particularly grateful to have Mr. Brouillette where he is. He has, on a very parochial basis, I know you would never do this, Madam Chairman, but on a very parochial basis, he has an in-depth understanding of what happens at the Idaho National Laboratory. He has a long history there. I look forward to working with him on some of the challenges we have there and also in cultivating the great work that the lab does for the American people and really for the world in the areas they work in.

So—

Mr. BROUILLETTE. Thank you, Senator.

Senator RISCH. Thank you, again, all of you, for being willing to serve.

Thank you, Madam Chairman.

The CHAIRMAN. Thank you, Senator.

Senator FLAKE.

Senator FLAKE. Thank you.

Sorry I was not here for much of the testimony, but I appreciate the meeting in my office with Mr. Brouillette.

I wanted to talk about WAPA, the Western Area Power Association. As you know, it is the power marketing administration that falls under your purview at DOE, and we have been working to bring some clarity and transparency that is lacking.

We believe that WAPA, now Secretary Perry, committed to ensuring transparency there, and you and I discussed that earlier this week in my office. But you described, at that point, your role as running the day-to-day operations at the Department. How will that impact and what do you plan to do with regards to PMAs?

Mr. BROUILLETTE. Well, sir, I think—and thank you as well for the opportunity to meet with you earlier this week. I really appreciated that.

My role, as the Deputy Secretary of Energy, should I be confirmed, is to be the Chief Operating Officer, it is to operate the agency from day-to-day, and that would include compliance with the federal law. It would also include, I'm sorry, I misspoke there, with the rules and regulations of the Department and included in that or complies with Whistle Blower Acts and the rules and regulations of the Department.

I can commit to you that we will work together, if confirmed, to increase the transparency at WAPA, to fix some of the issues that we know or I've read about in the paper and to ensure that there is strict compliance with the Whistle Blower Acts.

Senator FLAKE. Thank you.

There is a long history of American development and innovation in energy technologies, as we all know, and the Department's research programs have played an important role in this area. Historically, these research programs have had greatest impact when they were focused on clear and specific goals, like when the world's first nuclear plant was developed in under a year. Goals can also focus resources in times of declining budgets and tight budgets as we face today.

How do you think that DOE research programs can benefit by establishing specific goals on such things as advanced nuclear reactors or grid scale storage that can take advantage of the intermittent power generation that we have today, particularly with renewables?

Mr. BROUILLETTE. I think renewables are an important component of where we're going to be, not only five years from now, but tomorrow. It's moving very, very fast, as we mentioned earlier in other testimony on the Committee, and the base load, other issues are changing very, very rapidly within the energy space.

With regard to the labs, if confirmed I look forward to working with them to ensure that their technology moves to market quicker. I'm going to, hopefully, take some of the business experience that I've had and define very measurable, or at least put to-

gether very measurable metrics that we can use to gauge their performance. That's something, I think, they've done pretty well in the past, and I look forward to working with them to improve that.

Senator FLAKE. Well, great. Obviously we want to take advantage of the intermittent generation, particularly renewables, but without grid scale storage at this point, we want carbon-free base load and a lot of that comes with nuclear.

Mr. BROUILLETTE. It does.

Senator FLAKE. But until we can have the advanced technologies that allow these plants to throttle down in the appropriate times, then we are not going to fully take advantage here.

Let me talk about the licensing process for a minute with the other two gentlemen. Nuclear power plants are critical, obviously, as we said, and not emitting base load generation.

How do you envision FERC addressing the current market issues of maintaining reliability and recognizing the states' interests in supporting carbon-free generation while maintaining a reliable, carbon-free generation with a reliable portfolio without cost-effective, as I said, commercially available grid scale storage at this point?

Mr. POWELSON. Senator, thank you for your question. If confirmed, I would, obviously, get myself immersed in what took place in the first week of May here with the technical conference.

We all know at a macro level what's going on. I mean, a lot of these nuclear units are being displaced economically in markets because of, what I considered the Pennsylvania phenomena of \$1.92 per MM BTU gas coming out of the well head. And in my state what's happening is these stand-alone reactors are under tremendous pressure to clear in the market construct.

What we're also seeing though is nuclear units that are going through relicensing projects and that's a good thing, but we've only built three new nuclear units right now in the country. And I remember sitting in a room with one of your colleagues, Senator Lamar Alexander, when we were talking in 2008 about the nuclear renaissance.

And so today, three new reactors. We are seeing these uprates take place at existing reactors, but it seems to be these stand-alone reactors are under tremendous pressure because of cheap natural gas and honestly there's issues with wind, negative wind, pricing at night creating what was once considered a too-cheap-to-meter unit of power production being under siege by the integration of new renewables into the grid.

So, just to answer your question, I think it's going to be critically important for the FERC to, kind of, look at all the moving parts of this public policy issue and figure out a way, probably work with the NRC and other groups, DOE, through the grid study, how do we keep these things viable.

Senator FLAKE. Great.

Mr. CHATTERJEE. Just quickly, to that Senator, I strongly believe in the need for fuel diversity.

We need it all. We need nukes, we need renewables, we need hydro, we need coal, we need gas, and we need these innovative technologies.

Senator FLAKE. Well, thank you.

A post note, we need a part of DOE to make sure that we focus our resources on research to get to these new modular, smaller units that can throttle down and take advantage, as I said, of intermittent generation.

Then on the licensing side with FERC, we really need to move more quickly than we have in the past to bring these new technologies to the market.

Thank you.

The CHAIRMAN. Thank you, Senator Flake.

Senator Barrasso and then Senator King.

Senator BARRASSO. Thank you very much, Madam Chairman.

Congratulations to all of you.

Mr. Brouillette, I would like to ask you about foreign control of American businesses. It was reported in the Wall Street Journal last week that the state-owned, Russian oil company may be in a position to take over U.S. energy assets of Citgo, if Citgo's parent company defaults on its debt. Its energy assets in the United States include refineries, pipelines, numerous petroleum platforms, foreign investment in the U.S., especially by an adversary like Russia has national security implications.

So the Committee on Foreign Investment in the United States (CFIUS) is charged with, as you know, reviewing transactions that could result in control of a U.S. business by a foreign entity. CFIUS is authorized to block transactions or to impose conditions on a transaction in order to mitigate any threat to our nation's security. The Secretary of Energy and by delegation, the Deputy Secretary, is a member of CFIUS. The Russia/Citgo deal is deeply concerning to me because it would place critical U.S. energy assets under the control of a foreign adversary.

Can you just share with us some of your thoughts on this and what reassurance you may want to be able to give me and to give all of us in terms of what steps you will take to ensure that the Russia/Citgo deal does not pose a threat to our nation's security?

Mr. BROUILLETTE. Thank you, Senator. Thank you for the question.

I am familiar with the CFIUS process. Unfortunately, I am not familiar with the details around this particular deal. And if confirmed, I can commit to you to work closely with you.

But respectfully, sir, I would like to take that question for the record, so I would have the opportunity to learn more about it before I make a public comment about it.

Senator BARRASSO. We will be happy to get you that report that came out in the Wall Street Journal last week.

Mr. BROUILLETTE. Thank you, sir.

Senator BARRASSO. Thank you.

For the other two nominees, and we can start with Mr. Powelson and then I will ask you, Mr. Chatterjee, to jump in.

In 1978 Congress passed the Public Utility Regulation Policies Act, commonly known as PURPA. It was a response to skyrocketing oil prices at the time caused by the oil embargo of 1973. The goal was to reduce the use of foreign oil in power generation, to provide the U.S. with greater energy independence. To achieve that goal, this legislation required all electric utilities, including municipal utilities and rural electric cooperatives, to purchase all

electric power made available from renewable power generation resources known as qualifying facilities.

Well, times have changed since 1978. The energy industry has experienced revolutionary changes in fuel supply, in production and in regulation and in particular, renewable resource generation is now increased substantially. About 15 percent of all U.S. electrical generation is from renewable sources. The oil, on the other hand, has decreased from 16 percent of U.S. electric generation back when this law was passed to less than one percent today.

Due to these revolutionary changes, some have called on FERC to reform its regulations with regard to PURPA and to reflect current industry conditions. Could both of you weigh in on what changes you might plan to make to FERC's PURPA regulations?

Mr. POWELSON. Senator, thank you for the question.

I think you teed it up nicely. I mean, PURPA is a 1978 vintage document. It was addressing a scarcity issue and here we are today, as I mentioned in prior comments, we're leaning toward energy independence and the generation mix has changed dramatically. I'm aware that the FERC has sought or has instituted a technical conference months back, or maybe a year ago, seeking comment.

I come from a state that we very much believe in what we call "least cost procurement" because again, on the consumer protection side we want to, you know, not put our thumb on the scale, but we want those resources, the least cost, to provide that benefit to the consumer.

So I would pledge to you, if confirmed, I mean, I say this respectfully, a congressional review of PURPA, a PURPA 2.0 doctrine may be part of a potential energy bill. But for now, I think, if confirmed, I would do my part to look at the record and see how, what's working in PURPA and what's not.

Senator BARRASSO. Mr. Chatterjee?

Mr. CHATTERJEE. Thank you for the question, Senator.

To echo what Commissioner Powelson says, I understand that FERC did undertake a technical conference on this matter within the last year. Should I be fortunate enough to be confirmed, I will certainly work with my colleagues to review the findings of that conference.

But I will say that any major changes to PURPA would be made by Congress. And while you have my assurance I would work very seriously on these issues, should I be confirmed, I think any major changes need to come from this body and not from FERC.

Senator BARRASSO. Thank you very much.

Thank you, Madam Chairman.

The CHAIRMAN. Thank you, Senator Barrasso.

Senator King.

Senator KING. Thank you, Madam Chair.

Welcome, gentlemen, thank you for your willingness to serve our country.

Mr. Brouillette, I am very concerned about the depth of cuts to the Department of Energy that are proposed in the President's budget. I understand that you are not a member of the Administration yet and that you will, I presume, honor the decisions made

here in the Congress in terms of what those budgets ultimately look like.

Here is what we are talking about: ARPA-E, Advanced Research Projects Agency, eliminated, gone; Advanced Technology Vehicle Manufacturing, gone; research program cuts; Office of Science, 17 percent cut; Office of Energy Efficiency and Renewable Energy, cut by 70 percent; and this is the one that really bothers me, Office of Electricity Delivery and Energy Reliability, cut by 48 percent.

We had a hearing in this room about two weeks ago about the grave risk of disruption of our grid by malign actors via cyber. To be cutting the Office of Electricity Delivery and Energy Reliability by almost 50 percent is irresponsible in the extreme.

So also fossil fuel energy research and development, cut by 58 percent.

These cuts are absolutely unacceptable, and they are cutting in exactly the wrong place. It was the research funds from the Department of Energy that helped give us the fracking revolution that has revolutionized the energy situation in this country, and to cut these kinds of funds so dramatically is just shortsighted.

Now I expect, I hope, what you are going to tell me is you will enforce the law, you will implement the law and you will, if these funds are re-appropriated by this Congress, you will steward them appropriately according to the instructions of the Congress. Is that correct?

Mr. BROUILLETTE. Yes, sir, that's exactly what I'm going to tell you.

Senator KING. Thank you.

[Laughter.]

Thank you for finding a question buried in there.

[Laughter.]

But—

Mr. BROUILLETTE. Yes, sir.

Senator KING. I am not making a speech here, I am sincerely worried about this. I am on the Intelligence and Armed Services Committees and I can tell you our grid is a target.

Mr. BROUILLETTE. Yes, sir.

Senator KING. And to be cutting funds that involve grid reliability is just not prudent in any way, shape or form.

I guess for our FERC nominees, I understand there has already been—and I apologize for coming in and out. I have three hearings this morning at the same time, minor hearings, Armed Services and Budget, so I do apologize. But I hope that FERC will look at the distribution system and look at the issues involved with distributed energy, demand response because, I think, that is an important part of the future of our energy system and we have to find a way to value it appropriately and not allow the development of, what I believe, is a national security development by decentralizing the grid to be artificially constrained by arbitrary fees and costs that are designed not to reflect true cost, but are designed to impede the development of this important part of our energy sector.

Mr. Powelson, your thoughts?

Mr. POWELSON. Well, thank you, Senator, for the question. And again, I appreciated the opportunity to meet with you and your staff.

This is really where we're headed as a country with recognizing this diverse energy portfolio and states are driving that. So as you and I talked, I mean, combined heat and power systems, demand side management tools for residential consumers and industrial customers is really a good thing and it's part of this new energy mix.

And I can pledge to you that, you know, look at our Pennsylvania experience. I mentioned earlier in the hearing, utilities have been close to \$1 billion on these programs with a net value to customers or what we call a total resource cost value of \$1.8 billion in benefit to consumers.

Senator KING. Pretty good return on investment.

Mr. POWELSON. That's a pretty good return, you're right. And so, if confirmed, I will pledge to you my continued support for distributed energy resources and the value they play.

And I want to commend the former FERC Chairman, Norman Bay. One of the things that he did was to start a docket around fast start resources and creating a value food chain for those resources in the markets.

I told you earlier, my experience with Hurricane Sandy and how these resources played a critical role in grid resiliency is so important. You mentioned cyber as well. So these are all part of this new, what I consider, 21st century landscape.

Senator KING. Finally, Mr. Brouillette, the Department has, particularly through the labs, established some important relationships to us in Maine at our University of Maine with Oak Ridge, for example. I believe those labs are national treasures and should be protected and preserved. I also hope that you will commit to me to maintain those relationships. I would like to invite you to Maine to visit the University of Maine composites lab and see the work that they are doing with Oak Ridge which is really extraordinary.

Mr. BROUILLETTE. Yes, sir.

I'd be honored. If confirmed, I'd be honored to join you in Maine. And yes, I will continue to be an advocate.

Senator KING. I look forward to introducing you to some of your kinfolk in the St. John family.

[Laughter.]

Mr. BROUILLETTE. I look forward to it as well, sir. Thank you.

Senator KING. Thank you.

Thank you, Madam Chair.

The CHAIRMAN. Thank you, Senator King.

Gentlemen, thank you for being here this morning. I certainly have additional questions, but like Senator King, I have another Committee hearing that I am expected to attend. I know that many of our members will have questions, and we ask that they be submitted for the record by the close of business today. We would anticipate and expect your prompt responses.

As I indicated in my initial statement this morning, my hope is to be able to advance your names quickly, along with that of Mr. Bernhardt, so that we can process these nominees for the FERC and DOE and allow for business to proceed.

We thank you for your willingness to serve. We thank your families that support you every day and to the children that have been

here, you have been extraordinarily well behaved. I think you set a fine example for grownups, so we appreciate that a great deal.

[Laughter.]

With that, ladies and gentlemen, we stand adjourned.

[Whereupon, at 11:52 a.m. the hearing was adjourned.]

APPENDIX MATERIAL SUBMITTED

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Questions from Ranking Member Maria Cantwell

Question 1: The transportation sector remains the top contributor greenhouse gas (GHG) emissions and foremost consumer of oil in the United States. But strong standards, coupled with new vehicle technology developed with the support of the Department of Energy and our national labs, have helped to reduce emissions and oil consumption. In fact, current fuel economy standards have slashed emissions by almost 130 million metric tons of CO₂ – roughly the amount of GHGs emitted to power about 20 million homes for one year.

- Will you encourage the Administration to support strong automobile efficiency standards that help save consumers money?

Answer: I will encourage the Administration to strongly support standards that work best for American families.

- How do you see the Department of Energy partnering with industry to further promote fuel efficiency and reduced emissions?

Answer: It is my understanding the Department is already partnering with industry and if confirmed, I look forward to being fully briefed and ensuring these important relationships continue.

Question 2: The Department of Energy has published an annual U.S. Energy and Employment Report during each of the last two years. This report provides an overview of the current national energy employment landscape across a variety of sectors and is an important tool for policy makers, energy stakeholders, workers, and the energy industry at large.

- Will you commit that the Department of Energy will continue to publish the U.S. Energy and Employment Report on an annual basis?

Answer: Employment data is, indeed, an important tool for policy makers and others. The most recent edition of the *U.S. Energy and Employment Report* was published by the Department on January 3, 2017. If confirmed, I will review this report and be fully briefed.

- The most recent U.S. Report found that 73 percent of energy companies found it difficult to hire skilled employees. How will you make workforce training a priority at the Department of Energy?

Answer: A highly skilled workforce is vital to America's energy needs. If confirmed, I look forward to ensuring work force training is appropriately prioritized.

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Question 3: The Hanford Waste Treatment and Immobilization Plant will treat the radioactive and hazardous wastes currently stored in 177 underground tanks and convert them to glass waste forms for disposal through a process known as vitrification. Hanford has been an interim storage site for 70-plus years.

The final report of the Blue Ribbon Commission on America's Nuclear Future urged the Obama Administration to conduct a review of policy to dispose of defense waste. After this review was completed the Administration decided to seek to site a separate facility to safely store defense waste.

Defense waste has different physical characteristics than commercial. In addition, several states have legally-binding site clean-up commitments that require the Department of Energy to remove defense waste by a specific date. Moreover, scientific analysis has shown there are both technical advantages and potential cost-savings associated with a separate Defense Waste Repository.

- Can we count on you to provide a disposal option for the Defense Waste that has resided at Hanford for 70 years?
- Will you ensure that any decisions that are made about how waste is processed will be done with input from the state of Washington Department of Ecology and the entire Washington congressional delegation?

Answer: Visiting these sites and understanding the nature of this waste, as well as options for waste processing that enable us to achieve our obligation to the taxpayers will be a high priority for me. If I am confirmed, I will work with the State of Washington, the Washington congressional delegation, and other stakeholders to ensure we are making sustainable, risk-informed, and fiscally wise decisions regarding the processing of this waste.

Question 4: Nuclear nonproliferation is an important mission throughout the Department of Energy. The National Nuclear Security Administration's (NNSA's) Defense Nuclear Nonproliferation program is critical to our security. The NNSA works with the National Laboratories to provide partner countries and the International Atomic Energy Agency with the expertise needed to prevent nuclear materials and technology from reaching the hands of terrorists and rogue states.

Yet, despite the importance of the work done by the National Laboratories and the NNSA to prevent dangerous nuclear materials getting in the hands of terrorists the Trump Administration has proposed to cut the Defense Nuclear Nonproliferation account.

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It strikes me as ridiculous that this Administration advocates building a wall to keep us safe but then cuts programs that protect us from 21st century threats such as nuclear weapons, cyber threats, and terrorist attacks with WMDs.

- Will you impress upon the Administration the importance of the Defense Nuclear Nonproliferation program to keep our nation safe?

Answer: If confirmed, I commit that I will advocate for the Department in interagency deliberations. The Department is committed to nuclear security, including its nonproliferation functions. I look forward to being fully briefed on the Department's nonproliferation functions if I am confirmed.

Question 5: 97 percent of climate scientists believe that climate change is real, is already happening and is going to get worse. If we don't heed this scientific consensus, the U.S. will be forced to spend tens of billions of dollars a year responding to the impacts of extreme weather, sea level rise, and infrastructure damage due to climate change. You may ask, how can our economy afford to do what is necessary to reduce greenhouse gas emissions.

- How can we afford not to act?

Answer: I believe the climate is changing. We're all living here, so we must have some impact. I agree with Secretary Perry that the question is how we address it in a thoughtful way that doesn't compromise economic growth, the affordability of energy, or American jobs.

- Do you believe it is in the nation's best interest to continue to collect and make available to the scientific community the data and modeling capabilities necessary to understand how our climate is changing, and what it means for our national security, our infrastructure investments, our economy and our citizens?

Answer: I believe the climate is changing. We're all living here, so we must have some impact. I agree with Secretary Perry that the question is how we address it in a thoughtful way that doesn't compromise economic growth, the affordability of energy, or American jobs

Question 6: The Department of Energy's appliance efficiency standards program has been extremely successful. For example, today the typical new refrigerator uses one-quarter the energy it did in 1973 – despite offering 20 percent more storage capacity and being available at half the retail cost. New clothes washers use 70 percent less energy than they did in 1990 and air conditioners use about half the energy.

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The typical household spends about \$500 less a year on utility bills thanks to existing national efficiency standards for appliances and equipment. Starting with the first standard finalized by President Reagan, appliance efficiency standards will have saved American consumers and businesses nearly \$2 trillion on their utility bills by 2030.

- The appliance efficiency program has a long history of bipartisan support going back to President Reagan. Do you agree that the program is valuable?

Answer: I believe we owe it to the American people to examine all programs to see how they are being implemented and make sure that all programs work for the benefit of the country.

Question 7: Secretary Perry told this Committee during his confirmation hearing that cybersecurity is going to be one of his top priorities at the Department of Energy.

- How can cybersecurity be a top priority if the agency's budget proposes to cut spending on cybersecurity by 32%?

Answer: I support the President's budget. Cybersecurity remains a top priority and, if confirmed, I will work within the resources provided by Congress to ensure we support this important mission.

- How can the Department protect our critical energy infrastructure from cyber intrusions if you do not have the funds to do so?

Answer: I support the President's budget. Cybersecurity remains a top priority and, if confirmed, I look forward to working alongside our national security experts to support this important mission.

Question 8: Modernizing the Columbia River Treaty is of critical importance to Washington State, the Pacific Northwest, and the country. Tribes, power companies, environmental interests, transportation and agriculture interests, the fishing industry, counties, and towns are all intently focused on how and when the treaty will be modernized.

I personally discussed this issue with Canadian Prime Minister Justin Trudeau and Secretary of State John Kerry, and I urged the Obama Administration to finalize its negotiating position. In October, 2016, the State Department finalized the United States negotiating authority, and we currently have a chief negotiator in place. However, the Canadians have not appointed a chief negotiator, and under the current administration, progress has been extremely slow.

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- Will you commit the Department of Energy to help expedite the negotiations with Canada should you be confirmed?

Answer: Should I be confirmed, I will learn more about this effort from Bonneville Power Administration (BPA) officials. I also will support BPA's effort to modernize the Columbia River Treaty in a manner consistent with the Administration's goal of renegotiating or terminating international agreements that no longer benefit the interests of the United States.

- Can you ensure that the critical voice of the stakeholders in my state and region can remain in regular contact with the Administration during the negotiations?

Answer: Yes

Question 9: The President's Budget proposes to sell approximately 270 million barrels of Strategic Petroleum Reserve (SPR) crude oil by 2027; leaving roughly half of the remaining SPR inventory after all sales currently authorized by law are completed.

Forty years ago, we created the SPR to prevent economic and security impacts of crude oil supply disruptions. That's exactly what had happened with the Arab oil embargo in 1973. The core policy reason for the reserve hasn't changed since then – nor should it. The SPR is our most important, federal, energy security asset.

- Do you agree that we should auction off our energy security by selling the Strategic Petroleum Reserve?

Answer: I have not been part of the discussion to draw down the Strategic Petroleum Reserve. I look forward to being briefed on this matter and working with you going forward should I be confirmed.

- Do you believe oil markets are subject to price volatility that affects U.S. consumers?

Answer: Yes. Price volatility -- especially price spikes -- does impact consumers.

- Do you believe the core policy reasons for the establishment of the Strategic Petroleum Reserve still exist today?

Answer: The core reasons exist, though there is room for discussion as to the actual size needed and the footprint of the reserve itself.

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Question 10: Our 140 million residential and commercial buildings consume 40 percent of the nation's energy – that's more than any other sector of the economy. That is why I am a strong supporter of "smart buildings" – which uses advanced technologies, such as improved building controls, sensors, and more efficient equipment to increase efficiency.

In 2014 efficiency measures reduced energy bills for home and building owners by \$70 billion. When energy efficiency reduces our utility bills it has a direct, positive effect on the overall economy. The American Council on an Energy Efficient Economy estimates that for each dollar saved due to energy efficiency, the economy benefits by 2 dollars and 24 cents.

The Department of Energy, through its Building Technologies Office and the National Labs, has played a critical role in advancing energy efficiency in buildings by, for example, improving building monitoring and control equipment to enable significant additional building energy savings.

At a cost of less than \$2 per household, the Building Technologies Office helps consumers save almost \$500 per year. The budget proposal released on Tuesday cuts this program by two-thirds.

- Do you agree with me that it's critical to use the Department of Energy's capabilities to help building owners make retrofit and construction choices that employ smart technologies to make dramatic reductions in building energy consumption?

Answer: Yes, and I believe this is possible under the President's proposed budget.

- In your opinion, isn't helping energy bill payers cut energy waste in order to unleash American productivity an important function of the premiere energy R&D agency?

Answer: I agree that helping to cut energy waste is an important function and I believe this will happen under the President's proposed budget.

Question 11: DOE's Weatherization Assistance Program (WAP) lowers energy use and costs for low income families by supporting energy efficiency home retrofits through state-managed networks of local weatherization providers.

Although WAP has improved more than 7 million homes since the program began in 1976, approximately 39.5 million households are eligible for WAP services today.

- Mr. Brouillette, are you aware that every dollar invested in the program attracts one matching utility program dollar and produces \$2.51 in benefits to households and

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society? Isn't this the kind of return on federal investment we should be expanding not eliminating?

Answer: I have not read the study that this question references. If confirmed, I look forward to being fully briefed on this matter.

- Are you aware that DOE's Weatherization Assistance Program is also a job creator? WAP funds support approximately 8,500 direct and indirect jobs per year. Weatherization programs have also trained more than 200,000 American workers, boosting their eligibility for jobs and helping to grow the clean energy workforce.

Answer: I need to learn more about this program and its effectiveness. I support the President's budget and believe that it leaves more money in the private sector, allowing the private sector to create sustainable jobs.

Question 12: During his confirmation hearing, Secretary Perry committed to adequately fund Hanford to continue progress being made at the site and protect the workers there. The President's Budget makes the Secretary's commitment ring hollow. The budget does not allow for progress to be made on the Central Plateau of Hanford, where recently a tunnel containing radioactive materials collapsed.

The budget remained flat for the Hanford Tank Farms where just last week a workers' clothing was contaminated with radioactive constituents. The budget cuts community support by 46%, this money is used for oversight and outreach purposes and perhaps most importantly funding the Richland School district. This is baffling. Mr. Brouillette, you previously served at the Department and knows how important it is that we adequately fund the work being done there.

- What actions will you take immediately to change the Administration's thinking on Hanford? How will you educate them on how critical this mission is to the people of Washington and the nation?
- I toured the tunnel collapse two weeks ago and it is extremely close to active work sites. We were extremely lucky that no one was hurt. But I would rather not have luck dictate worker safety. I need you to meet with the proper DOE officials to determine what funds are needed to stabilize facilities at Hanford. Will you do that and get back to me this month?

Answer: Visiting the Hanford Site and other former defense sites across the nation is a high-priority for Secretary Perry. If confirmed, I will commit to using the information I learn about

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Hanford to better inform members of this administration and strengthen our decision-making process.

Question 13: We have an obligation to the people working at the Hanford site. In just the past two weeks a tunnel collapsed adjacent to the Plutonium-uranium extraction facility, which contains fatally harmful radioactive constituents and more recently radioactive contamination was found on a workers clothing.

These events of course highlight how dangerous Hanford is and the extreme focus we must maintain on the safety mission whether that be improving union-contractor relations, maintaining a robust research and development program to improve safety and remediation technology, and improving the workers compensation program.

The complexity of the Hanford clean-up and safety risks requires oversight and that is why I have requested the Department of Energy Office of the Inspector General to investigate the workers compensation program at Hanford, which was recently initiated and asked the National Institute for Occupational Safety and Health and the Department of Energy Office of Enterprise Assessments to maintain an annual oversight mission of the safety practices at Hanford and development of new technology.

- Do you acknowledge the extreme risk to workers at the Hanford site and commit to improving worker safety and improving the worker compensation program and the Departments contribution the Energy Employees Occupational Illness Compensation Program.
- Do you acknowledge that the Department has a lot of work to do to improve how it helps sick workers?
- Will you commit to work with me to fix the Departments deficiencies and work with the unions and advocacy groups to get to the bottom of the problems plaguing the workers compensation program at Hanford?
- Will you commit to working with us to ensure the workers at Hanford are receiving the proper training and equipment and that they are not exposed to chemical vapors?

Answer: I am committed to cleaning up the Hanford site and will make it a priority if confirmed. Protecting workers and the surrounding communities is of paramount importance. I look forward to getting up to speed on these issues and working with the State of Washington, its Congressional delegation, and other relevant stakeholders.

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Question 14: The Hanford facility in the state of Washington pioneered the plutonium extraction process and produced plutonium in support of our national defense for more than 40 years. The site now represents the largest cleanup operation in the United States and, arguably, the most technically challenging on the planet.

Each new Administration comes in and thinks they can cut corners at Hanford and the other nuclear weapons complex sites. But it never works. My constituents and I -- and the State of Washington -- need your word that you will support sufficient funding levels for the Hanford cleanup, including the completion of the Waste Treatment and Immobilization Plant.

- Do you understand the moral and legal obligations as well as the urgency for the Department of Energy to properly fund and proceed with the cleanup effort at the Hanford site, including construction of the Waste Treatment Plant?

Answer: I take the Department's moral obligations and regulatory commitments seriously. I understand that we are actively working to meet our cleanup commitments while continuing key risk reduction and remediation activities at Hanford.

- Will you commit to working with the State of Washington, to uphold the Federal government's commitments pursuant to the Tri-Party Agreement?

Answer: If confirmed, I will work with you, the State of Washington and others to ensure we are making sustainable, risk-informed, and fiscally wise decisions regarding our Environmental Management obligations at Hanford.

- Will you ensure that you will impress upon the Administration that any changes in the Department's approach must include input from the state of Washington before moving forward. This is critical to avoid costly litigation that will only hamper progress. You must be aware of how sensitive of an issue this is to my constituents and how hard we are willing to fight any decisions that we believe will harm the environment or potentially the public. Do I have your word you will work with the Washington delegation and state of Washington on the Hanford cleanup?

Answer: Yes

Question 15: During Secretary Perry's confirmation process, he said: "the Department can be a great resource in cooperating with the private sector to spur innovation, particularly by investing in cutting-edge research." However, the President's budget proposal jeopardizes the very science and technology programs that Secretary Perry said he values, which undermines U.S. energy

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leadership and kills American jobs. The President has proposed to dramatically slash funding for and, in some cases, eliminate several important DOE programs.

The Department of Energy is a science and technology leader, with an unrivaled network of national laboratories, accelerating innovation in energy, manufacturing, and nuclear security. This budget will lose 17,000 scientists jobs from our national labs, universities, research institutions and businesses across the country.

- The budget proposes to eliminate ARPA-E, which advances high-potential, high-impact energy technologies that are too early for private-sector investment. Do you support eliminating ARPA-E?

Answer: I support the President's budget. If I am confirmed, I look forward to finding alternative solutions to advance these goals.

- The budget proposes to eliminate the Weatherization Assistance Program and State Energy Program, which provide critical technical assistance and state-controlled competitive grant funding to all 50 states to support state- and county-level energy projects. Do you support eliminating the Weatherization Assistance Program and State Energy Program?

Answer: I support the President's budget and, if confirmed, I look forward to finding alternative solutions to advance these goals.

- The budget proposal includes draconian cuts to the Office of Energy Efficiency and Renewable Energy, the Office of Electricity Delivery and Energy Reliability, and other applied energy programs. These programs invest in all stages of innovation across a diverse portfolio of energy technologies to enhance economic competitiveness and secure America's long-term energy security. Do you agree with these cuts? Do you believe there is a Federal role in investing in R&D in these areas?

Answer: I support the President's budget. I believe there can be a role in spending taxpayer dollars on R&D.

- The budget proposes to cut 17 percent of the Office of Science, which is the largest federal sponsor of basic research in the physical sciences. Do you agree that Federal investments in basic research are critical for maintaining U.S. leadership in science and technology and creating future jobs?

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Answer: I support the President's budget and know that basic research will continue under it to maintain our leadership. I am committed to both investing in energy innovation and using taxpayer dollars responsibly. If I am confirmed, I will explore ways to make technology and scientific development at the Department and the labs available to interested parties. I also believe in engaging with the private sector. While being careful not to duplicate private sector efforts, the Department can be a great resource in cooperating with the private sector to spur innovation, particularly by investing in cutting-edge research.

Question 16: Cybersecurity vulnerabilities in our nation's energy infrastructure pose grave national security and economic risks to the country. The Department of Homeland Security reported that 56% of cyber incidents against critical infrastructure in 2013 were directed at energy infrastructure. This number has since decreased: in 2016 it was down to 20%, but it is still too high. Although we have mandatory cybersecurity standards for electric utilities, natural gas pipelines are subject to merely voluntary guidelines issued by the Transportation Security Administration (TSA).

- DOE's most recent Quadrennial Energy Review suggested that DOE should assess whether any additional or mandatory cybersecurity guidelines are necessary for natural gas pipelines given the increased dependence between the electric and natural gas sectors. Do you agree?

Answer: Cybersecurity of the networks on which we rely and the threats to our critical infrastructure are evolving at a very rapid pace. Flexibility is most important to stay ahead of tomorrow's threats rather than merely addressing yesterday's. We can achieve this by partnering with infrastructure owners and enriching cross-sector collaboration and preparedness efforts.

Question 17: The President's budget proposes to auction-off to the highest bidder the Bonneville Power Administration's transmission facilities and the transmission assets owned by the other Federal power marketing administrations (PMAs).

Mr. Brouillette, you previously served at the Department of Energy and were around this town for a long time. I am certain that you are aware that Presidents from both parties have over the years proposed to sell-off the PMAs and on each occasion, Congress – on a bipartisan basis – said absolutely not!

The President's proposal could allow private companies to substantially raise transmission rates which will raise the price of power for consumers in more than 30 states.

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- Please tell me the Department isn't seriously going to pursue this proposal to auction off the PMA transmission lines, including those owned by the Bonneville Power Administration?

Answer: Congress and the President will arrive at a budget agreement, as they have in the past, and I will work to ensure that the Bonneville Power Administration's customers receive dependable service at a reasonable price.

Question 18: In 2015 a Blue Ribbon Commission referred to the National Laboratories as a – *“place where sustained, long-term, complex research and development programs can be managed and executed across a range of basic and applied research areas”*.

Our labs and DOE work across the R&D spectrum, from basic to applied research and including demonstration of technologies before handing-off their work to industry for commercialization. That's how our innovation machine works.

Based on Tuesday's proposed budget, I can only assume the Trump Administration has misunderstood the role of DOE and the Labs to be basic research alone. If not corrected, I believe this will cripple the innovation pipeline in this country that we have worked so hard to build, with significant impacts to American competitiveness and economic strength.

- Can you please explain what you understand to be the innovation pipeline in this country and what role the National Labs play in basic and applied research as well as the demonstration of the feasibility of technologies?

Answer: If confirmed, I commit to working to increase the effectiveness of taxpayer dollars spent by the Department for the greatest benefit and opportunities for innovation. I strongly believe that the scientific research that is conducted and funded by the Department is absolutely critical. Because the national labs conduct the best research in the world, I believe it is necessary to provide a pathway and an opportunity for that research and technology to reach the market, which will generate tremendous economic opportunities.

Question 19: Last month, Secretary Perry sent a memo to his Chief of Staff asking that the Department prepare a study examine the state of wholesale electricity markets, especially why coal and nuclear plants are having a hard time competing with natural gas and renewable resources. The Secretary's memo also hinted that state and federal renewable energy incentives are to blame.

The Secretary followed this up a few days later with a speech in New York during which he suggested that the Trump Administration may try to preempt state programs, such as renewable

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energy standards. It does not take a rocket scientist to know that it is low natural gas prices, not renewable energy, that is making coal and nuclear power uncompetitive.

But it is also troubling that the Administration appears to be suggesting that adding more renewable energy threatens grid reliability especially when our national labs have repeatedly found this is not true. It is even crazier that Secretary Perry is making these false statements since Texas has more wind power than any other state.

- Are you aware that the National Renewable Energy Laboratory (NREL) has found that the eastern grid and the western grid could each reliably accommodate 30 percent renewable energy rates without and changes and that a third NREL study concluded that renewable energy will be able to reliably generate 80% of U.S. power needs by 2050 if we invest in increased grid flexibility?

Answer: If confirmed, I look forward to reviewing these studies, alongside the study commissioned by the Secretary, and engaging with you and your staff.

- Do I have your commitment that the Department will not attempt to preempt state renewable energy programs, such as renewable portfolio standards, in an attempt to bolster less competitive sources of energy, such as coal?

Answer: I believe state governments should be able to exercise their autonomy to the fullest extent possible under our federal system, as prescribed by the Constitution.

Question 20: I am deeply troubled by continuous reports that DOE has delayed awarding funds and, in some cases, is refusing to release funds altogether for various activities for which Congress has already provided appropriations in order to ensure that these activities are consistent with President Trump's priorities.

It is unlawful for the President and DOE to ignore statutory requirements or funding direction provided by appropriations legislation already enacted by Congress. Although DOE last week did finally release funds for three ARPA-E projects, I am told that this issue has not been resolved.

- Will you commit that DOE will follow the law to fund projects as directed by Congressional intent and appropriations, notwithstanding the policy priorities included in the Administration's budget proposal?

Answer: If confirmed, I will follow the law.

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- When you arrive at DOE, will you investigate these issues and resolve them immediately?

Answer: If confirmed, I will look into these matters you have raised. I will work to ensure that all statutory requirements related to appropriations legislation are followed and that the American people receive the best value for their tax dollars.

Question 21: If confirmed, you will serve as the Chair of the Department's Credit Review Board, which reviews loan applications and recommends to the Secretary whether to issue a loan guarantees under the Title XVII program. There are a number of current DOE loan applicants that are very far along in the application process but now face uncertainty given the President's budget proposal.

- Will you commit to allowing existing DOE loan applicants the opportunity to complete the loan approval process, if they meet the requirements of the Title XVII program?

Answer: If confirmed, I commit to receiving full briefings on this program.

- Existing loan applicants have paid hundreds of thousands of dollars in application fees to DOE and spent months, if not years, going through the loan process under the expectation that DOE would honor their applications. How will you handle existing DOE loan applicants given the President's budget proposal?

Answer: If confirmed, I commit to receiving full briefings on this program.

- According to DOE's numbers, the loan programs have helped create or save more than 56,000 jobs. Unfortunately, the President's budget proposes eliminating these programs. I know of 2 potential projects that would support over 2,000 jobs. I am concerned that these job losses were not considered when this budget proposal was put together. Frankly, this seems to run contrary to the President's stated objectives to support economic growth and American jobs. Can you work with us to make sure these real job impacts get their due consideration?

Answer: Yes

Question 22: The United States has enjoyed a formal energy relationship with Israel since 2007, rooted in a joint research and development program to allow U.S. and Israel scientists to partner in the creation of new energy technologies. This Committee has prioritized the expansion of this relationship, supporting funding for the program and looking to expand the parameters of that partnership.

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In 2014 Congress passed the U.S.-Israel Strategic Partnership Act, which included a significant energy title. The bill encourages enhanced research and development, elevated dialogue opportunities, collaboration between U.S. national labs and Israeli research institutes, and the creation of a new platform – a U.S.-Israel center on energy and water to link our governments, academia to further joint research and development and technology transfer.

- How do you view the U.S.-Israel energy relationship as it stands today and what opportunities do you see for growth?

Answer: DOE values our long-standing partnership with Israel. I understand that Israel and the United States have made great progress in expanding our bilateral strategic economic relationship. But, I believe there is more we can do to expand our energy cooperation, both bilaterally and multilaterally. Collaboration in the energy-water nexus, on desalination in particular, and on cybersecurity, are potential areas of collaboration that could help achieve U.S. domestic energy priorities.

- Do you share my belief that enhanced cooperation in water management is particularly pressing, given the state of much of the American west?

Answer: I agree. Present day water and energy systems are interdependent and it is important to engage on the energy-water nexus.

- If confirmed, how would you work toward the implementation of the US-Israel Center on Energy and Water?

Answer: DOE has a robust collaboration with Israel. I believe both the U.S. and Israel could benefit from expanded collaboration on energy and water. If Congress provides the resources, I'd be happy to work toward implementation of the U.S-Israel Center on Energy and Water.

Question from Senator John Barrasso

Question: On May 18, 2017 the Wall Street Journal reported that PAO Rosneft, the state-owned Russian oil company, may be in a position to take over the U.S. energy assets of Citgo if Citgo's parent company defaults on its debt. Citgo's energy assets in the U.S. include oil refineries, pipelines, and numerous petroleum platforms.

Foreign investment in the U.S., especially by an adversary like Russia, has national security implications. The Committee on Foreign Investment in the United States (CFIUS) is charged with reviewing transactions that could result in control of a U.S. business by a foreign entity. CFIUS is authorized to block transactions or impose conditions on a transaction in order to

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mitigate any threat to national security. The Secretary of Energy, and by delegation the Deputy Secretary, is a member of CFIUS.

What steps will you take to ensure that the Russia-Citgo deal does not pose any threat to national security?

Answer: CFIUS, as a matter of policy and under its regulations applicable to DOE- to protect the confidentiality of parties that may be before the Committee- does not comment on subject cases that may or may not be actively before the Committee; this includes not commenting on matters that appear in the media and that may or may not be before the Committee. However, I can assure you that the Department takes its responsibilities as full time members of CFIUS very seriously. If confirmed, I commit to working closely with you on this matter.

Questions from Senator Ron Wyden

Question 1: Mr. Brouillette, as we discussed in my office, I'm seriously concerned about the administration's budget proposal to privatize the transmission assets of the Bonneville Power Administration. This amounts to highway robbery in the Northwest. Oregon families' dollars -- especially the communities in rural Oregon, who most rely on the Bonneville system -- are already stretched too thin without the administration trying to raise their monthly utility bills. Other administrations have tried this before, and I fought it. I will oppose this attempt as well. When we met in my office, I asked if you would commit to opposing the sale or privatization of Bonneville. As you may know, this was the same commitment that Energy Secretaries Abraham and Bodman gave to me during their nomination hearings when a similar privatization gimmick was proposed by the Bush Administration.

So let me ask you, for the record, will you make the same commitment that Secretaries Abraham and Bodman made to oppose selling off or privatizing Bonneville?

Answer: I recognize the importance of Bonneville to the citizens of the Northwest. Congress and the President will arrive at a budget agreement, as they have in the past, and I will work to execute that agreement to the letter. I will also work to ensure BPA customers receive dependable service at a reasonable price.

Question 2: The 17 DOE laboratories make up a federal research powerhouse, providing the United States with the best in energy technology innovation and scientific research. Would you agree that the national labs, like the National Energy Technology Lab facility located in Albany, Oregon, represent crucial one-of-a-kind assets to this country, which should be maintained and invested in? And will you commit to maintaining the existing network of labs?

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Answer: I agree that our national laboratories are a critical part of the DOE enterprise and a national treasure. Our national laboratories are the crown jewels of the nation and I plan to support and advocate for their work. I support the President's budget and, if confirmed, I plan to visit as many national labs as possible and learn from our outstanding men and women who work there.

Question 3: Mr. Brouillette, the Pacific Northwest has been a dumping ground for high-level, radioactive nuclear waste going back to the Manhattan Project. The Federal Government has an obligation to clean up this waste, but the Department of Energy, which is in charge of the effort, has spent tens of billions of dollars over 3 decades without processing a single gallon of the waste. This is a problem that both Democratic and Republican Administrations have failed to fix. What are you going to do to turn things around at Hanford?

Answer: I fully understand the magnitude and importance of the Environmental Management mission in this country. If I am confirmed, I very much look forward to visiting sites like Hanford in Washington State that directly contributed to our nation's victories and national security. If confirmed, I will work with you to ensure we are moving this important mission forward while making sustainable, risk-informed, and fiscally wise decisions in the future.

Question 4: Senator Grassley and I head up a bi-partisan caucus here in the Senate to try to protect whistleblowers. As you may know, whistleblowers have been mistreated at Hanford and across the Department--with multiple examples of retaliation and intimidation. As Deputy Secretary, what are you going to do to change the culture at DOE so that employees can come forward and tell you, and Congress, when things are going off the rails without losing their jobs?

Answer: When there are issues, I encourage people to come forward. If confirmed, I will look into current protocols in place, including the new whistleblower protection structure. It is my intention to emphasize the processes under that structure and to protect the people who take pride in looking after the good work of the Department of Energy.

Question 5: U.S. government clean energy research and development (R&D) is at risk due to the administration's proposed FY 2018 budget cuts at the Department of Energy (DOE). Around 3.3 million Americans are already employed in the clean energy sector, and job growth has been experiencing record highs. And yet there is no guarantee that the United States will retain a leadership position on clean energy. If DOE R&D programs are weakened, it's quite possible that China or another growing economy will fill our leadership vacuum. Consider that China, who is hosting the Clean Energy Ministerial and Mission Innovation meetings this year, is already poised to take the lead, with the second largest Mission Innovation pledge after the United States. What, specifically, would you do at the program level within DOE to ensure continued U.S. leadership on clean energy technology?

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Answer: I understand that Secretary Perry will be attending the Clean Energy Ministerial and Mission Innovation meetings in June. If confirmed, I look forward to discussing this topic with Secretary Perry to ensure the U.S. remains committed to these overarching goals.

Question 6: Will you commit to upholding full U.S. participation in the Mission Innovation (MI) initiative, including by keeping the pledge to double U.S. clean energy investment, by partnering with the private sector to deploy game-changing technologies, and by engaging actively in the MI steering committee and sub-groups—beginning with attending the Clean Energy Ministerial (CEM) and MI meetings next month in Beijing?

Answer: I understand that Secretary Perry will be attending the Clean Energy Ministerial and Mission Innovation meeting in June. If confirmed, I look forward to discussing this topic with Secretary Perry to ensure the U.S. remains committed to these overarching goals.

Question 7: Mr. Brouillette, it is important for DOE to execute programs and deploy funds previously allocated and obligated. It has been disheartening to hear of DOE delaying expenditures of funds with little to no justification. Can you commit today to ensuring that DOE follows through on its funding commitments for the good of the U.S. energy sector without undue partisan considerations?

Answer: I understand that a process is in place to provide an equitable review of all applications for funding assistance. If I am confirmed, I will work to ensure that all statutory requirements related to appropriations legislation will continue to be followed and that taxpayer dollars are allocated in a manner that provides the best value to the American people.

Question 8: Mr. Brouillette, energy storage is one of the most rapidly growing energy technologies out there, and it can provide multiple benefits to the grid, including enhanced grid reliability. And yet, many energy storage technologies are still in their infancy, requiring further research and development, which historically requires a significant governmental role. Do you support increasing funding levels at the Department of Energy for energy storage research, development, and demonstration?

Answer: I have not been briefed on DOE's energy storage research and look forward to being briefed on this important issue if I am confirmed.

Question 9: I am aware of the study that Secretary Perry has called for on the relationship between renewable energy and coal and nuclear retirements. I am concerned by what appears to be an attack on renewables. Can you assure me that, if confirmed, you will continue to prioritize renewable energy research, development and deployment at the Department of Energy?

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Answer: I have not been fully briefed on the study you reference in your question. If confirmed, I will advocate for the programs of the Department.

Question 10: Will you commit to defending the Office of Energy Efficiency and Renewable Energy and Advanced Research Projects Agency-Energy (ARPA-e) in DOE's budget and operations?

Answer: I support the President's budget. Congress and the President will arrive at a budget agreement, as they have in the past, and if confirmed I will work to ensure that agreement. If confirmed I look forward to finding alternative solutions to advance these goals.

Question 11: I am currently thinking about the "next big things" in the energy and energy efficiency sectors. For instance, I am very curious about the potential to extract savings from the efficiencies generated when devices and buildings become connected and those connections optimized. This is commonly referred to as "systems efficiency" and it has applications in building energy codes, appliance and equipment standards, workforce development, and the various research activities underway at DOE. What do you think is the potential at DOE, across the federal government, and in states to capture these savings and deliver greater benefits to homeowners, consumers, and businesses? What are some barriers that we in Congress could consider removing to unlock even greater savings?

Answer: There is vast potential for improvement. If I am confirmed, I look forward to working with DOE staff and your staff to identify any barriers Congress could consider removing.

Question 12: Mr. Brouillette, given your experience, I am sure you recognize the importance of federal support of state efforts to help homeowners, consumers, and businesses lower their energy consumption. Yet the budget proposal released on Tuesday would cut funding by over two-thirds for the DOE office responsible for helping state and local governments adopt building energy codes and eliminate funding for state energy programs and weatherization for lower-income families. Oregon alone would stand to lose over \$500,000 for our state energy office and funding that helped improve the energy efficiency of over 1,700 homes. What will you do, if confirmed, to ensure these programs are funded and continue to generate savings and benefits?

Answer: I support the President's budget and, if confirmed, I look forward to finding alternative solutions to advance these goals. I will ensure that the will of Congress, as expressed through statute, is carried out.

Question 13: What role do you see the Trump administration's DOE should have in fighting climate change?

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Answer: A strong, vibrant economy is the best defense to a number of concerns, including climate change. I believe the climate is changing. Some of it is naturally occurring, but we are all living here so we must have some impact. If confirmed, I look forward to working with DOE laboratories to find balanced answers to this issue.

Question 14: What specifically would you do at the DOE to protect the electricity grid--and American citizens--from cyber-attack?

Answer: As the Sector-Specific Agency for the energy sector, DOE serves as the voice of the sector. If confirmed, I look forward to collaborating with the private sector to strengthen the security of the grid and protecting American citizens from a cyber-attack.

Question 15: Our troops are often reliant on dangerous fuel convoys to keep them operating. Do you think tightening vehicle efficiency standards and supporting the deployment of renewable energy technologies is worth supporting, to help minimize the risk to our troops?

Answer: I support giving the troops the tools they need to best carry out their mission and the focus is obviously on the safety and security of our troops.

Question 16: Mr. Brouillette, our electricity grid--once touted by the National Academy of Engineering as the single greatest engineering achievement of the twentieth century--is in need of serious help. Can you commit on working to modernize our electric grid? If so, what steps will you take to advance grid modernization?

Answer: Yes, if I am confirmed, I commit to working with other agencies of government and with the Congress to modernize our electric grid. The Secretary has commissioned an agency-wide study on the electric grid, which is due shortly. If confirmed, I look forward to reviewing this study and engaging with you and your staff.

Question 17: Mr. Brouillette, I'm sure you realize that energy storage and an increasing number of aggregated distributed energy resources (DERs) can provide a range of valuable services to the electricity grid, such as frequency regulation and capacity. In many parts of the country there are no means for remunerating these technologies for the services that they provide, which creates a market distortion against these technologies. What will you do at the Department of Energy, and in your relationship with the Federal Energy Regulatory Commission, to ensure that the full suite of technologies are identified for the value-streams they provide to the grid? For example, would your DOE continue working to better define the value different services the grid can provide?

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Answer: The Secretary has commissioned an agency-wide study on the electric grid, which is due shortly. If confirmed, I look forward to reviewing this study and engaging with you and your staff.

Question 18: Considering the integrity and security of the nation's electricity system, as well as the efficiency with which smart-grid enabled appliances and equipment are deployed in the market, do you believe it would be useful to promote open interoperability standards for smart-grid enabled technology? And if so, how would you recommend doing so?

Answer: It is my understanding the Department has funded a wide array of advanced grid R&D technologies and, if confirmed, I look forward to being briefed further.

Question 19: Utility data access is important for many businesses capable of providing services to consumers, such as enabling more accurate modeling and forecasting of locational electricity demand needs. What is your view on utility data access, and how would you work to make sure both sides of this debate get a fair shake?

Answer: I am not familiar with the issue but, if confirmed, I look forward to learning more and being briefed on it.

Question 20: Electric vehicles (EVs) have come a long way. The problem is that we're talking about two very separate, siloed industries with very few interconnections. With more EV-grid integration, it's possible for EVs to even provide valuable services back to the grid when needed. What can we expect from you in supporting further electric vehicle-grid integration, and in facilitating dialogue between US automakers and electricity companies?

Answer: I believe that the key to resolving such issues is through dialogue. If I am confirmed, I hope to be able to facilitate such a dialogue between the automakers and electricity companies.

Questions from Senator Bernard Sanders

Lessons from past positions

Question 1: Based on your experiences as an executive at Ford, what can DOE do to support the production and use of electric vehicles?

Answer: From my time at Ford, I learned that the private sector must make cars and trucks that the American public demand. To support the production and use of electric vehicles, we need to make sure that electric vehicles are at the right price and have the features that work for American families.

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Question 2: At USAA, you served military members and their families. Military members at lower ranks can face considerable financial challenges. A number of federal energy programs—such as the Weatherization Assistance and Low Income Home Energy Assistance programs—benefit low-income Americans. What lessons did you learn from working with low-income families at USAA that you believe are applicable to DOE?

Answer: One of the important lessons I learned is the value of the private sector in helping low-income Americans. A strong and vibrant economy is the best defense to many problems. It is important that we maintain a level of economic growth that will mitigate the need for federal assistance.

Ethics

Question 3: A common critique of Energy Secretary Perry's administration while he was governor of Texas was that his largest campaign donors received benefits in the form of preferential access, contracts, appointments, and even multi-million dollar tax cuts for their businesses. You have also substantially contributed to Secretary Perry's gubernatorial and presidential campaigns:

- Donations of \$5,000 to Secretary Perry's 2012 presidential campaign, and in 2006 and 2009 nearly \$2,000 for his gubernatorial campaigns.
- Collection of \$77,000 from other donors as a "bundler" for Perry's 2012 presidential campaign.
- Contributions of almost \$49,000 to USAA-PAC. USAA-PAC donated \$210,000 to Perry's gubernatorial campaigns and donated \$64,500 to RickPerry.org toward his 2012 presidential campaign.

The Texas "pay to play" political culture raised significant concerns during Secretary Perry's nomination. These donations suggest loyalty to Secretary Perry. If confirmed, how will you ensure that the Texas "pay to play" political culture does not affect DOE decisions and management?

Answer: I was a supporter of then Governor Perry and am glad to have had the opportunity to help elect him at the time. If I am confirmed, I will work with the employees at the Department of Energy to promote the best possible solutions facing the Department because that is what the American people deserve and expect.

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Briefings

Question 4: If confirmed, do you commit to regular scientific briefings on the subjects of nuclear waste and nuclear security?

Answer: If confirmed, I commit to receiving regular briefings on all important subjects in my purview, including nuclear waste and nuclear security.

Question 5: If confirmed, will you encourage the President to receive regular briefings on nuclear waste and national security?

Answer: I understand that the President already receives regular briefings on national security matters. If confirmed, I will advocate for the Department in interagency deliberations.

Climate change

Question 6: President Trump has suggested in the past that climate change is a hoax. Is the President correct? Is climate change a hoax?

Answer: I believe the climate is changing. We're all living here, so we must have some impact. I agree with Secretary Perry that the question is how we address it in a thoughtful way that doesn't compromise economic growth, the affordability of energy, or American jobs.

Question 7: Do you agree with the vast majority of scientists that climate change is real, it is caused by human activity, and that we must aggressively transition away from fossil fuels toward energy efficiency and sustainable energy like wind, solar, and geothermal?

Answer: I believe that the climate changes and I believe that the cost of the benefits of climate-related policies need to make sense for American families.

Question 8: Do you agree with the vast majority of scientists that the combustion of fossil fuels contributes to climate change?

Answer: As previously stated, I believe the climate is changing. Some of it is naturally occurring, but we are all living here so we must have some impact. If confirmed, I look forward to getting a better understanding of the dynamics.

Question 9: Do you believe that DOE has a role in reducing the extraction and use of fossil fuels?

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Answer: According to the DOE Organization Act, I believe the Department's roles were created by Congress and can be updated by Congress. For example, Congress has stated that "a strong national energy program is needed to meet the present and future energy needs of the Nation consistent with overall national economic, environmental and social goals." I believe in those goals, and, if confirmed, I will be a public servant and my job will be to follow the law.

Question 10: How important do you think it is to reduce the amount of fossil fuels that we use to support our energy needs?

Answer: As noted in the previous question, and as expressed by Congress, I believe "a strong national energy program is needed to meet the present and future energy needs of the Nation consistent with overall national economic, environmental and social goals." I believe a strong energy program can include natural gas, oil, and coal.

Question 11: What do you believe are the best current and prospective DOE policies to effectively reduce carbon pollution from energy development and use?

Answer: I look forward to being briefed by DOE staff on DOE's current policies in this area.

Question 12: What role should the United States play in the Paris climate agreement?

Answer: As the President has said that the Paris Agreement is under review and, if confirmed, I will carry out the President's decision.

Question 13: If confirmed, how will you work to address climate change?

Answer: As previously stated, I believe the climate is changing. Some of it is naturally occurring, but we are all living here so we must have some impact. If confirmed, I look forward to getting a better understanding of the dynamics.

Energy future

Question 14: What technologies do you think are most important for the United States to invest in to meet our long-term energy needs?

Answer: The 17 national labs are the crown jewels of the nation and if I am confirmed, I look forward to exploring ways in which to make technology and scientific development available to interested parties. I believe in engaging with the private sector. While being careful not to duplicate private sector efforts, the Department can be a great resource in cooperation with the private sector to spur innovation, particularly by investing in cutting-edge research.

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I also believe that taxpayer dollars should be spent on things that make sense.

Question 15: What do you believe is the role of renewable energy in our energy future?

Answer: I support the President's all of the above energy strategy, and renewable energy plays an important role in that strategy.

Question 16: What role should nuclear power play in our energy future?

Answer: I support the President's all of the above energy strategy. Nuclear power will remain an important component of our energy mix providing inexpensive and clean baseload power.

Question 17: What role do you think DOE should have in the future extraction and use of fossil fuels?

Answer: I envision the Department continuing to develop technologies that produce energy more efficiently and in an environmentally friendly way. I believe, as Congress has said in the Department of Energy Organization Act, that "a strong national energy program is needed to meet the present and future energy needs of the Nation consistent with overall national economic, environmental and social goals." I believe that this strong national energy program can include natural gas, oil, and coal.

Question 18: What are the geopolitical consequences of U.S. fossil fuel consumption on our national security?

Answer: I believe the State or Defense Departments may be more qualified to answer this question.

Question 19: What do you believe the role of tax incentives should be in the future of American energy? If confirmed, will you commit to supporting tax credits for renewable resources like wind, solar, and geothermal?

Answer: If confirmed, my role at DOE will be to execute the law. To my knowledge, DOE does not have statutory or regulatory authority over these tax credits.

Question 20: What do you think our energy sources will be at the end of this century?

Answer: I cannot predict what energy sources we may be using at the end of the century. I know our national labs are on the cutting edge of many new technologies and I am confident they will play a significant role in developing future energy sources.

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Question 21: Oil, gas, and coal are global commodities subject to market supply and demand. Even if the United States completely met its own demand for fossil fuel energy—as it is close to achieving—consumers would remain subject to significant variability in fuel prices. For solar and wind energy, however, the electricity produced by these sources of energy remains in the United States. Would it not make more sense to prioritize solar and wind-generated electricity that can't be exported from the United States and is invulnerable to global pricing swings?

Answer: I believe it makes the most sense to consider the risks, the costs, and the benefits of a wide range of energy sources. I would also prioritize reliability and affordability.

Question 22: The availability of cheap natural gas through the process commonly known as fracking has drastically changed the economics of electricity generation. Coal-fired and nuclear power plants are closing because they are unable to economically compete with high-efficiency gas-fired power plants. What DOE efforts or incentives would you consider appropriate to assure that the nation's capacity to generate electricity through means other than uneconomic coal, nuclear and natural gas-fired power stations, while assuring stable electricity prices?

Answer: The Secretary has commissioned an agency-wide study on the electric grid, which is due shortly. If confirmed, I look forward to reviewing this study and engaging with you and your staff.

Clean coal

Question 23: The Kemper “clean” coal project received some \$500 million in DOE grants by DOE's Office of Fossil Energy. The most expensive power plant per megawatt ever built in the United States doesn't work, and costs five times its initial budget of \$1.2 billion. Yet DOE continues to support this boondoggle that saddles local utility customers with unsustainable rate increases. This is a failed project many times the size of the much-criticized Solyndra. If confirmed, will you commit to review the Kemper project and DOE's costly investment of taxpayer money?

Answer: Yes, if confirmed, I will undertake a review of the previous administration's Kemper plan and the Department's expenditures.

Clean energy

Question 24: Vermont is a leader in clean energy innovation and jobs, from companies that assemble solar arrays to firms that specialize in making homes and businesses more energy-efficient. The State of Vermont has set a goal of 90 percent clean energy by 2050. How will you support Vermont's efforts?

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Answer: I have not been fully briefed on the tools available to help Vermont move forward with their goals. If confirmed, I look forward to learning more about how the Department can help support Vermont's efforts.

Question 25: In Vermont, Act 56 requires that Vermont utilities assist customers with adopting new technologies that reduce carbon emissions. If confirmed, how will you support Vermont's efforts to protect low-income communities?

Answer: I have not been fully briefed on the tools available to help Vermont move forward with their goals. If confirmed, I look forward to learning more about how the Department can help support Vermont's efforts.

Question 26: If confirmed, what specific actions will you take as deputy secretary of DOE to expand access to equitable clean energy and to clean energy jobs in low-income communities, communities of color, and tribal communities?

Answer: A growing economy helps all Americans. If confirmed, I will focus on making sure energy is affordable as a key strategy to expanding an inclusive economy and helping all Americans.

Question 27: Electricity costs represent a disproportionate share of the household spending of low-income households, as pointed out by DOE's Quadrennial Energy Review. What specific actions will you take to ensure that DOE programs, technical assistance, and regulations provide low-income households with access to affordable clean energy so that they do not bear a disproportionate burden of investments in the power system?

Answer: Affordable electricity is important for all of America, including tribal communities, communities of color, and low-income communities. Making sure that communities have access to affordable energy of all types is the best way to solve the problem. If confirmed, I will look into making sure our electricity grid is not only reliable but also has affordable electricity for all.

Solar and wind

Question 28: The DOE SunShot Initiative is a hugely successful research and development program that has made solar more affordable. The program is 70% of the way toward achieving its goal of making solar fully cost-competitive with traditional energy sources by 2020. It has helped contribute to a 22% increase in employment year over year totaling more than 260,000 solar industry jobs as of 2016. Jobs in the solar industry are growing at a rate 12 times faster than the overall economy. If you are confirmed, will you commit to finishing what SunShot started?

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Answer: If confirmed, I commit to learning more about the solar program's goals and progress. I further commit to faithfully execute the law.

Question 29: China leads the world in solar photovoltaic manufacturing. The largest markets for solar and wind are also in China. Do you believe the US is falling behind in clean energy? Will competing with China to develop renewable technology be a priority if you are confirmed?

Answer: No, I do not believe the U.S. is falling behind in any energy technology. Competing with China to develop not only renewable technology, but all kinds of technology, will be a priority if I am confirmed. I should note that one of the things that makes American great is that we have a vibrant private sector that is actively competing with China. The U.S. has led the world and will continue to lead the world on clean energy technologies.

Question 30: President Trump has tweeted that "[n]ot only are wind farms disgusting looking, but even worse they are bad for people's health." There are more than 10,000 wind turbines installed across the state of Texas. Do you agree with the President's characterization of the wind industry as "bad for people's health"?

Answer: I share the President's commitment to an "all of the above" energy strategy. There are positives and negatives to all sources of energy, including some downsides to wind turbines. If confirmed, I will work to help reduce the downsides of all sources of energy.

Nuclear fuel and power

Question 31: In using railroads to transport Spent Nuclear Fuel, how would you propose to balance state and local government needs for assuring public safety against the US railroad industry's rights to select transportation routes and manage commodity (i.e. the spent fuel) movement as guaranteed by "Common Carrier" law?

Answer: If confirmed, I look forward to receiving a briefing on the transport of our nation's spent nuclear fuel. I believe these objectives can and should be achieved in a balanced way that respects our federal system and the rule of law.

Question 32: If confirmed, will you commit to considering altering the pace and scope of nuclear modernization plans if significant taxpayer savings can be achieved while meeting national security requirements?

Answer: It is my understanding that the Nuclear Posture Review is already underway. If confirmed, I commit to receiving briefings on this subject.

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Nuclear weapons

Question 33: If you are confirmed, will you undertake a comprehensive review of the need and affordability of current nuclear weapons modernization plans?

Answer: It is my understanding that the Nuclear Posture Review is already underway. If confirmed, I commit to receiving briefings on this subject.

Question 34: What would be the strategic consequences of countries such as Russia, China, India, or Pakistan resuming nuclear tests? Will you support international norms against nuclear testing?

Answer: I support the President's FY 2018 Budget Request, which would fund international monitoring and verification capabilities and continue our partnership with the International Atomic Energy Agency.

Question 35: It has been more than 15 years since the Senate last considered the Comprehensive Nuclear-Test-Ban Treaty (CTBT). Since that time, there have been two National Academy of Sciences reports and several National Intelligence Estimates that have documented the remarkable progress made in the United States to sustain the nuclear weapons arsenal without testing and the United States and international community's ability to monitor and verify compliance under the treaty.

If confirmed, will you commit to reviewing the large body of new evidence in support of the CTBT that has emerged since the Senate last considered the treaty in 1999?

Answer: If confirmed, I commit to receiving briefings on this subject.

Question 36: If confirmed, will you commit to promoting the ratification of the Comprehensive Nuclear-Test-Ban Treaty?

Answer: I believe your question would be best addressed to The Department of State.

Question 37: Would you support developing and implementing an international detection system, where costs are shared by a coalition of governments, which would allow us to detect a nuclear explosion and determine if a country was in compliance with the Nuclear Nonproliferation Treaty? If no, why not?

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Answer: I support the President's FY 2018 Budget Request, which would fund international monitoring and verification capabilities and would continue to fund our partnership with the International Atomic Energy Agency.

Question 38: The National Nuclear Security Administration's science-based stockpile stewardship program has successfully maintained the nation's nuclear weapons deterrent for more than 20 years without underground nuclear testing. Our country's leading universities play an important role in this program. They not only train and educate the future workforce on science issues relevant to the stockpile, but they also build and operate world-class facilities and instrumentation to help resolve issues related to an aging stockpile. Do you support academic programs in support of the science-based stockpile stewardship program?

Answer: If confirmed, I will be proud to work alongside the highly skilled men and women of the National Nuclear Security Administration. I support the President's FY 2018 Budget Request, which would continue funding basic science related to stockpile stewardship and academic programs to train the next generation.

Question 39: The National Nuclear Security Administration project to build a plant to fabricate plutonium (MOX) fuel from excess United States weapons plutonium is decades behind schedule and is projected to cost \$50 billion or more. The plant is being built to comply with a U.S.-Russian agreement, but Russia has suspended implementation of its side of the compact. Do you agree that this wasteful project should be terminated and a cheaper and more efficient method for disposing of waste plutonium be developed instead?

Answer: I support the President's FY 2018 Budget Request, which proposes to terminate the project and pursue "dilute and dispose," an alternative strategy.

Question 40: If confirmed, will you support the DOE continuing to assist the International Atomic Energy Agency in its ongoing work ensuring Iranian compliance with the Joint Comprehensive Plan of Action?

Answer: Yes. I support the President's FY 2018 Budget Request, which would fund international monitoring and verification capabilities and continue our partnership with the International Atomic Energy Agency. The Department's ongoing work in monitoring Iranian compliance with the JCPOA is vital to our national security.

Tribal issues

Question 41: Please describe the relationship between the federal government and American Indian tribes as it relates to sovereignty.

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Answer: American Indian tribes retain a considerable quantum of sovereignty. The Department of Energy recognizes this sovereignty as a limitation on federal, State, and local jurisdiction, as well as the foundation for a trust-based obligation to protect tribal land and powers of self-government.

Question 42: What obligations do federal agencies have to formally consult with American Indian tribes?

Answer: The Department of Energy has implemented Executive Order 13175 and the 2009 Memorandum for Heads of Executive Departments and Agencies Regarding Tribal Consultation through DOE Order 144.1, which creates mechanisms to ensure that all DOE offices and components engage in outreach and consultation to ensure that tribal rights and interests are considered and protected in the development and execution of all DOE policies and programs.

Question 43: What procedures should be followed by the federal government regarding the permitting of infrastructure projects that could potentially impact American Indian tribes and their citizens?

Answer: If confirmed, I look forward to being briefed by the appropriate personnel on the intersection of American Indian and permitting issues.

Question 44: How do you interpret the United Nations Declaration on the Rights of Indigenous Peoples, especially as it relates to the obligations of the federal government?

Answer: The primary significance of the UN Declaration on the Rights of Indigenous Peoples is that it urges the U.S. to engage in meaningful consultation with tribes.

Question 45: What is the role of inter-agency cooperation on American Indian issues?

Answer: It is my understanding there is a Memorandum of Understanding between the Department of Energy and the Interior Department. If confirmed, I commit to being fully briefed on this matter.

Programmatic support

Question 46: What is your position on each of the following programs, and if confirmed, will you commit to continuing their funding?

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1. Photovoltaic Regional Test Centers
2. Nuclear Energy
3. Weatherization and Intergovernmental Programs
4. Solar Energy
5. Dedicated Funding for Advanced Heat Pump Deployment
6. Northern Border Regional Commission

Answer: If confirmed, I look forward to reviewing all programs and to working with Congress on the FY 2018 budget request to ensure the critical missions of the Department of Energy are accomplished.

Energy Information Agency

Question 47: One of the many DOE offices you will oversee is the Energy Information Agency (EIA), which provides critical data that industry relies on to make long-term decisions. For this reason, the integrity of EIA's data is critical. If confirmed, will you honor the independence of this data collection agency and maintain their funding?

Answer: Yes. The independence of EIA is fundamental to its mission.

The Holman Rule

Question 48: What is your position on the Holman Rule, which allows any member of Congress to propose amending an appropriations bill to single out a government employee or cut a specific program?

Answer: I have briefly read about the Holman rule, but cannot comment at this time. I am committed to the outstanding staff and work of the Department.

Question 49: If confirmed, will you support or oppose Congressional passage of an amendment under the Holman Rule that targets one of your employees?

Answer: If confirmed, I am committed to the outstanding staff and work of the Department and believe that personnel decisions are best made by the people closest to the employees.

Question 50: If confirmed, do you believe that you will be better able to recruit and retain top talent at DOE if Congress is able to individually target employees based on political criteria?

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Answer: If confirmed, I believe my background and experience can be useful in recruiting and retaining top talent. As mentioned above, I believe that personnel decisions are best made by the people closest to the employees.

Question 51: Do you support or oppose Congress targeting and altering the salaries of individuals at DOE?

Answer: I believe that personnel decisions are best made by the employing authority.

Question 52: How would you describe the division of responsibility and authority between Congress and DOE on agency personnel issues?

Answer: It is my understanding that the responsibilities and authorities are set forth in the Constitution, statutes, and judicial decisions. If confirmed, I will faithfully execute the laws.

Scientific integrity

Question 53: Are you familiar with the Department of Energy's scientific integrity policy? If so, what do you see as its strengths and weaknesses?

Answer: I have not had the chance to review the documents in full, but I support the goal of ensuring a culture of scientific integrity. Should I be confirmed, I look forward to being briefed on current laws and practices.

Question 54: Professional development is important to most federal employees. To stay current in their field of research and be most effective in serving the taxpayer, DOE scientists must be able to participate in scientific society meetings, where they learn about new research and develop new collaborations with academic and private sector scientists. Recently, the White House clarified guidance for federal agencies to ensure that federal scientists are able to travel to scientific meetings in a fiscally responsible way. What steps would you take to ensure that this balance is maintained?

Answer: I support our scientists being at the forefront of innovation in their respective fields. I look forward to being briefed on current laws and practices.

Question 55: Should DOE scientists be allowed to express their personal opinions about any issue as private citizens as long as they provide a disclaimer that they are speaking in a personal capacity and not for the department?

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Answer: I believe there are standards in place that allow for the free expression of belief so long as the employee does not appear to speak on behalf of the Department of Energy when expressing personal opinions.

Question 56: Should DOE scientists have the right of last review to ensure the accuracy of materials that rely on their scientific work or expertise—including scientific reports, executive summaries, Congressional testimony, press releases, and websites?

Answer: Should I be confirmed, I look forward to being briefed on current policies and practices.

Question 57: Are there any parts of the DOE website that you believe contain incorrect, incomplete, or erroneous information or descriptions of climate change science?

Answer: I have not reviewed the full website. But, I believe it is important to maintain accurate and helpful information for the benefit of the American people.

Question 58: Do you think that DOE collects sufficient data to address environmental and public health threats? If not, what additional data is worth collecting?

Answer: Should I be confirmed, I look forward to being briefed on data collection.

Question 59: Are you committed to ensuring that DOE data is proactively made available to the public, consistent with privacy and confidential business information laws?

Answer: While I have not had the occasion to review all the privacy and confidential business information laws, I believe the Department should follow the law.

Question 60: Will you ensure that all data and data interpretations that are currently on the DOE websites continue to be publicly available, and if they become out of date, are archived in an accessible manner?

Answer: I am not aware of current archival practices. If confirmed I will ensure the Department is compliant with the law.

Question 61: Do you believe that the Freedom of Information Act has an assumption of openness—that documents should be made available to the public unless there is a compelling need to withhold them?

Answer: Yes, the Freedom of Information Act has an assumption of openness.

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Question 62: The most robust scientific integrity policies allow government scientists to speak openly with the press and the public about scientific matters. Would you improve your agency's policies to make this explicit?

Answer: I have not had the chance to review the documents in full, but I support the goal of ensuring a culture of scientific integrity. Should I be confirmed, I look forward to being briefed on current laws and practices.

Question 63: Do you agree that only scientists and technical experts should edit scientific and technical content?

Answer: Should I be confirmed, I look forward to being briefed on current policies and practices.

Question 64: Do you think public affairs officers have a role in editing scientific or technical content? If so, why?

Answer: The job of public affairs officers in the Department of Energy, in general, is to make information understandable to non-scientific general audiences.

Questions from Senator Al Franken

Question 1: Earlier this week, President Trump released a budget that guts funding for research and development across the government. This is especially pronounced at the Department of Energy.

- a. I know that you did not help conceive these plans, but do they adhere to your vision for the department?
- b. Do you support the federal government funding applied research?
- c. Do you support the President's proposal to eliminate ARPA-E?
- d. Do you support the President's plan to eliminate the federal energy loan program?

Answer: I support the budget's broad goal of shifting the Department's focus to early-stage research and development at our national laboratories to more efficiently and cost effectively advance American dominance in scientific and energy research. Congress and the President will ultimately arrive at an agreement to fund the Department's programs, and I will faithfully implement that agreement.

Question 2: OMB Director Mulvaney made his views on climate research evident in describing the President's budget proposal: "Regarding the question as to climate change, I think the

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President was fairly straightforward — we're not spending money on that anymore; we consider that to be a waste of your money to go out and do that."

- a. Do you agree with Mr. Mulvaney?
- b. Do you agree with the overwhelming scientific consensus that we need to address human-caused climate change?

Answer: I believe the climate is changing. We're all living here, so we must have some impact. I agree with Secretary Perry that the question is how we address it in a thoughtful way that doesn't compromise economic growth, the affordability of energy, or American jobs.

Question 3: Last month, Secretary Perry ordered a 60-day review of U.S. electricity policy to determine whether coal and nuclear plants are being "unfairly" pushed off the grid. He suggested that renewable resources—like wind and solar—were threatening grid reliability and that because of that, we need to prop up coal and nuclear plants.

- a. Are you familiar with an extensive two year study, completed by the Department of Energy last year, which found that the U.S. energy grid could accommodate up to 80 percent wind and solar power with no loss of reliability?

Answer: No. If confirmed, I look forward to reviewing this study, alongside the study directed by the Secretary, and engaging with you and your staff.

- b. *E&E News* reports that the nation's top energy experts are notably not being consulted as part of the new "study." Does this concern you?

Answer: It is my understanding the 60 day study is using the research and institutional knowledge of the Department's foremost career and contractor employees across all relevant program offices and National Laboratories. If confirmed, I look forward to being fully briefed on this study and many others.

- c. Minnesota and other states have renewable portfolio standards that drive the transition to clean energy. Do you believe states should be able to implement these kinds of policies without federal interference?

Answer: I believe state governments should be able to exercise their autonomy to the fullest extent possible under our federal system, as prescribed by the Constitution.

Question 4: Because of its low prices, more and more Americans are using natural gas, both in homes and in industry. And the DOE Energy Information Administration projects that use of natural gas will continue to grow. At the same time, the federal government has already issued

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final authorizations for liquid natural gas export volumes of over 72 billion cubic feet per day—which is equal to about 96 percent of U.S. demand. Explain to me how increasing exports of domestic natural gas won't drive up the price Americans pay to power their factories and heat their homes.

Answer: I understand that DOE has produced a number of reports on LNG exports. If I am confirmed, I commit to being fully briefed on these reports.

Question from Senator Steve Daines

Question: In Montana, coal and hydropower provide much needed baseload power that keeps electricity affordable and reliable. As we look at growing global energy demand through 2040—especially with the planned coal and natural gas plants in China, Japan—America has an opportunity for global energy dominance through exports. At the same time, we also need to protect existing fleets to keep our grid secure and help spur innovation here at home. In your view, how important is protecting baseload energy to electric grid security and our national security?

Answer: Power generation fueled by natural gas, coal, hydropower, and nuclear energy is essential to our nation's economy and security, providing a continuous and reliable source of electricity. The Secretary has commissioned an agency-wide study on the electric grid, which is due shortly. If confirmed, I look forward to reviewing this study and engaging with you and your staff.

Questions from Senator Joe Manchin III

Question 1: West Virginia's existing installed capacity is 90% coal (12,584 MW). The remainder is natural gas, hydro, wind and a little bit of oil. Overall, in PJM, coal represents 34% of capacity and natural gas is slightly higher than that. The Energy Information Administration states that "West Virginia typically generates more electricity than it consumes. Although more than two-fifths of West Virginia households use electricity as their primary source for home heating, retail sales to all customers account for less than half of West Virginia's net electricity generation. As a result, West Virginia is a net supplier of electricity to the regional grid. West Virginia is a leader in the nation in net interstate sales of electricity."

Do you believe that the regional grid (PJM specifically) can continue to operate without the contributions of West Virginia's fleet of power plants?

Answer: West Virginia's power plants make essential contributions to the security of the regional grid.

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Question 2: Earlier this week, E&E news published an article regarding the cybersecurity challenges facing our natural gas infrastructure. They highlighted a five-year old attack on our nation's natural gas utilities which was perpetrated by Chinese hackers who were also members of that country's military. Gerry Cauley, President of the North American Electric Reliability Council (NERC) – a frequent witness before this committee stated that "Undercutting the gas supply is certainly a threat to the electric system." While NERC, utilities, and regional transmission operators (RTOs) like PJM are planning for multiple scenarios like extreme weather events (a repeat Polar Vortex for example), I'm also interested in your perspective on how FERC and DOE can further support natural gas utilities in their efforts to harden their systems not just against natural threats but against cyber threats.

Understanding that these energy stakeholders can't always pull back the curtain for us because of the threat of revealing too much to potential enemies, what more can DOE and FERC do to support natural gas pipeline operators in the face of these threats?

Answer: Additional efforts to bolster pipeline operators' cybersecurity efforts include closer alignment with state and regional energy assurance planning; stronger collaboration in industry, regional, and national exercises; enhancing information sharing through enabling technologies; and advocating that key leaders in the industry receive actionable classified threat intelligence when needed.

Question 3: West Virginia is hurting. The decline of the coal industry has been devastating. We are losing businesses and population. So, in addition to doing everything we can to stop the bleeding and help our people in the near-term, we are also looking for ways to revitalize our home state economy. One of the ideas that I am intrigued by and increasingly optimistic about is an opportunity that we have because of the wet gas in the Marcellus and Utica shale plays. We are working with the Mid-Atlantic Technology Research and Innovation Center (MATRIC) to help realize the potential of an Appalachian Storage Hub which could bring jobs to West Virginia. It would ensure we are maximizing the opportunities associated with our vast reserves of natural gas liquids (NGLs) such as ethane. According to MATRIC, about 20% of the value in the Marcellus Shale alone is ethane, propane and butane natural gas liquids. So, ideally, the cultivation of such a hub would attract manufacturing companies that need reliable affordable access to these feedstocks. With safety and the environment top of mind, I'd like to see the Storage Hub move forward and it seems to me that this type of effort is what the creators of the Title XVII loan program at the Department of Energy envisioned when the Energy Policy Act of 2005 was passed. The loan program would help provide access to low cost financial capital that would alleviate investor concerns regarding technology and market risks.

Putting aside that the President's budget proposes the elimination of the loan program, what is your perception of this program which has a 97% repayment rate?

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Answer: I support the President's budget. If confirmed, I look forward to finding alternative solutions to advance these goals.

Can you commit to work with me on how the Department of Energy can help the Appalachian Storage Hub?

Answer: Yes. Natural gas liquids are a part of the American energy renaissance, particularly in the Appalachian region, and if confirmed, I look forward to working with you and your staff. I am aware that this concept received bipartisan legislative support at the Committee in the last Congress, under Chairman Murkowski's leadership.

Question from Senator Cory Gardner

Question: Industry engagement is showing that grid modernization and the Energy Systems Integration Facility (ESIF) at the National Renewable Energy Laboratory are both critical to innovation. How would you advise Secretary Perry on where federal dollars should be spent within the Department's budget in order to best prepare the country for energy leadership and cyber readiness? Would it include grid modernization and ESIF?

Answer: I understand that ESIF is funded in the President's FY 2018 Budget request, including the initial phase to double the high performance computing capacity.

Questions from Senator Mazie Hirono

Question 1: Your written testimony makes not a single mention of climate change. Given the Department of Energy's National Laboratories provide world-class scientific and technological research and development capabilities, I found this omission concerning. I am interested in your thoughts on the threat climate change poses to our national security. In Hawaii, we are witnessing the direct impact on homes and businesses from rising sea levels and higher rates of coastal erosion that are attributable to climate change. This Memorial Day weekend, in fact, Hawaii is expected to experience severe flooding due to sea swells in the 8 to 12 foot range combined with astronomical King tides. The severity of the flooding will come at an economic cost to our communities.

- a) Do you believe that our climate is changing in ways that are presenting a danger to our communities and our way of life?

Answer: Quite simply, I believe the climate is changing. Some of it is naturally occurring, but we are all living here so we must have some impact. If confirmed, I look forward to getting a

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better understanding of the dynamics. Additionally, our national laboratories are the crown jewels of the nation and I plan to support and advocate for their work.

- b) Do you believe the Department of Energy and its National Laboratories have a role to play in discovering and deploying energy innovation solutions to address climate change?

Answer: Yes. For example, I believe a strong, vibrant economy is the best defense to a number of concerns, including climate change. If confirmed, I will work to implement pro-growth and pro-environment policies at DOE that will empower more people to address impacts of climate change.

- c) The Department of Defense considers climate change a “threat multiplier” and has identified climate change in the 2010 and 2014 Quadrennial Defense Reviews as threats to U.S. national security as it exacerbates droughts, intensifies extreme weather, and can lead to instability and conflict over resources and other matters. Will you push the President and Congress to fund the Department of Energy to carry out its vital roles in funding scientific research and developing solar, wind, and other low-carbon energy technologies to build our clean energy economy and reduce our impact on climate change?

Answer: The Department of Energy Organization Act states that “a strong national energy program is needed to meet the present and future energy needs of the Nation consistent with overall national economic, environmental and social goals.” I believe that DOE’s goals, as written by Congress into the DOE Organization Act, are critical and I will support the enacted funding levels to carry out these roles.

Question 2: As one of the most isolated island chains in the world, the state of Hawaii has had to rely on imported fossil fuels for over 90 percent of our energy production. Research, technical assistance, and grants, particularly the Department of Energy’s State Energy Program have been key to supporting Hawaii’s shift towards locally produced renewable energy. In 2014, the DOE renewed a memorandum of understanding with Hawaii to provide technical assistance and collaborate on the Hawaii’s goals of energy technology innovation and eliminating the state’s reliance on imported oil. Hawaii has increased local, renewable electricity production to 23% in 2015 steady progress towards the state’s ambitious goal of 100% renewable energy by 2045.

- a) Do you believe the Department of Energy has a role to play in providing technical assistance to States to advance their respective energy initiatives?

Answer: I support the President’s FY 2018 budget request and believe that providing and sharing information is an important role of the Department of Energy.

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- b) I am troubled by the President's budget proposal which terminates the State Energy Program. This program is very helpful to Hawaii. If confirmed, will you commit to saving the program from termination? What assurances can you give me that you will help to save the State Energy Program?

Answer: I support the President FY 2018 Budget proposal. I believe Congress and the President will come to an agreement and I will carry out the laws passed by Congress.

Question 3: During Secretary Perry's confirmation hearing earlier this year, he and I discussed how the Department of Energy under his leadership would be able to effectively pursue an all-of-the-above energy strategy – as he testified the Department would do – if the Trump Administration held true to its threat to completely eliminate a core program like the Office of Energy Efficiency and Renewable Energy (EERE) which focuses on transitioning to a cleaner, renewable energy economy. Secretary Perry said, "Well, Senator, maybe they'll have the same experience I had and forget that they said that."

While this was a humorous response, I was hopeful once Governor Perry became Secretary he would take this effort seriously. We now know that the Trump Administration did not forget. The President's budget proposes to cut the EERE program by 70 percent. The program was funded at \$2.1 billion in FY 2017 and is proposed to be funded at \$636 million in FY 2018.

- a) How can the Department lead an all-of-the-above energy strategy if so much of the Department's all-of-the-above capabilities are being eliminated or marginalized through drastic funding cuts? Do you support these cuts?

Answer: I support the President's FY 2018 budget proposal. DOE and EERE can achieve great things at lower funding levels.

Question 4: You noted in your testimony the important of ensuring the reliability of our electric grid. The state of Hawaii is unique in that each of the Hawaiian Islands operates as its own isolated grid. Consequently, the State faces a number of unique challenges as it seeks to incorporate more intermittent renewable energy into its power supply. Last Congress, I introduced a number of bills that would improve upon the Department of Energy's ability to spur grid modernization and energy storage. In recent years, the Department has also been a key partner with the State as it seeks to modernize its electric grid.

- a) What steps will you take at DOE to help to modernize and improve the electric grid, and can non-contiguous territories and states like Hawaii and Alaska count on DOE's continued support to improve electricity transmission and distribution?

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Answer: The Secretary has commissioned an agency-wide study on the electric grid, which is due shortly. If confirmed, I look forward to reviewing this study and engaging with you and your staff.

- b) Do you agree energy storage is a critical component of a resilient, reliable grid, and what steps will you take to move forward on energy storage if you are confirmed?

Answer: The Secretary has commissioned an agency-wide study on the electric grid, which is due shortly. If confirmed, I look forward to reviewing this study and engaging with you and your staff.

Question 5: The Department of Energy is a science-focused agency at its core, and there are several advisory boards and councils that provide the Secretary with advice and scientific recommendations. It has been reported in the press that the Secretary's Energy Advisory Board has remained dormant since all 19 advisors resigned on January 20.

- a) If confirmed, do you plan to extend the charters of the SEAB and the other advisory boards and councils, and what areas will you direct them to focus on?

Answer: If confirmed, I will review all advisory boards and councils to ensure they provide expertise on a wide range of scientific research issues and stakeholder input.

Questions from Senator John Hoeven

Question 1: North Dakota produces a lot of energy – from oil, coal, and gas, to wind and geothermal. We know the importance of having that cooperative relationship between stakeholders – states, industry, the federal government, and research institutions – to help leverage all our abundant natural resources, which provide jobs, economic growth, and improve our energy security.

I want to hear more about your energy philosophy and how you would help run the Energy Department.

- In broad terms, what does an “all-of-the-above” energy approach mean to you?

Answer: An “all-of-the above” approach means harnessing all energy resources available.

- And what role will traditional energy – oil, coal, natural gas – have in how you develop the Department's strategy going forward?

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Answer: For the foreseeable future, the traditional energy sources such as oil, coal, and natural gas will continue to provide the bulk of global energy. Going forward, the Department should strive to develop technology that allows for the extraction and use of these fuels in a safe, environmentally sound, and economically efficient manner.

Question 2: The University of North Dakota's Energy and Environmental Research Center (EERC) has an ongoing cooperative agreement funded through the Energy Department's Office of Fossil Energy and administered by the National Energy Technology Laboratory.

EERC is conducting fundamental and applied research that will assist industry in deploying and commercializing efficient, low-carbon, nonpolluting energy technologies that can compete effectively in meeting requirements for clean fuels, chemicals, electricity, and water resources. EERC secures a minimum overall 20 percent cost share from nonfederal partners.

The EERC leads the Plains CO2 Reduction (PCOR) Partnership, a collaboration of more than 80 U.S. and Canadian stakeholders that are working to take CCS out of the lab and into the field.

- Will you work with us on continuing these important cooperative agreements with the Department?

Answer: If confirmed, I look forward to learning more about the PCOR project and engaging with you and your staff on this initiative.

Question 3: One of the projects North Dakota industry is working on is Project Tundra. It is about the near-term viability of coal. It's a CCS retrofit technology pilot project on an existing coal facility. The captured CO2 will be used for enhanced oil recovery in North Dakota's oil fields, with an option to utilize CO2 storage in geologically appropriate zones near the plant.

Project Tundra (455-MW) would scale-up the design optimization from the current Petra Nova project (240-MW) located near Houston, Texas. Instead of using natural gas (flue gas), Project Tundra would utilize low-rank coal, encounter different climate conditions, improve waste heat utilization and overall plant thermal efficiencies, and will leverage the experiences gained at Petra Nova.

In the Fiscal Year 2017 funding bill, I secured a \$6 million solicitation to help develop commercially viable carbon capture and sequestration.

- Do you support research and development of initiatives like Project Tundra to extend the use of existing power plants?

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Answer: I am not familiar with the details of this project. However, I understand the Department has been a strong supporter of sequestration and the Petra Nova project. I would expect this to be continued should I be confirmed.

Question 4: North Dakota industry is also trying to advance the Allam Cycle technology, which is a new supercritical CO2 technology. This is next-generation CCS and about the long-term future of coal.

NET Power is finalizing a 50 megawatt pilot project in La Porte, Texas, funded with only private investment. If successful, there is an opportunity to advance to a larger demonstration phase at a new location.

Last August, North Dakota industry representatives met with the Energy Department to talk about North Dakota's initiatives and the importance of the Department to support demonstration-scale CO2 capture projects on a range of sizes for coal-fueled generating units.

- Will you work with us to provide cost-share support to bring these technologies from technically feasible to commercially viable?

Answer: Yes, I look forward to working with you should I be confirmed.

- Will you be an advocate supporting public-private partnerships for fossil energy research and development?

Answer: If confirmed, I will advocate for public-private partnerships that have been the cornerstone of the Department's activities for many years.

Question from Senator Angus S. King, Jr.

Question: The DOE has invested significant time in recent years in reducing the barriers to the successful deployment of offshore wind here in the US, including in technology at the University of Maine. In your role as Deputy Secretary of Energy can you commit to continuing the DOE's support for offshore wind energy, including the Offshore Wind Advanced Technology Demonstration Program?

Answer: Congress and the President will arrive at a budget agreement, as they have in the past, and if confirmed I will work to ensure that it is executed to the letter. I look forward to learning more about the Offshore Wind Program.

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Questions from Senator Rob Portman

Question 1: On April 26, 2017 Secretary Perry updated, as mandated by law, the Secretarial Determination regarding the transfer of uranium from DOE stockpiles to the uranium market. This determination lowered the amount of uranium that is allowed to be bartered by 450 MTU. As you know, the cleanup of the former Portsmouth Gaseous Diffusion site in Piketon, Ohio receives both appropriated dollars and the proceeds of the barter to fund the decommissioning and decontamination work. Without proper coordination with Congress, lowering the barter limit could lead to job losses at the site and ultimately cost the federal government more in the long run to clean up the site. Will you commit to working with Congress and my office when the next Secretarial Determination is decided in May of 2019?

Answer: Yes, if confirmed, I look forward to working with you on this very important issue.

Question 2: For the first time since the Manhattan Project, the U.S. has no capability to enrich uranium for either national security or commercial purposes. In 2015 the Department of Energy made a conscious decision to delay the build-out of a domestic enrichment capacity for 23 years, meaning we will not be enriching uranium with U.S. made and owned machines until 2038. At the same time, the Department acknowledged that delaying this program so long will double or even triple the cost to the taxpayer, adding billions of dollars to the bottom line, making their decision inexplicable.

If confirmed, would you be willing to re-evaluate the Obama Administration's decision to end the domestic uranium enrichment demonstration program?

Answer: If confirmed, I look forward to learning more about the demonstration project to ensure our nation's future nuclear security needs will be met.

Question 3: If after your review you and the Secretary decide that the previous Administration made a mistake in shutting down the enrichment program, would you be willing to move forward with the build-out of a national security enrichment capacity?

Answer: If confirmed, I look forward to learning more about the demonstration project to ensure our nation's future nuclear security needs will be met.

Question 4: Another area within the Department of Energy that is also very important to me is energy efficiency. I have worked in a bipartisan way with my colleague, Senator Jeanne Shaheen from New Hampshire, on energy efficiency legislation that we first introduced in 2011. Called the Energy Savings and Industrial Competitiveness Act, this legislation is projected to reduce

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emissions by the equivalent of taking 22 million cars off the road, create more than 190,000 jobs, and save consumers \$16.2 billion per year – all by 2030.

If confirmed, will you support my efforts with Senator Shaheen on our efficiency legislation, and work with this committee on ways to improve our nation's energy efficiency?

Answer: If confirmed, look forward to being briefed on your legislation and I will work with the committee on improving energy efficiency in ways that help American families.

Question 5: Will you commit to working with me to advance building energy codes and provide states with the necessary resources and technical assistance needed to adopt model codes?

Answer: If confirmed, I look forward to being briefed on building codes and will work with you on the issue.

Question 6: In 2012, Congress passed the American Medical Isotope Production Act (AMIPA), with the goal of bringing domestic production of medical isotopes online as early as 2013. To date, none of the projects have come online and a number have been cancelled. We are now facing shut-downs of international facilities which will threaten the ability for our doctors to carry out 50,000 life-saving diagnostic tests every day in the United States, equaling 20,000,000 procedures a year involved in the early detection of heart disease, cancer, and dementia, among other illnesses.

A 2016 report issued by the National Academies of Sciences, Engineering and Medicine stated that: "Although the current supply of molybdenum-99 and technetium-99m - isotopes used worldwide in medical diagnostic imaging is sufficient to meet domestic and global demand, changes to the supply chain before year-end could lead to severe shortages and impact the delivery of medical care....The capacity to supply molybdenum-99 will be reduced substantially when the reactor in Canada stops production at the end of October 2016. Canada will then become a supplier of last resort - producing molybdenum-99 only in case of severe global shortages - until its reactor shuts down permanently at the end of March 2018."

According to a 2015 Report by the Nuclear Science Advisory Committee, Moly99 Subcommittee, there is no domestic production of medical isotopes despite the fact that the U.S. makes up 50% of world demand. Given the lack of domestic supply, and the impending shortage American medical professionals will face, are you committed to following through with the goals of AMIPA and establishing a domestic supply source?

Answer: While I have not been briefed on the issue of medical isotopes, if confirmed, I commit to following the law.

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Question 7: In order to increase domestic production of medical isotopes without the use of weapons grade, highly enriched uranium, AMIPA requires that project costs with non-federal partners be cost-shared through the NNSA up to 50% as set forth in the Section 988 of the Energy Policy Act of 2005. In the past administration, DOE and NNSA did not make available the full portion of the 50% cost-share by imposing a \$25 million cap on eligible projects, despite report language included in the FY 2016 Consolidated Appropriations Act (H.R. 2029) reminding NNSA to “fund eligible projects up to the full portion of the 50% cost-share of construction as allowed under AMIPA”. This has prevented innovative projects from moving forward, as the arbitrary gap is preventing private investment. Are you willing to closely examine the cap put in place by NNSA?

Answer: If confirmed, I commit to being briefed on the issue and will closely examine the cap.

Questions from Senator Catherine Cortez Masto

Question 1: The President’s full budget provides \$120 million to restart licensing activities for a Yucca Mountain nuclear waste repository. As you know, I am firmly in opposition to forcing a permanent repository against the will of the State especially when it would put our communities and economy at great risk. I appreciated your time the other day to discuss my concerns, so I want to follow up on your position. Are you in favor of siting the Nation’s nuclear waste at Yucca Mountain?

Answer: I am in favor of following the law and process as outlined in the Nuclear Waste Policy Act to determine whether Yucca Mountain is safe.

Question 2: Do you believe that sound science should govern the re-licensing process?

Answer: Yes, all scientific decisions related to Yucca Mountain should be based on sound science. If confirmed, I will ensure scientific decisions related to Yucca Mountain continue to be based on sound science.

Question 3: Nevada has submitted hundreds of contentions that objectively demonstrate that the site is unsafe. If the site is deemed scientifically unsafe, will you still support it?

Answer: Yes, all scientific decisions related to Yucca Mountain should be based on sound science. If confirmed, I will ensure scientific decisions related to Yucca Mountain continue to be based on sound science.

Question 4: Are you aware of the legislation I introduced with Senator Heller and the Nevada delegation requiring consent based siting for all repository host states, including Nevada, as

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recommended by the Blue Ribbon Commission. If confirmed, would you support the passage of this bill?

Answer: I am not familiar with the bill but, if confirmed, I look forward to learning more about the specifics of your legislation and engaging with you and your staff on this important issue.

Question 5: Do you support the Blue Ribbon Commission's recommendations?

Answer: If confirmed, I look forward to learning more about the recommendations of the Blue Ribbon Commission and working with you and your staff on this important issue. Nevertheless, as you know, the Department is obligated to adhere to existing law such as the Nuclear Waste Policy Act.

Question 6: Are you aware that DOE has estimated that \$15 billion has already been spent on Yucca and that DOE and the NRC would need \$2 billion more just to complete the re-licensing process?

Answer: I am not completely familiar with all of the past expenditures for the Yucca Mountain program, nor am I aware of the cost projections for the Nuclear Regulatory Commission for the licensing proceedings on Yucca Mountain. As an independent agency, the NRC is responsible for developing their own estimates of costs.

Question 7: Do you believe that is cost effective considering interim storage alternatives?

Answer: I support the President's FY 2018 Budget Request that includes funding for a robust interim storage program.

Question 8: Secretary Perry has stated that he believes a robust interim storage program should be a part of the solution—do you agree with that statement?

Answer: I support the President's FY 2018 Budget Request that includes funding for a robust interim storage program.

Question 9: Would you support the continuation of DOE's current work on consent-based siting for storage and disposal facilities?

Answer: I am not sufficiently familiar with DOE's past program to adequately respond; however, if confirmed, I do believe interim storage can play a role in helping to solve the nation's nuclear waste dilemma.

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Question 10: The National Academy of Sciences and Blue Ribbon Commission made recommendations for measures to manage the radiological and social impacts of spent nuclear fuel transportation. If you are confirmed as the Deputy Secretary, would you support the Academy's recommendation that the repository transportation program be removed from DOE?

Answer: Because of the remarkable safety record of the current transportation system, as acknowledged by both the National Academy of Sciences and the Blue Ribbon Commission, I would be careful about making changes to the current system. However, if confirmed, I will study the recommendations of these two organizations to determine if improvements should be made.

Question 11: Would you support the Commission's recommendation that repository shipments of spent nuclear fuel should be fully regulated by the Nuclear Regulatory Commission?

Answer: Currently, the NRC regulates the casks but various agencies besides the NRC, such as the US Department of Transportation, regulate other aspects of shipments of hazardous materials such as these. Because of the exemplary track record of safety for these shipments, if confirmed, I would want to be careful about making regulatory changes. Nevertheless, I am open to recommendations supported by facts and science that will improve the safety of the transportation of these materials.

Question 12: President Trump's full budget for the Department of Energy is extreme and cuts and eliminates many programs that foster renewable energy technologies, R&D, and commercialization. My state is leading the charge for a clean energy economy, so these drastic measures would threaten my state's economy and future growth. Is that your position and how would you address these concerns?

Answer: I support the President's FY 2018 budget and believe that it will produce economic growth for our nation.

Questions from Senator Luther Strange

Questions: A few years ago, the Center for Strategic and International Studies issued a report called "Restoring U.S. Leadership in Nuclear Energy: A National Security Imperative." The report notes the economic pressure on commercial nuclear power from low natural gas prices and subsidies for renewable power, and observes: "[A] contraction would have a significant impact beyond the commercial nuclear energy sector, affecting university physics and engineering programs, materials, science laboratories, manufacturers, labor programs for training nuclear welders, and much more. It would undoubtedly affect the defense establishment and our nuclear

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Navy's capabilities, as well as the United States' ability to shape global standards for safety, security, operations, emergency response and nonproliferation."

These impacts are not only domestic. There are currently about 60 nuclear power reactors being built in 14 countries. As the CSIS report concludes: "Without a strong commercial presence in new nuclear markets, America's ability to influence nonproliferation policies and nuclear safety behaviors worldwide is bound to diminish. In this context, federal action to reverse the U.S. nuclear industry's impending decline is a national security imperative."

Mr. Brouillette, do you understand that the health of the U.S. nuclear industry is not only an economic issue, and commit to incorporate these national security considerations in the Department's policies?

Answer: I believe that the United States must maintain its world leadership in the nuclear industry, including for economic and national security reasons. No mission is more important than the Department's commitment to nuclear security.

How important is it to our national security that the reactors currently under construction be completed?

Answer: While I cannot comment on specific projects, if confirmed, I can assure you that I recognize the critical importance of being able to construct and safely operate large-scale projects, such as nuclear reactors. Our strength abroad depends on our strength here at home.

**Questions for the Record and Responses for Mr. Neil Chatterjee
June 1, 2016**

Questions from Ranking Member Maria Cantwell

Question 1: Chairman Murkowski and I tried to enact energy legislation last Congress that included reforms to hydroelectric licensing at FERC.

45 percent of FERC-licensed projects accounting for one-third of licensed capacity will begin pre-filing for new licenses by 2030. For many of these projects, it will be the first time they will participate in the licensing process Congress in 1986 amended the Federal Power Act directing FERC to given equal consideration to environmental factors.

I believe that, rather waiting for Congress to Act, FERC can, on its own, could make several changes that would improve interagency cooperation in the licensing process. For example, FERC could adjust how it implements its *ex parte* rules to encourage more of its sister federal agencies to accept cooperating agency status under the National Environmental Policy Act. FERC could also accept more requests from its sister agencies for studies likely to be required in any event under other federal statutes (e.g., the Endangered Species Act) at a later stage.

- If confirmed, will you help identify and reduce barriers to interagency cooperation within FERC's existing statutory authority?

Answer: I am aware that the hydropower licensing process can be complex and that, as a matter of law, decision making does not rest solely with the Commission, but also with other agencies that have mandatory conditioning authority. If confirmed, I will work with my colleagues to help identify and reduce potential barriers to interagency cooperation in the hydroelectric licensing process.

Question 2: Under its existing policy, FERC only considers investments in a project on a forward-looking basis as part of the licensing process. This creates a perverse incentive to delay potential investments that could benefit the environment and ratepayers.

The Commission recently asked for comments on whether it should revise its current policy with respect to establishing the length of new license terms for hydroelectric projects.

I have supported legislation to require the Commission to treat project investments by licensees under existing licenses (beyond those already required by the license) the same way it treats investments made under new licenses. This provision has been referred to as the "early action" provision. While accounting for prior investments may complicate the Commission's determination of an appropriate length license term, changing this policy could accelerate improvements in fish passage, turbine efficiency, and other project upgrades.

- Will you commit to considering changing the Commission's current policy with respect to establishing the length of hydroelectric license terms by removing the perverse incentive to delay investments under current licenses?

Answer: I have appreciated working with you and your staff on hydroelectric legislation. As you note, the Commission has issued a notice of inquiry on the subject of its policy for setting new license terms for hydropower projects, which the Federal Power Act requires to be between 30 and 50 years. The Commission asked for comments on a number of issues, including “early action” and whether there should be a 50-year default license term. If confirmed, I will review responses to the notice, and I look forward to addressing this matter with my colleagues.

Question 3: Unlike the Commodity Futures Trading Commission and the Securities and Exchange Commission, FERC cannot license or ban individual traders from trading in jurisdictional markets. It is estimated that more than 2,500 firms and thousands of individual traders participate in physical electricity and natural gas markets. Little is publicly known about which banks, hedge funds, utilities, and marketers are active players.

Furthermore, a repeat offender previously fined by FERC can continue to trade. A trader convicted of criminal fraud, or a former securities or commodities trader who had their securities or commodities trading license revoked would still be permitted to trade over FERC markets.

- Do you think that FERC should explore adopting a registry to keep track of repeat violators of market manipulation restrictions?
- Do you think FERC should explore a licensing regime to, among other things, keep those convicted of market manipulation in other markets from participating in FERC-regulated markets?

Answer: I believe that it is important to be able to track repeat violators in the energy markets and those who may have committed manipulation in other markets. If confirmed, I look forward to discussing this issue with my colleagues and determining whether FERC needs to enhance this capability, whether through a licensing regime or otherwise.

Question 4: The Federal Power Act (FPA) limits FERC’s jurisdiction with respect to certain utilities and FERC’s authority to require participation in organized markets. Governmental entities and non-public utilities, including federal power marketing agencies, municipal utilities, rural electric cooperatives, and public utility districts, are exempt from most regulatory oversight by the Commission.

- What is your understanding of the limitations on FERC’s authority with respect to the Bonneville Power Administration?
- What is your understanding about FERC’s authority to require utilities to participate in organized markets?
- Will you abide by these limitations if confirmed?

Answer: In most respects, FERC’s authority with respect to Bonneville is more limited than with respect to public utilities. Pursuant to the Pacific Northwest Electric Power Planning and

Conservation Act (Northwest Power Act), FERC's review of Bonneville's regional power and transmission rates is limited to whether Bonneville's rates meet the three specific requirements:

- (i) whether the rates are sufficient to assure repayment of the Federal investment in the Federal Columbia River Power System over a reasonable number of years after first meeting other costs;
 - (ii) they must be based upon the Administrator's total system costs; and
 - (iii) whether insofar as transmission rates are concerned, they must equitably allocate the costs of the Federal transmission system between Federal and non-Federal power.
- FERC also has limited authority with respect to Bonneville under provisions of the Federal Power Act, such as with respect to reliability standards adopted pursuant to section 215 of that statute.

If confirmed, I would abide by those statutory limitations, unless the law is changed.

In addition, my understanding is that FERC has ruled that the decision of whether to join a regional transmission organization or independent system operator, which operate organized markets in various parts of the country, is voluntary.

Question 5: Just before resigning Commissioner Bay wrote a Concurring Opinion to an order granting a natural gas pipeline certificate in which he suggested that the Commission should reconsider its use of precedent agreements between pipelines and potential future customers to assess whether a proposed new pipeline is needed. In particular, Commissioner Bay argued that precedent agreements involving pipeline affiliates are particularly suspect.

- Do you agree with Commissioner Bay that the Commission should reexamine its policies for assessing whether a new pipeline is necessary? If not, why not?

Answer: I understand that the Commission's current policy regarding demonstrating need was established in 1999. I believe that agencies should, from time to time, review their policies to ensure they are functioning effectively. If confirmed, I look forward to reviewing the Commission's current policies for considering pipeline applications with my colleagues to ensure that all relevant factors are appropriately considered in the Commission's review process.

Question 6: Just before resigning Commissioner Bay wrote a Concurring Opinion to an order granting a natural gas pipeline certificate in which he suggested that the Commission should engage in a broad regional assessment of the environmental impacts of the Marcellus and Utica shale gas development activities.

- Do you agree with this recommendation? If not, why not?

Answer: I believe it is important that the Commission ensure that its procedures for reviewing and acting upon applications for new infrastructure are both efficient and in compliance with all applicable statutes. If confirmed, I look forward to addressing with my colleagues any opportunities for furthering these goals.

Question 7: When FERC grants a Certificate of Public Convenience and Necessity to a proposed interstate natural gas pipeline, the developer is also granted eminent domain authority. Sometimes the eminent domain authority is used before the Commission has acted on a Request for Rehearing of its initial order and before a party to the proceeding has had an opportunity to seek judicial review of the order.

- Do you believe that a pipeline should have the opportunity to utilize eminent domain authority if it remains possible that the Commission, pursuant to a Rehearing Order, or an appellate court, can still issue an order reversing FERC's decision to grant the Certificate? Please explain.

Answer: It is my understanding that the authority for the developer of a natural gas pipeline to use eminent domain is established by the Natural Gas Act and is enforced by state and federal courts, not the Commission. That said, if confirmed, I look forward to working with my colleagues to ensure that the concerns of landowners affected by infrastructure projects are appropriately addressed in the Commission's processes.

Question 8: Both the Federal Power Act and the Natural Gas Act require that a rate or tariff change proposed by a jurisdictional utility or interstate natural gas pipeline goes into effect if the Commission fails to act within 60 days of the proposal. There have been instances in which a rate increase has been permitted to go into effect because a tie vote prevented the Commission from acting. An appellate court has ruled that, in those circumstances, a party opposing the rate increase has no standing to challenge the rate change in court because FERC never issued an order on the matter.

- Senator Markey has proposed legislation that would enable opponents of a rate or tariff change to seek judicial review even if the Commission fails to issue an order due to a tie vote. Do you support this legislation?

Answer: I am reluctant to comment on the proposed legislation that you noted, but I believe in general that it is appropriate for parties to a FERC proceeding who are adversely affected by a rate or tariff change to have the opportunity to seek relief.

Question 9: FERC Order No. 1000, which among other things, requires regional transmission planning, has received mixed reviews in part because it has not led to the development of transmission lines connecting separate energy planning regions, which would help access remotely located renewable electricity resources, such as wind and solar.

- What do you believe FERC should do, if anything, to encourage interregional transmission planning?

Answer: In June 2016, the Commission held a technical conference to explore issues related to the competitive transmission development processes that were established to comply with Order No. 1000. Issues related to interregional transmission coordination and regional transmission planning were included in the scope of that conference and in the follow-up responsive comments sought by FERC. I believe that development of that record and continued discussions

with industry to understand the issues surrounding interregional planning could be a productive next step. I understand the importance of transmission development to providing reliable electricity service, and, if confirmed, I look forward to addressing this issue with my colleagues.

Question 10: Last year the Senate Energy and Natural Resources Committee held a hearing on natural gas pipelines. We heard testimony that, in some instances, existing natural gas pipelines are not being fully utilized. For instance, several interstate pipelines serving the northeast were not fully utilized during the Polar Vortex.

- Do you believe we should explore how to use existing natural gas pipeline capacity more efficiently before the Commission grants new Certificates to build additional pipeline capacity in the same region?

Answer: I believe both that it is important to make efficient use of existing natural gas pipeline capacity and that our nation may need additional natural gas pipeline infrastructure. Making efficient use of existing capacity ensures that consumers obtain maximum benefit from prior pipeline investment. Investment in new pipelines can ensure that customers receive needed gas and enhance the resilience of the gas pipeline network.

Question 11: I am concerned that sophisticated energy traders can engage in schemes designed to manipulate energy markets without actually being in violation of a tariff on file with FERC. These traders argue that FERC's anti-manipulation authority does not apply if there is no specific tariff violation?

- Don't you believe that FERC's market manipulation authority can apply even if there is not a specific tariff violation?

Answer: Yes, it is my understanding that FERC's anti-manipulation authority may apply even where there is no specific tariff violation.

Question 12: Cybersecurity vulnerabilities in our nation's energy infrastructure pose grave national security and economic risks to the country. The Department of Homeland Security reported that 56% of cyber incidents against critical infrastructure in 2013 were directed at energy infrastructure. This number has since decreased: in 2016 it was down to 20%, but it is still too high. Although we have mandatory cybersecurity standards for electric utilities, natural gas pipelines are subject to merely voluntary guidelines issued by the Transportation Security Administration (TSA).

- Given the increased dependence on natural gas for power generation for many of FERC regulated utilities, don't you agree that there should be a mandatory standards regime for gas pipeline cybersecurity, just as there is for electric utility cybersecurity?

Answer: I defer to Congress and the Transportation Security Administration (TSA) as to the adequacy of TSA's natural gas pipeline cybersecurity program. Congress has granted TSA authority to establish mandatory cybersecurity regulations for natural gas pipelines. It is my

understanding that TSA is reviewing its voluntary cybersecurity guidelines for pipelines and that FERC staff has offered assistance with that effort.

Question 13: The 2000-2001 western energy crisis did a lot of damage to my constituents and the economy throughout the region. It became clear to me in the aftermath that FERC did not have sufficient authority to prevent market manipulation and punish those engaged in these acts. Through the Energy Policy Act of 2005 we gave FERC the authority it needed. The Commission has since investigated more than 100 cases of alleged manipulation, 32 of which have been settled. The Commission has imposed approximately \$547 million in civil penalties. I understand that the industry thinks FERC's Enforcement Office has been too aggressive and that the new Trump Administration provides a golden opportunity to weaken the anti-manipulation program.

- I need your commitment that you will support a strong Office of Enforcement that acts as "the cop on the beat" to prevent utilities and marketers from taking advantage of consumers. Will you give that commitment?

Answer: Absolutely. I believe in strong markets and I believe that strong markets are dependent on strong enforcement. Market participants have to have faith that there is not manipulation and I will work to ensure that enforcement is effective, fair and transparent. The commitment of FERC to continue to actively combat market manipulation is essential. I believe that greater transparency produces stronger markets and that is also true in the enforcement context. FERC has been working with other agencies to foster better coordination and I believe my experience and relationships across such agencies will add to that enhanced coordination.

Question 14: Last month, Secretary Perry sent a memo to his Chief of Staff asking that the Department prepare a study examine the state of wholesale electricity markets, especially why coal and nuclear plants are having a hard time competing with natural gas and renewable resources. The Secretary's memo also hinted that state and federal renewable energy incentives are to blame.

The Secretary followed this up a few days later with a speech in New York during which he suggested that the Trump Administration may try to preempt state programs, such as renewable energy standards. It does not take a rocket scientist to know that it is low natural gas prices, not renewable energy, that is making coal and nuclear power uncompetitive.

But it is also troubling that the Administration appears to be suggesting that adding more renewable energy threatens grid reliability especially when our national labs have repeatedly found this is not true. It is even crazier that Secretary Perry is making these false statements since Texas has more wind power than any other state.

- Are you aware that the National Renewable Energy Laboratory (NREL) has found that the eastern grid and the western grid could each reliably accommodate 30 percent renewable energy rates without any changes and that a third NREL study concluded that renewable energy will be able to reliably generate 80% of U.S. power needs by 2050 if we invest in increased grid flexibility?

Answer: Yes, I am aware of those studies. As I mentioned during my confirmation hearing, we need to be able to call on all forms of resources to meet our needs, including renewable resources. In pursuing this goal, we also must maintain our commitment to grid reliability.

Question 15: There is a growing tension between state energy policies and federally regulated electricity markets. Low wholesale electricity prices are benefiting consumers and challenging the economics of coal and nuclear power plants. The revolution in natural gas is the main cause. Commissioner Powelson in particular has been a big booster of the benefits of the Marcellus Shale.

Meanwhile, states continue to exercise their authority to encourage particular types of generation – especially zero emissions technologies. These policies have taken different forms, including: renewable portfolio standards (29 states), carbon caps (the Northeast and California), and direct payments to nuclear power plants (New York and Illinois).

Last year, the Supreme Court made clear that the Power Act prohibits state policies that directly intervene in wholesale markets. But the Court left clear room for states to continue to preferring some resources over others. Given these facts, I worry about FERC rushing to judgment based on an outdated or ideological view of the grid.

- Do you agree that FERC should not intervene and use the Federal Power Act to preempt state clean energy policies?

Answer: At times, state policy decisions potentially interact with FERC-jurisdictional wholesale electricity markets. FERC's role is to ensure that wholesale electricity rates remain just and reasonable. I appreciate that states and the Commission need to be respectful of each other's boundaries under the law. Thus, I will be respectful of state boundaries while carrying out my duties as a FERC commissioner, if confirmed.

Question 16: Since 1978, Section 210 of the Public Utility Regulatory Policies Act (PURPA) has required monopoly utilities to purchase competitive renewable energy from independent producers. While Congress has relaxed this requirement for utilities in organized electric markets, PURPA remains a key driver of renewable energy and competitive prices in the West and the Southeast.

Last June, FERC held a technical conference on the implementation of PURPA. Utilities used the technical conference to argue for greater FERC intervention to limit opportunities for small renewable energy developers. I believe state commissions already have many ways to tailor the must-purchase requirement to address local concerns. I am deeply skeptical about utilities running to Congress and FERC when they don't get their way with their own regulators.

- Do you agree that regulators in traditional monopoly states have powerful ways to adjust the "must-purchase" requirement under PURPA?

- Given the states' own authority under PURPA, why would FERC need to intervene to limit one of the only federal mechanisms that encourage independent power production in those states?

Answer: Both FERC and the states have important roles under PURPA. Last year, FERC convened a technical conference on a number of issues related to the statute's implementation. As I mentioned during the hearing, I believe that any major changes to PURPA need to come from Congress.

Question 17: Would you continue FERC's encouragement of a holistic approach to transmission planning that incorporates non-wires alternatives, high-voltage transmission lines, and advanced transmission technologies (such as high-capacity and high-efficiency conductors, compact transmission towers, and variable frequency transformers)?

Answer: FERC's Order Nos. 890 and 1000 require open, transparent transmission planning processes for public utility transmission providers. These planning processes provide the opportunity for consideration of various alternatives in identifying more efficient or cost-effective solution to transmission needs. I support planning that incorporates viable alternatives, including those that may be non-wires.

Question 18: FERC is responsible for protecting against corporate affiliate abuse in a variety of transactions, including power sales and facility acquisition. Transactions between a public utility and a merchant affiliate can expose the utility's captive customers to cross-subsidizing the affiliate and its shareholders.

- Are you familiar with the provisions of the Federal Power Act that prohibit public utilities from inappropriately cross-subsidizing non-utility corporate affiliates?
- Will you commit to enforcing existing FERC standards applied to reviewing market rate contracts between corporate affiliates?
- Do you agree that the transfer of facilities subject to FERC jurisdiction between a public utility and its merchant affiliate must always be scrutinized for cross-subsidization?

Answer: Yes, I am familiar with the provisions of section 203 of the Federal Power Act that prohibit public utilities from inappropriately cross-subsidizing non-utility corporate affiliates. I am also familiar with the Commission's policies under section 205 of the Federal Power Act that protect customers from the effect of inappropriate cross-subsidization between a public utility and its market regulated power sales affiliates.

I am generally aware of the Commission's precedent that applies to market rate contracts between corporate affiliates, and if confirmed, I will ensure compliance with the Commission's rules and regulations.

Question 19: In 2013, Congress passed the Hydropower Regulatory Efficiency Act, directing FERC to investigate the feasibility of issuing a license for hydropower development at non-

powered dams and closed loop pumped storage projects during a two-year period. FERC implemented a pilot program, ultimately applied to one non-powered dam project in Kentucky, and issued a license for the project within two years. Members of this committee look forward to FERC's report, required under the 2013 law, on this process, following a workshop held by the Commission this spring.

- If confirmed, how would you approach the challenge of reducing disincentives in the licensing process and potentially inadequate compensation in the wholesale markets to the development of hydropower at existing non-powered multi-purpose dams and at appropriately sited and designed pumped storage projects?

Answer: I believe that we should be able to rely on all forms of energy resources, including hydroelectric resources. I understand that Commission staff submitted to Congress the report required by the 2013 law on May 25, 2017, and that the report said hydropower licenses have been and can be issued in two years or less under the right circumstances. If confirmed, I look forward to discussing with my colleagues ways in which FERC could further improve the procedures for the development of hydropower.

Questions from Senator Ron Wyden

Question 1: It appears that the White House has thrown its support behind the Jordan Cove liquefied natural gas project, being discussed in my home state of Oregon. Should you be confirmed as FERC commissioner, will you commit to avoiding any step that could be interpreted as political interference from the White House in FERC's deliberative permitting process in Oregon and nationwide? And will you commit to leading a thorough and transparent stakeholder process, where all community voices in Oregon -- including tribal community voices -- can be heard?

Answer: The Commission is an independent agency and is required by the Natural Gas Act to issue decisions based on information set forth in the public record of each proceeding. That is an approach that I support and that I expect to continue. I believe that the Commission's processes should be open and transparent. Also, as I mentioned at the hearing, I appreciate that there are stakeholders with a variety of viewpoints on these issues, and all sides of the issues should be heard before a decision is made. If confirmed, I look forward to considering all comments in the record during deliberations on any project with my colleagues before making any decision.

Question 2: As you know, FERC has authority under the Natural Gas Act to review gas pipeline applications. What factors would lead you to deny approval for a new or expanded pipeline? Does that calculation change if there are customers for the proposed pipeline's capacity?

Answer: I recognize the importance of natural gas pipeline infrastructure to meeting the energy needs of our nation's consumers. The Natural Gas Act requires the Commission to determine that proposed pipeline projects are consistent with the public convenience and necessity. If confirmed, I look forward to reviewing the Commission's policies and processes for considering pipeline applications with my colleagues to improve their efficiency while ensuring that all relevant factors are appropriately considered.

Question 3: Former chairman Bay made comments before he left FERC noting that it is “inefficient to build pipelines that may not be needed over the long term and that become stranded assets.” He also suggested that simply considering precedent agreements may not be an adequate measure of need. How would you define need for a gas pipeline? Is having customers for the pipeline’s capacity enough? How is that decision-making changed if those customers are the same entities-- or affiliates of those entities--involved in seeking approval for the pipeline?

Answer: I recognize the importance of natural gas pipeline infrastructure to meeting the energy needs of our nation’s consumers. The Natural Gas Act requires the Commission to determine that proposed pipeline projects are consistent with the public convenience and necessity. If confirmed, I look forward to reviewing the Commission’s policies and processes for considering pipeline applications with my colleagues to improve their efficiency while ensuring that all relevant factors are appropriately considered.

Question 4: As commissioner, what steps would you take to promote public participation, transparency, and confidence in FERC’s pipeline certification process by incorporating community, landowner and scientific inputs?

Answer: I agree that public engagement is important to FERC proceedings. Development of a record that reflects comments on all sides of an issue enhances FERC’s ability to make appropriate decisions. The Commission is required to issue decisions based on the facts set forth in the public record (including input from affected landowners, general public, and other agencies), as well as based on legal precedent and policy. If confirmed, I look forward to addressing with my colleagues any steps the Commission may take in promoting public participation, transparency and trust in the pipeline certification process.

Question 5: Also in his departing comments from FERC, former chairman Bay noted that it is “in light of the heightened public interest and in the interests of good government, I believe the Commission should analyze the environmental effects of increased regional gas production from the Marcellus and Utica.” As Commissioner, if confirmed, can you commit to directing Commission staff to conduct such studies on new and expanded pipelines?

Answer: I believe the Commission’s consideration of pipeline applications should ensure that its procedures for reviewing and acting upon applications for new infrastructure are both efficient and in compliance with all applicable statutes. If confirmed, I look forward to addressing with my colleagues any opportunities for furthering these goals.

Question 6: Chairman Bay also noted that “where it is possible to do so, the Commission should also be open to analyzing the downstream impacts of the use of natural gas and to performing a life-cycle greenhouse gas emissions study.” It is my opinion that FERC should incorporate climate considerations into their evaluation of the environmental impacts of proposed natural gas pipelines and liquefied natural gas export facilities, as required under the National Environmental Policy Act. As Commissioner, if confirmed, can you commit to including climate change considerations and analysis in the environmental review conducted on new and expanded pipelines?

Answer: I understand that the Commission's environmental analysis for a proposed natural gas pipeline or liquefied natural gas export facility considers the greenhouse gas emissions associated with the construction and operation of that project, as well as impacts potentially resulting from climate change over the region in which the project is located. If confirmed, I look forward to working with my colleagues in determining how information regarding climate impacts is addressed appropriately in such proceedings.

Question 7: I am concerned about abuse of eminent domain by the natural gas and pipeline industries in recent years, aided and abetted by premature and improper FERC authorization of eminent domain. A review of FERC's approval process is needed, because of the ramifications of the certificate, which grants the holder the ability to exercise eminent domain. If confirmed, will you take steps to review, and revise if necessary, the eminent domain proceedings at FERC? Also, can you commit to holding an evidentiary hearing, as articulated in FERC's official policy, when a significant amount of eminent domain is implicated in a project?

Answer: It is my understanding that the Natural Gas Act grants the ability to exercise eminent domain to the pipeline company once the Certificate is issued. However, if confirmed, I look forward to addressing with my colleagues the issue of how best to ensure that the concerns of landowners affected by infrastructure projects are appropriately taken into account in the Commission's decision making process.

Question 8: Mr. Chatterjee, a broad coalition in Oregon, including consumer advocates, electric utilities and environmental groups, championed recent legislation to increase the renewable portfolio standard to 50% for our state. The state legislature made that decision and the governor signed that into law. Now, in some FERC-supervised markets, this sort of democratic process is under attack. FERC recently held a technical conference to explore those assaults on state authority. Do you support the federal government trampling states' rights to pursue state energy policies, such as renewable portfolio standards? Or do you think states should have the authority to establish their own energy policy through their constitutional rights?

Answer: I believe that states should have the authority to make resource decisions within their jurisdiction. However, we need to be sensitive to instances where state policy intrudes into FERC-jurisdictional wholesale electricity markets and into FERC's role to ensure that wholesale electricity rates are just and reasonable. I also believe to ensure safe and reliable electricity we need fuel diversity, and I understand that there are some very complex questions about how to maintain that fuel diversity given some of the market challenges. FERC recently held a technical conference with respect to the interaction between state initiatives and FERC-jurisdictional wholesale electricity markets. If confirmed, I look forward to reviewing the record in the Commission's proceeding and working with my colleagues on these issues.

Question 9: Energy storage and distributed energy resources are some of the most rapidly growing energy technologies out there, and they can provide multiple benefits to the grid. And yet, there are unfair barriers to energy storage and distributed energy resources in the wholesale electricity markets. Do you agree FERC should be promoting technology-neutral competitive

markets? More specifically, do you think energy storage assets--and "distributed energy resources"--should be able to compete in wholesale electricity markets?

In your view, should FERC have a significantly different process for its certification of gas pipelines than it does for interstate transmission lines?

Answer: As I mentioned at my confirmation hearing, I believe that the nation should seek to rely on all forms energy resources, including storage resources. The Commission recently proposed new requirements to improve the opportunities for electric storage participation in organized wholesale electric markets. In issuing its proposed rule, the Commission stated that it has observed that market rules designed for traditional generation resources can create barriers to entry for emerging technologies, and I understand that the proposal seeks to eliminate or minimize those barriers. If confirmed, I look forward to addressing this matter with my colleagues.

Both types of infrastructure raise similar siting issues. After Congress in 2005 granted the Commission limited backstop authority with respect to the siting of electric transmission facilities, the Commission adopted implementing regulations based in part on its experience with permitting natural gas pipelines. However, the effectiveness of that statutory authority has been diminished by court decisions regarding when the Commission's backstop siting authority could be exercised and the sufficiency of the Department of Energy's national interest electric transmission corridor designations (which underline the Commission's backstop siting authority).

Question 10: As commissioner, what steps would you take to promote public participation, transparency, and confidence in FERC's pipeline certification process by incorporating community, landowner and scientific inputs?

Answer: Please see my response to your Question 4 above.

Question 11: Given that FERC has endorsed markets and competition for energy and ancillary services, is it your opinion that this approach can be successfully used for any and all providers of all reliability-related services?

Answer: Both energy markets and the manner by which ancillary services are obtained differ in various regions of the country. I believe that organized markets benefit consumers in those parts of the country that have chosen that structure. I also respect the decisions of other parts of the country not to pursue that path and, instead, to rely on a more traditional approach.

Question 12: Inter-regional, and economically beneficial electricity transmission is often neglected by the utility industry because of divisions in service areas, state's boundaries, and preferences of utilities to take narrow view of economic benefits. How will you support infrastructure investments, specifically electricity transmission, that bring lower energy costs to consumers?

Answer: FERC's Order No. 1000 may provide a platform for further discussion on ways to support needed transmission investment that brings reliable, cost-effective energy to consumers. I understand that much of the regional planning pursuant to Order No. 1000 is relatively recent and that FERC recently has directed increased focus and attention to interregional coordination. Finally, dialogue with state regulators over matters of beneficiaries and siting may prove beneficial.

Question 13: Do you believe there's been a lack of development of interregional transmission facilities, and if so, are there actions the Commission should take to facilitate such development?

Answer: The Commission has explored the issue of interregional transmission development in recent years. The Commission issued Order No. 1000 in 2011, a Final Rule that required improved coordination between neighboring transmission planning regions for new interregional transmission facilities. In addition, Order No. 1000 required each public utility transmission provider to participate in a regional transmission planning process that has an interregional cost allocation method. To date, the Commission has issued final orders approving interregional transmission coordination procedures for all the pairs of neighboring transmission planning regions that were required to comply with the Final Rule. As these pairs of regions have worked to implement their interregional transmission coordination procedures, the Commission has continued to examine issues related to interregional transmission development. I support this continued effort to make sure FERC policies are meeting their intended goals. In June 2016, the Commission convened a technical conference addressing competitive transmission development, including interregional transmission coordination. Several speakers at the technical conference, as well as some FERC Commissioners, questioned whether the Commission should do more to facilitate interregional transmission development. After the technical conference, the Commission requested post-technical conference comments on several issues related to interregional transmission development. If confirmed, I look forward to reviewing the record and addressing this issue with my colleagues.

Question 14: How will you facilitate the development of interregional transmission projects shown to provide more efficient or cost-effective solutions to regional needs?

Answer: In response to the preceding question, I noted that this issue is currently under consideration at the Commission following the June 2016 technical conference and subsequent request for post-technical conference comments. The technical conference proceeding has provided the Commission with a record that details various commenters' concerns with the interregional transmission coordination procedures in place today, as well as their suggestions for supporting more efficient or cost-effective interregional transmission development. If confirmed, I look forward to reviewing this record and addressing this issue with my colleagues.

Question 15: How will you promote joint and coordinated planning between regional transmission planners for needed inter-regional transmission?

Answer: The June 2016 technical conference on transmission development referenced in my response to the preceding question also explored the issue of joint and coordinated planning for interregional transmission facilities. Moreover, numerous commenters addressed issues relating

to joint and coordinated interregional transmission planning in their post-technical conference comments. If confirmed, I look forward to reviewing this record and addressing this issue with my colleagues.

Question 16: Will you ensure interregional transmission project proposals have the opportunity to be studied by each affected RTO?

Answer: As I described in my answer to Question 13, the Commission issued Order No. 1000 in 2011. In Order No. 1000, the Commission required that, to be eligible for interregional cost allocation, an interregional transmission project must be selected in each region's regional transmission plan for purposes of cost allocation. As a result, Order No. 1000 provides that all potential interregional transmission projects must be considered through each transmission planning region's regional transmission planning process before they are eligible for interregional cost allocation. Because Order No. 1000 applies to all public utility transmission providers, this is true regardless of whether or not the transmission planning region is also a Regional Transmission Organization.

Question 17: How will you ensure that interregional evaluation processes and cost allocation methods encompass the full range of benefits (e.g., reliability, resilience, security, facilitating state policies, and congestion/planning reserve margin reduction) provided by interregional projects?

Answer: As I noted in my answer to Question 13, in June 2016 the Commission convened a technical conference on competitive transmission development, including interregional transmission development. At the technical conference, both the speakers and FERC Commissioners raised issues relating to the evaluation processes and interregional cost allocation methods that apply to interregional transmission facilities. Commenters also addressed these issues in their post-technical conference comments. If confirmed, I look forward to reviewing this record and addressing these issues with my colleagues.

Questions from Senator Bernard Sanders

Climate change

Question 1: President Trump has suggested in the past that climate change is a hoax. Is the President correct? Is climate change a hoax?

Answer: I do not believe climate change is a hoax.

Question 2: Do you agree with the vast majority of scientists that climate change is real, it is caused by human activity, and that we must aggressively transition away from fossil fuels toward energy efficiency and sustainable energy like wind, solar, and geothermal?

Answer: I believe there is much we can do to achieve a sensible balance between protecting the environment from climate change and other threats while still maintaining a robust economy and the affordable and reliable power necessary to meet society's needs.

Question 3: Do you agree with the vast majority of scientists that the combustion of fossil fuels contributes to climate change?

Answer: Yes.

Question 4: Do you believe that FERC has a role in reducing the extraction and use of fossil fuels?

Answer: It is my understanding that the Natural Gas Act gives the Commission no direct role regarding the extraction or use of fossil fuels.

Question 5: If confirmed, how will you work to address climate change?

Answer: I think it is important to look at the actual role FERC plays in addressing this issue. Any policy to mitigate carbon emissions should originate in Congress; it should not be designed at FERC. Addressing climate change will require policy changes that the public accepts, and maintaining and enhancing affordability and reliability is vital to gaining that public acceptance. Should I be fortunate enough to be confirmed, my role as a FERC commissioner would be to ensure that any such policy not have a deleterious impact on reliability and affordability of our energy supply.

Energy system transformations

Question 6: What do you believe are the best ways to achieve a sustainable, carbon-free energy future?

Answer: While FERC's policies are resource- and fuel-neutral, the energy industry continues evolve and changes to the generation mix require that we continue to evaluate the performance of energy markets. This is critical because FERC relies on competitive markets to provide just and reasonable rates and reliable service for consumers, and to send appropriate investment signals for developers. On May 1-2, 2017, in Docket No. AD17-11, FERC held a technical conference to explore the interplay between wholesale markets and policy goals of states, including their support of particular resource attributes or externalities.

Comments are expected in that proceeding, and if confirmed, I look forward to reviewing the record and these matters with my colleagues.

Question 7: What ways can FERC prevent economic harm to low-income Americans during transformations of the energy system?

Answer: I believe FERC's responsibility to ensure just and reasonable rates is key to protecting consumers. If confirmed, I will carefully consider the matters before the Commission to reach decisions that ensure just and reasonable rates.

Question 8: What role do you see FERC has in increasing the reliability of the electric grid to increasingly extreme weather while ensuring generation is sustainable and low-carbon?

Answer: The Commission reviews reliability standards for approval and enforces those standards under section 215 of the Federal Power Act. FERC may require the Electric Reliability Organization (*i.e.*, North American Electric Reliability Corporation (NERC)) to develop a reliability standard to address a matter. The reliability standards are largely resource neutral. My understanding is that FERC looks to NERC to perform event analysis for extreme weather events on an interconnection wide basis; such analysis considers the use/performance of all resources to assess the risks to reliability during the extreme weather. If confirmed, I will work with my colleagues and engage stakeholders on these matters.

Question 9: If confirmed, what steps will you take at FERC to help the U.S. transform its energy system as quickly as possible from one based on carbon-intensive fuels to one based on clean, sustainable fuels?

Answer: Please see my response to your Question 6 above.

Question 10: Energy prices impact all American families. Yet climate change poses catastrophic economic, environmental and social threats to all Americans. Delaying action on climate change has severe long-term costs. Moreover, renewable energy sources like wind and solar are the cheapest available, and aren't subject to the sorts of wild price fluctuations that we see with fossil fuels. When combined with aggressive energy efficiency, they can provide cheaper energy over the long term than dirty fossil fuels.

If confirmed, what steps will you take at FERC to help the U.S. transform its energy system, as quickly as possible, from one based on carbon-intensive fuels to one based on clean, sustainable fuels?

Answer: Please see my response to your Question 6 above.

Question 11: In Vermont, energy efficiency investments have saved \$279 million in avoided regional transmission system upgrades. What additional steps can FERC take to aggressively promote the use of energy efficiency and other strategies to avoid unnecessary expensive new transmission lines and new baseload power plants?

Answer: FERC has taken certain steps to allow the integration of customer demand resources, such as energy efficiency, into the markets it oversees. For example, customer demand resources must be considered on a comparable basis to the services provided by comparable generation resources in local transmission planning processes where appropriate. Order No. 1000 required each public utility transmission provider to consider proposed non-transmission alternatives on a comparable basis when evaluating potential transmission solutions in their regional transmission planning processes. In addition, two of the wholesale markets that the Commission regulates, PJM and ISO-NE provide a mechanism for energy efficiency investments to participate in and receive compensation for their capacity value from the wholesale capacity market.

Question 12: What steps can FERC take to prioritize dispatching clean distributed renewable energy before dispatching fossil fuel generation?

Answer: RTO/ISO markets (*e.g.*, ISO-New England) dispatch the least cost resources to meet demand. Resources offer their supply into the markets based on their marginal cost of production and RTOs/ISOs clear their markets in a manner that minimizes costs to consumers of electricity while recognizing transmission constraints and other reliability issues. Many renewable energy resources have no fuel costs, and have low or zero marginal costs, and thus are economic to dispatch whenever they are available. They are fully dispatched by the RTO/ISO markets unless transmission lines become overloaded or other reliability constraints prevent their full dispatch.

Question 13: If confirmed, will you commit to encouraging utilities around the country to dramatically expand rooftop solar and other types of distributed generation?

Answer: The increase in rooftop solar and distributed generation has generally been driven by state-level forces. FERC has sought to remove barriers to the participation of resources such as distributed generation in the wholesale markets. Market operators like ISO-NE already recognize distributed generation capacity when establishing its capacity requirement so that states get the capacity benefit of actions designed to encourage rooftop solar and other distributed generation. In addition, late last year, FERC issued a Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators proposed to address such barriers by providing a way by which distributed energy resource aggregators can participate in the organized wholesale electric markets. If confirmed, I look forward to reviewing the comments the Commission received in response to the proposal and addressing this issue with my colleagues.

Question 14: In 2013, you wrote: “renewable energy is simply not competitive, affordable or widely available, even with significant, expensive government support.” Would you still make that claim? If so, why? If your opinion has changed, what are the factors behind your decision?

Answer: While natural gas, coal and nuclear remain America's principal sources of electricity, wind and solar power use has taken off across the U.S. thanks in part to tax incentives and supportive government policies. Renewable power is now cost-competitive with other sources of electricity in some parts of the U.S. I gained an appreciation for this while working with numerous Senators on tax provisions in this area that were included in the 2015 omnibus.

Question 15: Grid reliability is an important priority for FERC, but opponents of renewable energy often use this “reliability” argument as excuse for dismissing or undervaluing renewable energy. What steps will you take to ensure that FERC can protect the reliability of the grid while also transforming our energy system?

Answer: The nation's resource fuel mix is changing. One component of this transition is identifying the types and levels of essential reliability services needed for reliable operation of the grid.

If confirmed, I will work with my colleagues to address whether and how renewable energy resources can and should provide essential reliability services, where technically feasible.

Question 16: Are reforms needed to the wholesale market structures to support distributed energy resources? If not, do you commit to ensuring that wholesale markets continue to support distributed energy resources? If so, what could be done to ensure wholesale markets better support distributed energy resources?

Answer: I understand that FERC has taken steps to remove barriers to the participation of resources, such as distributed generation, in the wholesale markets. For example, late last year, FERC issued a Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators proposed to address such barriers by providing a way by which distributed energy resource aggregators can participate in the organized wholesale electric markets. If confirmed, I look forward to reviewing the comments the Commission received in response to the proposal and addressing this issue with my colleagues.

Question 17: If confirmed, what steps will you take to move the American grid to a distributed, interconnected system?

Answer: The Commission issued a Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators in November 2016. In this Notice of Proposed Rulemaking, the Commission proposed to remove barriers to the participation of aggregations of distributed energy resources in the organized wholesale electric markets. If confirmed, I look forward to reviewing this record with my colleagues.

Question 18: If confirmed, will you support the development of large and small-scale storage, which will make our grid more resilient and encourage the buildout of renewable energy technology?

Answer: I believe that the nation should be able to rely on all forms of energy resources, which includes renewable and electric storage resources. I understand that the Commission is currently exploring potential barriers to the participation of electric storage resources in the organized wholesale electric markets. In fact, the Commission issued a Notice of Proposed Rulemaking in November 2016 that proposed to remove barriers to the participation of electric storage resources and distributed energy resource aggregations in the organized wholesale electric markets. If confirmed, I look forward to addressing this issue with my colleagues.

Question 19: Do you see a role for FERC in encouraging ancillary and reliability services markets to ensure all generators can compete to provide services to maintain grid reliability and get compensated for those services?

Answer: FERC has identified ancillary services that are necessary to maintain reliable operation of the grid. As our nation's energy fuel mix changes, we need to identify the types and levels of essential reliability services needed for reliable operation. In both of these contexts, offering

opportunities for resources that are technically capable of providing these services to do so can benefit consumers.

Question 20: The 2017 Infrastructure Report Card produced by the American Society of Civil Engineers rates our nation's energy infrastructure as a D+. Most electric transmission and distribution infrastructure was built in the 1950s and 1960s with a 50-year life expectancy and the over 640,000 miles of backbone transmission infrastructure is at full capacity. How will you facilitate the transmission infrastructure investment needed to modernize and expand our grid, particularly on an interstate basis?

Answer: There are several ways in which FERC can promote investment in the transmission infrastructure needed to maintain and modernize our grid. For example, the transmission rates that FERC approves include a return on equity and, where appropriate, may include incentives consistent with the direction of Congress in the Energy Policy Act of 2005. FERC can use these ratemaking tools to promote investment, while also ensuring that rates are just and reasonable. In addition, FERC has spurred development of regional transmission planning processes that are intended to identify and then remove barriers to development of more efficient or cost-effective transmission solutions.

Question 21: The Public Utility Regulatory Policy Act (PURPA) allows industrial companies to build and operate combined heat and power (CHP) and waste heat to power (WHP) facilities that can simultaneously produce economical steam and electricity with energy efficiencies up to 80 percent. Do you support maintaining PURPA as currently enacted?

Answer: Whether to maintain PURPA as currently enacted is a matter for Congress.

Supporting the policy goals of individual states

Question 22: Given your stated dedication to state rights to dictate in-state energy policies, how will you ensure that states retain control of policies that incentivize distributed generation?

Answer: I appreciate that states and the Commission need to be respectful of each other's boundaries under the law. Late last year, FERC issued a Notice of Proposed Rulemaking that would govern the participation of aggregated distributed resources in the organized wholesale markets. The Commission proposed to require coordination with the operation of the distribution system. Additionally, FERC recently held a technical conference with the objective of exploring how FERC-jurisdictional wholesale electricity markets can select resources of interest to state policy makers. These resources can include distributed generation incentivized and controlled by the states. If confirmed, I look forward to working with my colleagues to address these important issues.

Question 23: Approximately 30 states have passed renewable portfolio standards. States are enacting these policies for a wide variety of reasons including fuel diversity, environmental benefits, and economic development. If confirmed, how would you act to protect states' rights to decide their own energy policy?

Answer: States have authority to make resource decisions within their individual states. At times, those state policy decisions potentially interact with FERC-jurisdictional wholesale electricity markets. FERC's role is to ensure that wholesale electricity rates remain just and reasonable. I appreciate that states and the Commission need to be respectful of each other's boundaries under the law. Thus, I will be respectful of state boundaries while carrying out my duties as a FERC commissioner, if confirmed.

Question 24: While recognizing that FERC must place a premium on system reliability, many states have established aggressive energy policy goals. Vermont, for instance, is committed to reducing greenhouse gas emissions by 90% by 2050. Should you be confirmed, what steps will you take to give more weight to the policy goals of individual states?

Answer: If I am confirmed, I will make every effort to balance FERC's responsibility to ensure that the reliability of the bulk electric system is maintained and wholesale electricity rates are just and reasonable with the states' energy policy goals. As you may be aware, FERC recently held a technical conference to address these issues, and, if confirmed I look forward to working with my colleagues to review the record in that proceeding.

Stakeholder influence and FERC management

Question 25: What specific issues in FERC regulation of energy markets cause you concern?

Answer: The U.S. has one of the most reliable and affordable energy systems in the world. The system functions due to a high degree of coordination and strong markets. Should I be confirmed, I will work to ensure that there is strong oversight at the Commission to keep the markets properly functioning.

Question 26: If confirmed, how will you work to prevent undue influence on FERC by the fossil fuel industry?

Answer: I will not be unduly influenced by any group nor will I pre-judge any action that could come before me should I be confirmed to the Commission. FERC is an independent agency and I will take that independence seriously.

Question 27: As a result of the Enron scandal, Congress changed FERC's enforcement and civil penalty authority under the Energy Policy Act of 2005. What lessons does the Enron scandal still have for FERC?

Answer: The Enron scandal demonstrated that as markets evolved, FERC needed to engage in strong oversight and to be able to deter market manipulation through surveillance, investigations, and appropriate penalties. The Energy Policy Act of 2005 expanded FERC's enforcement authority, and since that time, FERC has greatly enhanced its corresponding capabilities. If confirmed, I look forward to working with my colleagues to assure that the enforcement program continues to improve.

Question 28: One of FERC's most important responsibilities is to investigate and enforce against market manipulation. Is FERC devoting adequate resources to these enforcement activities? Are the fines sufficient? If confirmed, what steps will you take to sustain and improve on FERC's enforcement capacity and success?

Answer: I understand that FERC has provided significant resources to its enforcement activities and, if confirmed, I will work with my colleagues to ensure that the enforcement program continues to receive adequate resources to carry out its responsibilities.

Question 29: After the 2003 electricity blackout, Congress included federal backstop siting provisions for interstate transmission lines in the Energy Policy Act of 2005. These included Section 1221 for National Interest Electric Transmission Corridors, which has never been implemented effectively. Would you support FERC taking on the responsibilities of the corridor designation authority if the Department of Energy was willing to delegate its role to FERC, which would consolidate the designation authority with the backstop siting authority FERC already has under the Energy Policy Act?

Answer: While I cannot speak for the Department of Energy and whether it would want to delegate this role to the Commission, I would expect that, if confirmed, I would take action consistent with whatever authority is granted to the Commission. If confirmed, I would address with my colleagues and, as appropriate, the Department of Energy, the best way to implement the Commission's role with respect to federal backstop transmission siting authority.

Question 30: FERC is incredibly complicated, and the barrier to entry for someone to simply understand FERC proceedings, much less to participate, is extremely high. Stakeholders with considerable financial resources can participate, but everyone else is effectively excluded. How can FERC do a better job of ensuring all interested parties can meaningfully participate in FERC processes?

Answer: I understand the importance of FERC's proceedings being transparent and accessible. I support FERC's efforts to promote accessibility.

Question 31: If confirmed, would you support the creation of a "consumer advocate" office at FERC?

Answer: If confirmed, I will most certainly consider the issue.

FERC abuses of power in reviewing and approving pipeline infrastructure

Question 32: While instilling important powers in the federal government, the Clean Water Act also ensures the protection and respect of states' rights. Section 401 of the Act explicitly states that no [federal] license or permit shall be granted until the certification required by this section has been granted or waived. Similarly, the U.S. Supreme Court has said Section 401 requires States to provide a water quality certification before a federal license or permit can be issued and without [Section 401] certification, FERC lacks authority to issue a license.

Given the language of the Clean Water Act and its interpretation by the Courts, do you think it appropriate that FERC is routinely issuing its Certificates of Public Convenience and Necessity for pipeline projects prior to all affected states rendering their decisions on Section 401 certification? If confirmed, will you commit to ensuring all relevant state level permits are granted prior to issuing a Certificate of Public Convenience and Necessity for any pipeline project?

Answer: It is my understanding that it has been Commission policy to issue conditional certificates of public convenience and necessity for natural gas pipeline projects, and that those certificates preclude natural gas companies from commencing construction until they have obtained all necessary authorizations under federal law, including Clean Water Act certification. I also understand that the U.S. Court of Appeals for the District of Columbia Circuit recently held that a certificate conditioned on the receipt of state water quality certification did not authorize a discharge into the navigable waters of the United States and so did not violate the Clean Water Act. If confirmed, I will work with my colleagues to ensure that all Commission decisions regarding natural gas pipeline projects are consistent with law.

Question 33: Under federal law, a private party is not allowed to legally challenge FERC approval of a pipeline project until they have first submitted a rehearing request to FERC, and FERC has affirmatively granted or denied that request. Rather than do one or the other, FERC's practice has been to issue a tolling order in response to such requests, which puts the request under further consideration. The result is that communities are put into legal limbo, unable to challenge the FERC decision until a final grant or denial is issued from the agency. Routinely FERC leaves people in that legal limbo for months, and sometimes over a year, while it allows the applicant to exercise the power of eminent domain and advance construction.

Do you see the use of tolling orders as an abuse of power by FERC? If confirmed, will you commit to either affirmatively grant or deny a rehearing request?

Answer: Congress gave FERC 30 days under the NGA and the FPA to address rehearing requests filed with FERC. I understand that the courts have upheld FERC's use of tolling orders. I appreciate that in some instances this process places a burden on those affected by a FERC order. I cannot and will not prejudge how I will act on rehearing requests. However, if confirmed, I would consider with my colleagues whether tolling orders have been used too frequently and, if so, what reforms are necessary. I also commit to work to ensure the FERC's processes on filings are as efficient as possible.

Future of nuclear power

Question 34: What do you envision as the future of nuclear power?

Answer: I believe that the nation should rely on all forms of energy resources, which includes nuclear energy. I believe it is important to maintain America's leadership on nuclear energy and a path for people who are relatively early on in careers in energy to have options for meaningful work in the nuclear sector. I am also aware that the future economic viability of these resources is in question. For example, the relatively low cost of natural gas and the emergence of new

technologies has helped drive down energy prices and revenues. In addition, state and federal policies that impose new environmental requirements and seek to procure specific resource types have challenged nuclear resources.

FERC policies should focus on ensuring electric markets that promote the delivery of reliable power in a manner that is nondiscriminatory and resource-neutral, resulting in efficient price signals that market participants can rely on to make investment decisions.

In June 2014 in Docket No. AD14-14, FERC initiated a proceeding to evaluate issues regarding price formation in the energy and ancillary services markets operated by RTOs/ISOs. This ongoing effort strives to improve the accuracy of energy prices for all resources, including nuclear. Also, the Commission has recently held a technical conference regarding state policies and wholesale markets that may inform the Commission on this issue. If confirmed, I look forward to reviewing these matters with my colleagues.

Question 35: What do you believe is the proper role of FERC in the future direction of nuclear power in the United States?

Answer: Please see my response to your Question 34 above.

Question 36: Do you think any market reforms are needed to support the future direction of nuclear power in the United States?

Answer: Please see my response to your Question 35 above.

IMAPP and regional initiatives

Question 37: New England has a regional Independent System Operator (ISO), and over the past several years consumer costs have skyrocketed as the ISO has implemented and tweaked its forward capacity market. In the regional process known as IMAPP – integrating markets and public policy – the ISO and FERC are beginning to acknowledge these administrative markets are in conflict with some of the objectives states have with regard to energy policy.

If confirmed, would you support efforts, such as in New England, to develop fixes to wholesale markets to better implement state policy goals in wholesale markets?

Answer: I understand that this is an issue that the Commission is focusing on through a recent technical conference and follow-up request for post-technical conference comments on the interplay of state policy goals and the wholesale energy and capacity markets. If confirmed, I look forward to addressing this issue with my colleagues.

Question 38: Energy markets do not accurately reflect environmental costs, including the social costs of carbon pollution. Do you believe that FERC and wholesale market operators should continue to explore how to better integrate the real cost of carbon pollution into our energy markets?

Answer: FERC's policies are resource and fuel neutral and FERC develops market rules with the intent of encouraging competition. Nevertheless FERC has developed a record in a recent technical conference in order to explore ways to accommodate state policy efforts while retaining competitive market frameworks.

Question 39: Are you open to allowing ISO-New England to walk back from the capacity market model and return to a structure that allows load-serving entities to meet their needs through bilateral contracts with a residual market for capacity not otherwise procured through such bilateral contracts?

If confirmed, will you commit to just and reasonable rates for consumers, not just for market participants?

Answer: I have and will maintain an unwavering commitment to ensuring the rates are just and reasonable. I am mindful that the responsibility of the Commission is to ensure that rates are just and reasonable, independent of the mechanism used to satisfy resource adequacy obligations. I am not aware of any ongoing efforts from ISO-New England to abandon its current capacity market as a tool to ensure resource adequacy in the region. I appreciate that there are different approaches to satisfying resource adequacy obligations in various regions of the country.

Question 40: Earlier this month, FERC held a technical conference to examine how to better incorporate states' environmental policy objectives into wholesale markets. Stakeholders are working to address challenges in these markets, particularly as it relates to price formation like carbon pricing. More active leadership from FERC, however, may be necessary to direct wholesale market operators to develop solutions to address these price formation challenges.

If confirmed, would you help FERC take a more active role to assist state and market operator efforts to resolve price formation issues associated with states' environmental policies?

Answer: I am reluctant to speculate what decisions may come out of the recent technical conference; if confirmed, I look forward to taking a role with my colleagues in addressing the issues explored at the technical conference regarding the interplay between state policy goals and wholesale markets.

Question 41: Do you think there are ways to account for environmental costs in price algorithms that appropriately value the benefits of carbon free generation?

Answer: Theoretically, yes.

Question 42: New England is making considerable progress implementing renewable portfolio standards, renewable energy standards, and the Regional Greenhouse Gas Initiative. These reforms will be an enduring aspect of the region's energy strategy.

If confirmed, will you commit to work with ISO-New England to ensure that wholesale market rules complement state policies and regional agreements?

Answer: Yes, consistent with the obligation that, if confirmed, I will have as a Commissioner to treat all parties fairly and make decisions based on the record. If confirmed, I also look forward to addressing these issues with my colleagues.

Forward capacity auctions

Question 43: The New England region saw considerable price increases in the region's forward capacity auctions (FCAs) in 2014. In recent auctions, costs have come down, while the region has been able to secure sufficient resources to maintain system reliability. Part of the reason why auction prices came down is because ISO-New England included more renewable energy in its installed capacity requirement (ICR). ISO-New England has continued to improve its inclusion of renewable energy in the ICR calculation, but could do better.

How can ISO-New England's consideration of energy, efficiency, renewable generation, and improved metrics in the forward capacity auctions that value the benefits of carbon-free generation help reduce system costs and improve system reliability?

Answer: I am aware that in recognition of certain public policy initiatives, ISO New England recently prioritized the modeling of behind the meter renewable resources in making adjustments to the ICR. I understand the importance of reducing system costs and ensuring reliability. Further, I recognize efforts by independent system operators like ISO New England to accommodate efforts by the states to promote certain public policy initiatives. As noted above, this was the subject of a recent Commission technical conference.

Question 44: Carbon-free generation currently faces a large barrier for bidding into the FCAs because of upfront costs. If confirmed, will you commit to working with our ISOs to continue reducing the barriers to including more renewables into the ICR and for bidding into our energy auctions?

Answer: Please see my response to your Question 42 above.

Hydro relicensing

Question 45: As states implement policies to address climate change it is becoming increasingly clear that hydroelectric generation will continue to be a central component of the U.S. energy portfolio. Yet the licensing process for hydroelectric facilities can last a decade or more, cost hundreds of thousands of dollars, and often results in decreased electric production due to water quality concerns. What do you see as steps FERC can take to streamline this process, and how would you ensure state and federal environmental and water quality concerns are maintained?

Answer: As I noted at the hearing, I believe that the nation should rely on all forms of resources to meet its needs, including hydroelectric resources. I understand, however, that the hydropower licensing process can be lengthy and expensive, and that water quality issues are often a major concern. If confirmed, I will look forward to addressing with my colleagues the issue of streamlining the licensing process while satisfying federal and state water quality concerns.

Natural gas infrastructure

Question 46: Natural gas and pipeline advocates vocally hailed your nomination as a sign that future and pending fossil fuel infrastructure will be rubber stamped on your watch. What will you do to demonstrate your independence from fossil fuel special interest groups?

Answer: I will not be unduly influenced by any group nor will I pre-judge any action that could come before me should I be confirmed to the Commission. FERC is an independent agency and I will take that independence seriously.

Question 47: How will you evaluate climate impacts during the review of applications for the construction and operation of natural gas pipelines?

Answer: It is my understanding that the Commission's environmental analysis for each pipeline project includes the greenhouse gas emissions associated with the construction and operation of that project, as well as impacts potentially resulting from climate change over the region in which the project is located. If confirmed, I look forward to working with my colleagues in determining how information regarding climate impacts is addressed appropriately in such proceedings.

The Holman Rule

Question 48: What is your position on the Holman Rule, which allows any member of Congress to propose amending an appropriations bill to single out a government employee or cut a specific program?

Answer: I have no direct experience with the Holman Rule. If it becomes an issue for the Commission and I am confirmed, I will evaluate the matter with my colleagues.

Question 49: If confirmed, will you support or oppose Congressional passage of an amendment under the Holman Rule that targets one of your employees?

Answer: Please see my response to your Question 48 above.

Question 50: If confirmed, do you believe that you will be better able to recruit and retain top talent at FERC if Congress is able to individually target employees based on political criteria?

Answer: Please see my response to your Question 48 above.

Question 51: Do you support or oppose Congress targeting and altering the salaries of individuals at FERC?

Answer: Please see my response to your Question 48 above.

Question 52: How would you describe the division of responsibility and authority between Congress and FERC on agency personnel issues?

Answer: Please see my response to your Question 48 above.

Questions from Senator Al Franken

Question 1: Minnesota and other states have renewable portfolio standards that drive the transition to clean energy. Do you believe states should be able to implement these kinds of policies without federal interference?

Answer: States have jurisdiction over the resource mix in their individual states, but the Commission also has responsibilities under the Federal Power Act. I appreciate the importance of these issues to states. I understand the Commission recently held a technical conference with the objective of further exploring how the competitive wholesale markets can incorporate resources promoted by state energy policies while ensuring that wholesale electricity rates remain just and reasonable and that the reliability of the bulk power system is maintained. If confirmed, I look forward to working with my colleagues on this matter.

Question 2: As Senator Cortez Masto mentioned in the hearing, late last year, FERC started a process to “remove barriers to the participation of electric storage resources and distributed energy resource aggregations in the capacity, energy, and ancillary service markets.”

- a. What role do you see energy storage playing in the future in the organized wholesale electricity markets and transmission system?
- b. And how can FERC help ensure that energy storage is receiving proper compensation for the multiple benefits it provides to the grid?

Answer: I believe that the wholesale electricity markets should offer opportunities for all types of resources that are technically capable of providing needed services, which includes storage resources. For example, FERC’s price formation effort has identified opportunities to improve energy market price signals. Actions like a change in the settlement interval and the requirement to trigger shortage pricing any time a physical shortage occurs should provide more accurate price signals for flexible resources like energy storage. Also, the Commission is currently considering a proposal to eliminate barriers to the participation of electric storage resources in the organized markets. In addition, in a recent policy statement, the Commission provided clarification and guidance on how storage resources could be compensated for both market- and cost-based services in the organized markets. If confirmed, I look forward to addressing these issues with my colleagues.

I understand that the Commission has taken several actions to ensure adequate compensation for resources, including electric storage resources. For example, in Order No. 755, FERC provided for compensation of fast-acting resources, such as storage, to provide frequency regulation service. Similarly, FERC’s price formation effort has identified opportunities to improve energy market price signals. Actions like a change in the settlement interval and the requirement to trigger shortage pricing any time a physical shortage occurs should provide more accurate price signals for flexible resources like energy storage. Further, in January, FERC issued a policy

statement providing guidance to storage resources seeking compensation for both cost-based and market-based services.

Question 3: FERC Order 1000 was intended to help identify such transmission needs and solicit competitive transmission projects by requiring regional transmission planning and interregional coordination.

- a. Do you support FERC order 1000?
- b. What are the barriers to interregional transmission lines and what can FERC do to remove those barriers?

Answer: I support the goals of Order 1000, which I understand to be to promote the identification of more efficient or cost-effective transmission facilities and to remove certain obstacles to the development of those facilities. In June 2016 the Commission convened a technical conference to discuss competitive transmission development. The technical conference proceeding has provided the Commission with a record that details various commenters' concerns with the interregional transmission coordination procedures currently in place, as well as their suggestions for supporting interregional transmission development. If confirmed, I look forward to reviewing this record and addressing this issue with my colleagues.

Question 4: A few years ago during the severe winter polar vortex, coal stockpiles at utilities in Minnesota repeatedly dropped to dangerously low levels, due to inadequate rail delivery of coal. At least four coal power plants in Minnesota were shut down, so that their stockpiles could be built back up before the cold winter months. And in the end, the cost of this unreliable rail service was passed on to the public, as they paid for the more expensive replacement power that was purchased to make up for lost generation. During this time period, I sent a letter to FERC highlighting my concerns about Minnesota utilities' low coal stockpiles, and asking FERC to work with all other stakeholders to find a solution to this ongoing issue.

- a. What do you think FERC should do to mitigate the problems with rail delivery issues, since these issues impact the electricity markets?
- b. Last Congress I introduced the Emergency Fuel Supply Coordination Act, which would require coordination among key federal agencies when a fuel emergency is declared. Do you think this coordination is a good idea, and in what ways could FERC support such an effort?

Answer: Although the Commission does not have authority over the shipment of coal over the nation's rail lines, if confirmed, I would be willing to meet with utilities or the rail regulators to assess what type of assistance the Commission may provide. I believe that coordination among key regulators is prudent when a fuel emergency is declared.

Question 5: Because of its low prices, more and more Americans are using natural gas, both in homes and in industry. And the DOE Energy Information Administration projects that use of natural gas will continue to grow. At the same time, the federal government has already issued

final authorizations for liquid natural gas export volumes of over 72 billion cubic feet per day—which is equal to about 96 percent of U.S. demand.

Explain to me how increasing exports of domestic natural gas won't drive up the price Americans pay to power their factories and heat their homes. Does FERC have a role to play here in making sure we are not unnecessarily increasing the cost of energy for Americans?

Answer: Jurisdiction over LNG exports is shared by DOE and the Commission. The Commission is responsible for the physical LNG export facilities under its National Environmental Policy Act responsibilities while DOE is responsible for authorizing the import or export of the natural gas commodity.

Question 6: Last month, Secretary Perry ordered a 60-day review of U.S. electricity policy to determine whether coal and nuclear plants are being “unfairly” pushed off the grid. He suggested that renewable resources—like wind and solar—were threatening grid reliability and that because of that, we need to prop up coal and nuclear plants. Since FERC is tasked with ensuring the reliability of the grid, do you share Secretary Perry’s concerns about increasing integration of renewables?

Answer: In fulfilling its responsibilities under the Federal Power Act, FERC works closely with the North American Electric Reliability Corporation, which FERC certified as the Electric Reliability Organization, as well as with the industry and other interested stakeholders. As the nation’s energy resource fuel mix continues to change, it is important to maintain our commitment to ensuring grid reliability.

Question 7: As you know, FERC’s approval process for natural gas pipelines has gained national attention. Former Chairman Norman Bay released a statement on his last day recognizing the increased public interest surrounding the approval process and encouraging the agency to change how it determines whether approving a pipeline is within the national interest. Traditionally, FERC has relied on a contract with potential shippers to show market demand and therefore demonstrate that a project is in the national interest. But, this is fairly myopic view and Mr. Bay suggests that more comprehensive cost-benefit analysis may be necessary. Mr. Bay also recommended that FERC consider the environmental impacts of increasing gas production allowed by pipeline construction as well as an assessment of lifecycle greenhouse gas emissions. Do you agree with the former Chairman’s assessment? If not, why not, and if so, what changes would you suggest?

Answer: I recognize the importance of natural gas pipeline infrastructure to meeting the energy needs of our nation’s consumers. The Natural Gas Act requires the Commission to determine that proposed pipeline projects are consistent with the public convenience and necessity. If confirmed, I look forward to reviewing the Commission’s policies and processes for considering pipeline applications with my colleagues to improve their efficiency while ensuring that all relevant factors are appropriately considered

Question 8: Senator Shaheen and I recently reintroduced legislation, the Public Engagement at FERC Act (S. 1240), that will improve public involvement at the FERC and facilitate advocacy

at the agency on behalf of residential and small commercial energy consumers. Specifically, the Public Engagement at FERC Act would build off existing language in the Public Utility Regulatory Policy Act (PURPA) and establish an Office of Public Participation and Consumer Advocacy to ensure the public has a strong role in shaping our nation's energy future. It is important that anyone who assumes the role of a FERC Commissioner understands how their decisions are directly or even indirectly impacting private citizens. When FERC evaluates whether a project or agreement is "in the public interest" it is vital that the Commission indeed consult the public.

- a. Do you agree that public engagement should be prioritized during the various proceedings administered by FERC?
- b. If confirmed, what steps will you take to make commission proceedings and processes more accessible to the public?
- c. While I'm not asking you to weigh in on the legislation directly, do you agree with allowing more public participation in the agency through the creations of a dedicated office?

Answer: FERC's procedures provide several means for members of the public, whether acting individually or as a group, to raise their concerns with FERC. They may intervene and actively participate in FERC proceedings. They also may file comments on rules and regulations that FERC proposes in Notices of Proposed Rulemakings. State utility commissions, who seek to protect the interests of retail and residential customers, regularly intervene directly in FERC cases and comment on FERC's proposed rules and regulations. If confirmed, I will work with my colleagues to see whether there are further steps FERC can take to make its proceedings and processes more accessible to the public.

Question 9: In 2006, FERC started requiring wholesale generators to file Form 556 Certificate of Qualifying Facility (QF) Status for a small power production facility. I'm concerned that some small, community wind facilities across the country may have missed this change. These projects went through an extensive study process to facilitate interconnection of their wind projects with the transmission grid. These interconnections were ultimately approved by FERC as exempt wholesale generators and have been operating safely. However, in 2006 FERC established a filing requirement for all facilities larger than 1MW, but some missed this change. The filing requires announcing the total electricity generated by the QF.

In one case, a company MinWind failed to start filing with FERC, and subsequently sought a waiver from FERC for the Form 556 filing arguing that they did not know about the rule. But, the waiver was denied and the company was assessed a substantial repayment obligation equivalent to the interest that they have been unfairly accruing since 2006. The amount was large enough that they were forced to file for bankruptcy. While I do not know the specifics of this case, in general, this seems like an onerous requirement that if not handled appropriately could drive more companies into bankruptcy. Will you commit to working with me to find a solution to this issue?

Answer: I understand the necessity of providing adequate notice of regulatory requirements to industry and having appropriate remedies for failures to comply. If confirmed, I would be pleased to work with you, and I look forward to discussing this issue with my colleagues.

Question from Senator Steve Daines

Question: FERC has a role in ensuring the grid is secure. Will you keep in mind impacts to baseload sources as you make decisions?

Answer: Yes.

Questions from Senator Joe Manchin III

Question 1: West Virginia's existing installed capacity is 90% coal (12,584 MW). The remainder is natural gas, hydro, wind and a little bit of oil. Overall, in PJM, coal represents 34% of capacity and natural gas is slightly higher than that. The Energy Information Administration states that "West Virginia typically generates more electricity than it consumes. Although more than two-fifths of West Virginia households use electricity as their primary source for home heating, retail sales to all customers account for less than half of West Virginia's net electricity generation. As a result, West Virginia is a net supplier of electricity to the regional grid. West Virginia is a leader in the nation in net interstate sales of electricity."

Do you believe that the regional grid (PJM specifically) can continue to operate without the contributions of West Virginia's fleet of power plants?

Answer: As I stated during my confirmation hearing, I believe that to ensure safe and reliable electricity we need fuel diversity. I also believe that FERC's responsibility to oversee grid reliability is critical. Maintaining fuel diversity in the context of wholesale electric markets that dispatch generation and other resources on a cost basis is a complex challenge. If confirmed I look forward to considering this issue with my colleagues.

Question 2: In 2011, FERC issued an Order – Number 1000 – which asserted agency jurisdiction over transmission planning in areas that were previously thought to be a state's responsibility. It's my understanding that – while intended to make transmission planning easier – it has bogged down the process more. Former FERC Commissioner Tony Clark expressed concern that "there is so much process built into Order 1000," that each step of that process "becomes an opportunity for litigation and delay." Andy Ott, the CEO of PJM, concluded that Order No. 1000 "was almost like a solution in search of a problem. ... It's actually creating more challenges to investment." Nick Brown, the CEO of SPP, stated that Order No. 1000 has "created more overhead and uncertainty at a time we didn't need more overhead in order to invest in transmission." We need transmission planning to work efficiently, and we need costs to be allocated where they belong.

Will you work with the Committee on ways to improve transmission planning and cost allocation?

Answer: If I am confirmed I will look forward to working with the Committee on matters of interest to them regarding these issues, as well as with my colleagues. After issuance of Order No. 1000, the Commission has continued to examine issues relating to transmission planning and cost allocation. I support this continued effort to make sure FERC policies are meeting their intended goals. For example, in June 2016, the Commission convened a technical conference on issues concerning competitive transmission development. Following the technical conference, the Commission requested post-technical conference comments on issues related to competitive transmission development, interregional transmission coordination, and regional transmission planning.

Question 3: Earlier this week, E&E news published an article regarding the cybersecurity challenges facing our natural gas infrastructure. They highlighted a five-year old attack on our nation's natural gas utilities which was perpetrated by Chinese hackers who were also members of that country's military. Gerry Cauley, President of the North American Electric Reliability Council (NERC) – a frequent witness before this committee stated that "Undercutting the gas supply is certainly a threat to the electric system." While NERC, utilities, and regional transmission operators (RTOs) like PJM are planning for multiple scenarios like extreme weather events (a repeat Polar Vortex for example), I'm also interested in your perspective on how FERC and DOE can further support natural gas utilities in their efforts to harden their systems not just against natural threats but against cyber threats.

Understanding that these energy stakeholders can't always pull back the curtain for us because of the threat of revealing too much to potential enemies, what more can DOE and FERC do to support natural gas pipeline operators in the face of these threats?

Answer: The intrusion campaign uncovered in 2012 underscores the importance of cybersecurity mitigation measures for the natural gas pipeline industry.

To this end, I understand that FERC assists states in better understanding cybersecurity threats to pipelines. For example, FERC has coordinated with other federal agencies to facilitate both unclassified and classified security briefings to state regulators.

I also understand that FERC assists to pipeline operators with identification and application of best practices for cybersecurity measures. As an example, FERC and Transportation Security Administration (TSA) staff have developed a joint, voluntary assessment program to conduct in-depth cybersecurity reviews of pipeline entities. As a further example, FERC has established a similar program with the US Coast Guard to review the cybersecurity of jurisdictional LNG terminals. I understand that TSA is reviewing its voluntary cybersecurity guidelines for pipelines and that FERC has offered to assist with that effort.

FERC also could explore whether, pursuant to its authority under the Natural Gas Act, further steps are appropriate to address concerns that the industry may have with respect to recovery of costs for cybersecurity measures.

Question 4: I think it's fair to say that everyone knows West Virginia as an energy exporting state. Our state's coal miners helped power this nation through war and into prosperity in the

second half of the last century. And we continue to produce energy for our neighbors. But, we are an all-of-the-above energy state, and I think it's important to note that we have some critical hydropower resources. Hydropower is the most prevalent form of renewable energy used today to generate electricity. While hydro in West Virginia is small, it is also growing. The Glen Ferris project on the Kanawha River powers about 4,500 households. The Hawks Nest project is a 102 megawatt plant on the New River. These plants' licenses will expire later this year. Then there's the New Martinsville Hydroelectric Plant - a 36 megawatt project in Wetzel County that produces enough power for a city seven times the size of New Martinsville which has a population of about 7,000. And, furthermore, it's my understanding that there are untapped opportunities for additional hydropower on the Ohio River. I'd even love to see a plant along the Hatfield-McCoy Trail. I also introduced a bill - S. 710 - which would help provide certainty to the Jennings-Randolph dam.

But, what is your understanding of what FERC can do to improve and expedite the relicensing of these renewable energy projects?

Answer: I am aware that the hydropower licensing process can be lengthy and complex. As a matter of law, decision making does not rest solely with the Commission, but also with other agencies that have mandatory conditioning authority not only under the Federal Power Act, but also under other statutes. If confirmed, I will look forward to addressing with my colleagues the issue of any changes to make the relicensing process more efficient.

Questions from Senator Lamar Alexander

Question 1: In the past five years, six nuclear reactors have shut down prematurely due in part to financial concerns. Analysts have warned dozens of additional nuclear reactors could potentially shut down over the next 10 years due to market challenges. New York and Illinois have taken steps to help keep the nuclear reactors within their borders operating. These states recognize the importance of reliable nuclear power, which provides 60% of our country's carbon-free electricity. What can the Federal Energy Regulatory Commission do to help keep existing nuclear reactors operating and preserve low-cost, reliable, and clean nuclear power for the United States?

Answer: Congress tasked FERC with ensuring that the rules that govern wholesale electric markets promote the delivery of reliable power in a manner that is nondiscriminatory and resource-neutral, resulting in efficient price signals that market participants can rely on to make investment decisions. I believe that all resources should be fairly compensated for the value they provide the system.

The Commission has some generic proceedings where these issues are being examined in greater detail with broad stakeholder input.

If confirmed, I look forward to working with my colleagues in evaluating the issues explored at the technical conference.

Question 2: The federal wind production tax credit (PTC) has been in place for twenty-five years and has been extended by Congress ten times. The most recent extension in 2015 will cost taxpayers more than \$20 billion over ten years. The wind PTC not only costs the taxpayers billions, it also distorts the price of electricity. The subsidy to Big Wind is so generous that, in some markets, wind producers can literally give their electricity away and still make a profit. This phenomenon is called negative pricing. What can the Federal Energy Regulatory Commission do to minimize the unfair impact that negative pricing has on reliable generation like coal, natural gas, and nuclear?

Answer: Generally, RTO/ISO market dispatch rules are designed to find the lowest cost of dispatching resources, based on their bids, to serve load while respecting transmission system limitations.

At the recent May 2017 technical conference on the interplay between state policy goals and wholesale markets, there was a suggestion that RTOs/ISOs explore whether negative pricing continues to meet the goals of finding the lowest cost of dispatching resources. If confirmed, I look forward to addressing these matters with my colleagues.

Questions from Senator John Hoeven

Question 1: Electric reliability is a critical issue, especially as it relates baseload power and ensuring our country has the assets needed to maintain low-cost electricity.

For example, the previous Administration's EPA has promulgated substantial new regulations on electricity producers that would have subjected them to unachievable mandates and artificial compliance schedules. Together, the EPA's unwarranted attempts to reduce emissions would have driven up electricity rates for customers and potentially compromise the reliability of our power grid.

In another example, the Aliso Canyon natural gas storage facility provides electricity for southern California. However, state regulators have shut down the facility and now the Energy Department has registered concerns about having a sufficient baseload for summer energy demand.

- How will you approach reliability issues going forward?
- How do fossil fuels play a role in ensuring electric reliability and baseload power?

Answer: I recognize the importance of FERC's responsibilities under the Federal Power Act with respect to the reliability of the bulk power system.

In fulfilling those responsibilities, FERC works closely with the North American Electric Reliability Corporation as well as with the industry and other interested stakeholders. In the midst of a transition in our nation's energy resource fuel mix, it is important to maintain our commitment to ensuring grid reliability. I believe that a resource portfolio that includes the use of fuels that support the provision of baseload power makes an important contribution toward that goal.

Question 2: In order to become truly North American energy secure, we need the infrastructure to deliver our energy resources from producers to consumers. I have sponsored the North American Energy Infrastructure Act that would require FERC to approve natural gas import or export applications to Canada or Mexico within 30 days of filing.

- What is your view on the increased need for energy infrastructure?
- What is FERC's role in ensuring adequate pipeline capacity?
- Do you support efforts to increase our energy infrastructure network with Canada and Mexico?

Answer: As I noted at the hearing, ensuring adequate infrastructure is important for the nation's economy. Having adequate infrastructure also best ensures that consumers have access to a variety of energy resources. The Commission is obligated to approve natural gas pipeline projects that are required by the public convenience and necessity, which may include facilities for the import or export of energy with our trading partners to the north and south.

Question 3: In North Dakota, rural electric co-ops ensure that over 350,000 consumers have access to reliable and affordable electricity. The Federal Power Act exempts rural electric co-ops from FERC jurisdiction and this statutory exemption contributes to the state's affordable electricity rates.

- Do you plan to adhere to the Federal Power Act and continue to exempt rural electric co-ops from FERC jurisdiction?

Answer: Electric cooperatives that receive a certain type of financing or that sell less than a certain amount of electricity per year are exempt from certain provisions of the Federal Power Act. If confirmed, I commit to adhere to the provisions in the Federal Power Act regarding jurisdiction over electric cooperatives.

Question 4: Two of the industries FERC regulates – electricity and natural gas – are growing closer together as gas increases its share in electricity markets. This ties together the reliability of natural gas supply and the reliability of electricity supply like never before. This makes it all the more important that gas pipelines get sited timely when they are needed and not get bogged down in environmental reviews that, in the name of being thorough, lose all common sense. We have had projects delayed, for example, by consideration of greenhouse gas emissions. Fortunately the guidance requiring consideration of GHGs was rescinded in April.

Both Congress and the Administration have made it plain in law and by executive action that they want infrastructure reviews to be accelerated.

- Will you work to ensure that gas infrastructure is sited promptly and not unnecessarily delayed by overly bureaucratic reviews?

Answer: Yes.

Questions from Senator Angus S. King, Jr.

Question 1: How do you view the relationship between state energy policies, such as Renewable Portfolio Standards, and the wholesale electricity markets? Do you believe there is a conflict present between state goals and the operation of those wholesale markets? How do you think that conflicts that arise can and should be addressed by FERC?

Answer: States have jurisdiction over the resource mix in their individual states but the Commission also has responsibilities under the Federal Power Act. I appreciate the importance of these issues to states. I understand the Commission recently held a technical conference with the objective of further exploring how the competitive wholesale markets can incorporate resources promoted by state energy policies while ensuring that wholesale electricity rates remain just and reasonable and that the reliability of the bulk power system is maintained. If confirmed, I look forward to working with my colleagues on this matter.

Question 2: Do you believe that the competitive wholesale electricity markets are adequately incentivizing the development of renewable energy? If not, what market mechanisms can be put into place to do so?

Answer: I understand that FERC rules that govern organized and bilateral wholesale electric markets are meant to promote the delivery of reliable power in a manner that is nondiscriminatory and resource-neutral, resulting in efficient price signals that market participants can rely on to make investment decisions.

The Commission must be aware of changes in the industry, including changes to the resource mix, state actions and technology developments, and then adapt to these developments in order to carry out its statutory responsibilities.

Question 3: Do you believe FERC has a role to play in supporting and helping to manage the increase of distributed energy resources connected to the grid? If so, what is that role?

Answer: FERC has a role in fostering resource neutral, non-discriminatory policies with respect to the wholesale markets. This would include removing barriers to the participation of resources, such as distributed energy resources, in the wholesale markets. For example, late last year, FERC issued a Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators proposed to address such barriers by providing a way by which distributed energy resource aggregators can participate in the organized wholesale electric markets. If confirmed, I look forward to reviewing the record developed in response to the proposal and addressing this issue with my colleagues.

Question 4: FERC has held that the costs of transmission infrastructure built to fulfill a reliability need can be recovered regionally from all beneficiaries. If a resource other than traditional transmission infrastructure, such as energy storage or a combination of other resources, is proposed and can meet the same reliability need, should the cost of that project be recovered in the same manner?

Answer: Through Order Nos. 890 and 1000, the Commission has allowed the consideration of those non-transmission alternatives in local and regional transmission planning processes. In other proceedings, the Commission also has recognized that resources other than traditional transmission infrastructure are capable of providing transmission service in certain circumstances, such that it may be appropriate to allocate costs of those resources through transmission rates. More recently, in January 2017, the Commission issued a policy statement to clarify its precedent and provide guidance on the ability of electric storage resources to provide services and seek to recover their costs through both cost-based and market-based rates concurrently. If confirmed, I will review these matters with my colleagues.

Question 5: New England currently pays by far the highest costs for transmission in all of the organized markets, and yet billions of dollars in additional investment in transmission will be needed in order to unlock new renewable resources in the region. What will you do to keep transmission costs under control for consumers in New England?

Answer: Investment in transmission is key to bringing about a diverse resource mix. Renewable resources are often located at a distance from consumers. It is my understanding that the Commission recently held a technical conference to consider issues related to the competitive transmission development processes that were established to comply with Order No. 1000, including the use of cost containment provisions, the relationship of competitive transmission development to transmission incentives, and other ratemaking issues. If confirmed, I look forward to addressing this issue with my colleagues.

Question from Senator Bill Cassidy

Question: If confirmed, one of your key responsibilities as a Commissioner will be to ensure grid reliability. I want to bring your attention to the worrisome decision by the California Public Utilities Commission regarding the shutdown of the Alison Canyon underground gas storage facility. The Department of Energy and SoCalGas have both written letters to the commission warning of possible blackouts and supply disruptions due to the Aliso Canyon decision, which I would like to submit for the record. This appears to be a significant problem waiting to happen.

Will you commit to studying this issue and ensure that the FERC does everything in their authority to protect the reliability of the grid for potentially effected consumers all along the transmission line?

Answer: Yes. I agree that grid reliability is a critical aspect of the Commission's mission. If confirmed, I will work with my colleagues to best ensure the reliability of the grid.

Questions from Senator Tammy Duckworth

Question 1: With respect to concerns for our aging energy infrastructure, how do you view the need to balance what consumers can afford with the tremendous expense to upgrade existing facilities and/or to add new infrastructure?

Answer: I agree that the Commission has a statutory responsibility to both promote adequate investment in needed energy infrastructure and ensure that the rates subject to the Commission's jurisdiction are just and reasonable. The development of a record that reflects a wide range of perspectives, including those of consumers, is essential to the Commission's ability to strike the right balance between these critical interests.

Question 2: Just and reasonable cost allocations for electric transmission projects have been a subject for discussion at FERC. As I'm sure you are aware, FERC Order 1000 established the "roughly commensurate" criteria for costs and benefits of transmission. How would you define "roughly commensurate"? Is that a standard that you believe is appropriate for all infrastructure costs?

Answer: My understanding is that, drawing upon a term coined by the U.S. Court of Appeals for the Seventh Circuit, the Commission in Order No. 1000 required that the costs of new regional or inter-regional transmission facilities be allocated in a manner that is at least "roughly commensurate" with their benefits. In Order No. 1000, the Commission also required that the costs of such transmission facilities should not be allocated involuntarily to entities that receive no benefit from those transmission facilities. While I cannot now say whether this standard may be appropriate for all types of infrastructure costs, I support the general principle.

Question 3: Regional Transmission Organizations (or RTOs/ISOs) typically build or upgrade new infrastructure to remedy reliability violations. What role, in your view, should cost play in the selection of transmission projects under order 1000 and as planned by RTOs?

Answer: Order No. 1000, which the Commission issued in 2011, set forth new requirements with respect to transmission planning and cost allocation. The Order was intended to promote the identification of more efficient or cost-effective transmission facilities and to remove certain obstacles to the development of those facilities. Regional Transmission Organizations and Independent System Operators must consider costs in their regional transmission planning processes to comply with the requirements of Order No. 1000.

The Commission has continued to examine issues related to interregional transmission development. I support this continued effort to make sure FERC policies are meeting their intended goals. In June 2016, the Commission convened a technical conference addressing competitive transmission development, including interregional transmission coordination. Several speakers at the technical conference, as well as some FERC Commissioners, questioned whether the Commission should do more to facilitate interregional transmission development. After the technical conference, the Commission requested post-technical conference comments on several issues related to interregional transmission development. If confirmed, I look forward to reviewing the record and addressing this issue with my colleagues.

Question 4: FERC Order 1000 provided opportunity for competitive transmission investments by independent transmission companies. What, if any, transmission investments do you feel should be exempted from the order 1000 competitive transmission process?

Answer: Under Order No. 1000, many transmission projects are not subject to competitive transmission development processes. Order No. 1000 only requires that transmission facilities selected in the regional transmission plan for purposes of cost allocation are subject to competitive transmission development processes. In addition, Order No. 1000 did not require that local transmission facilities, which are defined as transmission facilities located solely within a public utility transmission provider's retail distribution service territory or footprint that are not selected in the regional transmission plan for purposes of cost allocation, be subject to competitive transmission development processes. The Commission also stated in Order No. 1000 that its reforms were not intended to affect the right of an incumbent transmission provider to build, own, and recover costs for upgrades to its own transmission facilities, regardless of whether an upgrade has been selected in the regional transmission plan for purposes of cost allocation. In later orders, the Commission further allowed certain transmission planning regions to exempt from their competitive transmission development processes transmission facilities needed in the near-term to address reliability concerns.

More recently, the Commission convened a technical conference in June 2016 on competitive transmission development, at which the speakers discussed exemptions from the competitive transmission development process. Following the technical conference, the Commission issued a post-technical conference request for comments, which included questions on whether the Commission should broaden or narrow the type of transmission facilities that must be selected through competitive transmission development processes. If confirmed, I look forward to reviewing this record and addressing this issue with my colleagues.

Question 5: FERC's use of RTOs to plan and manage competitive markets has recently come under fire from various public interest groups. They point out that public interest has an extremely limited voice in RTO Stakeholder discussions and RTO actions taken behind closed doors seem to be condoned by FERC. Do you believe this is a valid concern and if so how would you address it? If not, where and how do you see public interest being considered at FERC?

Answer: I understand that FERC has worked to maintain the transparency and responsiveness of RTO and ISO processes over the years. I recognize the importance of these efforts and the need for all stakeholders to be heard. If confirmed, I look forward to working with my colleagues on these issues.

Question 6: What role should FERC play in any attempts to work toward a cleaner environment?

Answer: FERC's policies ensure that the rules that govern organized and bilateral wholesale electric markets promote the delivery of reliable power in a manner that is nondiscriminatory and resource-neutral, resulting in efficient price signals that market participants can rely on to make investment decisions.

The Commission must be aware of changes in the industry, including changes to the resource mix, state actions and technology developments, and then adapt to these developments in order to carry out our statutory responsibilities.

If confirmed, I look forward to working with my colleagues on these issues.

Question 7: The recent “Wannacry” ransomware incident has once again brought cybersecurity to the forefront. Should FERC do more to ensure best practices are shared among utilities regarding detecting and preventing cybersecurity threats? How much information should be shared with state regulators? What role do you see at FERC for cybersecurity issues?

Answer: My understanding is that FERC coordinates with federal and state government partners, and with industry stakeholders, to address cybersecurity issues. Through these efforts, FERC provides leadership, expertise, and assistance in identifying, communicating, and seeking comprehensive solutions to significant potential cybersecurity risks to FERC-jurisdictional energy infrastructure.

For example, FERC is promoting identification and use of best practices in this area. FERC conducts analysis and outreach to share threat information and best practices for defensive and recovery measures to help mitigate risk. These efforts complement other programs at FERC such as the mandatory reliability standards that FERC has adopted to protect the bulk power system from cybersecurity threats.

Recognizing both the interconnected nature of utility systems and the nature of cybersecurity threats, I believe it is also valuable for FERC to work closely with states to share threat information and help implement best practices. It is my understanding that FERC assists states to better understand the cybersecurity threats to pipelines, such as by coordinating with other federal agencies to facilitate both unclassified and classified security briefings to state regulators.

FERC also has a seat at the table of the Electricity Subsector Coordinating Council, a group that includes governmental leaders and CEOs from utilities who work together to prepare for large-scale events to coordinate the response.

Question 8: States that are split into two RTOs are encountering issues where generating resources have been separated from the loads that they were built or contracted to serve. How should proximity to resources, actual power flows, and pre-existing transmission rights be considered in RTO modeling?

Answer: I cannot comment on these matters because the Commission has several open proceedings regarding inter-RTO coordination. If confirmed, I look forward to reviewing these matters with my colleagues.

Questions from Senator Rob Portman

Question 1: During the 114th Congress, Sen. McCaskill and I co-sponsored legislation that became Title 41 of the FAST Act, 42 U.S.C. § 4370m (“FAST-41”). FAST-41 created a new process to streamline permitting for significant infrastructure projects designated as “covered projects.” Would it be beneficial for the FERC permitting and licensing process to operate within this new regulatory construct?

Answer: I am aware that the Commission designated both a Councilmember and a Chief Environmental Review and Permitting Officer to support the Federal Permitting Improvement Steering Council established by the FAST Act. In addition, the Commission has the greatest number of projects listed on the inventory of any federal agency. If confirmed, I look forward to working with my colleagues to ensure that up-to-date permitting information is presented to the public, as well as in establishing how independent agencies can effectively interact with the other permitting agencies subject to FAST-41.

Question 2: Do you support designating FERC as the lead agency in the licensing and permitting process, including the ability to set schedules for the review, comment, and permitting activities of other federal agencies?

Answer: As provided by Congress in the Energy Policy Act of 2005 and in the Federal Power Act, the Commission is the lead federal agency responsible for setting the environmental review schedule for all agencies acting on a federal permit. However, the Commission's scheduling authority does not override permit schedules, or agency processes otherwise established by law. If confirmed, I look forward to working with my colleagues to determine how the Commission can best coordinate the activities of multiple agencies that are subject to different statutes.

Question 3: Do you believe the current hydropower licensing process is well functioning? If not, what changes do you recommend?

Answer: I am aware that the hydropower licensing process is complex and that, as a matter of law, decision making does not rest solely with the Commission, but also with other agencies that have mandatory conditioning authority not only under the Federal Power Act, but also under other statutes. If confirmed, I will look forward to addressing the licensing process with my colleagues.

Question 4: What are your views on how RTO-administered capacity markets are working? Specifically, are these markets supporting the development of a diverse array of electric generating facilities in light of past and pending coal plant retirements, while minimizing adverse impacts on consumers? If not, what steps would you take to improve or modify them?

Answer: I believe that RTO-administered capacity markets have largely achieved their objectives in procuring adequate resources to meet their reliability criteria. However, changes may still be needed to support the development of electric generating facilities in light of past and pending coal plant retirements. Two of FERC's core responsibilities are to ensure that the reliability of the bulk electric system is maintained and that wholesale electricity rates are just and reasonable. If confirmed, I will work with my colleagues to ensure that we meet these core responsibilities when evaluating RTO capacity markets.

Question 5: I represent a state that choose to deregulate its electricity sector and leverage free market principles to deliver safe and reliable electricity to Ohio consumers. I am one of the few members on this committee who represents a state that has deregulated its electricity market. The rapid adoption of new technologies, low natural gas prices, and out-of-market subsidies have

been distressing competitive wholesale electricity markets. If confirmed, will you support FERC taking a leadership role in protecting wholesale electricity markets in order to ensure that electricity in these markets continues to be delivered safely and reliably?

Answer: Congress tasked FERC with supporting the reliability of the bulk electric system and ensuring that wholesale electric rates are just and reasonable. If confirmed, I will ensure that FERC fulfills its role with regard to wholesale markets.

Question 6: The Federal Power Act directs FERC to ensure that wholesale power rates are “just and reasonable.” How do you believe that mandate applies today in the world of RTOs?

Answer: I believe that the Federal Power Act’s mandate that FERC ensure just and reasonable wholesale power rates applies equally in both non-RTO and RTO regions. In regions where RTOs are in place, FERC reviews the justness and reasonableness of the market design, including effective oversight of that design, to ensure that the rates are just and reasonable.

Question 7: In Ohio, rural electric co-ops ensure that over 885,000 consumers have access to reliable and affordable electricity. The Federal Power Act exempts rural electric co-ops from FERC jurisdiction and this statutory exemption contributes to the state’s affordable electricity rates. Do you plan to adhere to the Federal Power Act and continue to exempt rural electric co-ops from FERC jurisdiction?

Answer: Electric cooperatives that receive a certain type of financing or that sell less than a certain amount of electricity per year are exempt from certain provisions of the Federal Power Act. If confirmed, I commit to adhere to the provisions in the Federal Power Act regarding jurisdiction over electric cooperatives.

Question 8: On May 1st and 2nd of this year, FERC held a technical conference on the potential conflicts between state policies and electricity grid operators. If confirmed, will you commit to reviewing the findings of the technical conference?

Answer: If confirmed, I look forward to reviewing the findings of the technical conference and addressing these important issues with my colleagues.

Questions from Senator Catherine Cortez Masto

Question 1: In late 2016, FERC issued a proposed rule that would eliminate barriers to the participation of renewable energy and electric storage in wholesale markets. Will you support approval of the proposed rule? What changes, if any, would you support before issuing a final rule?

Answer: I am reluctant to address the specifics of a final rule given that I have not had the opportunity to study the record, but if confirmed I look forward to addressing this issue with my colleagues.

Question 2: Do you support removing market barriers so that renewable energy and electric storage resources can provide services in wholesale markets?

Answer: I believe that all resources should be able to compete for the ultimate benefit of consumers. Eliminating unjust and unreasonable barriers to participation in the market is an important aspect to ensuring competition among resources.

Question 3: What additional actions could FERC take to allow distributed energy resources access to wholesale electricity markets?

Answer: Late last year, FERC issued a Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators proposed to address such barriers by providing a way by which distributed energy resource aggregators can participate in the organized wholesale electric markets. If confirmed, I look forward to reviewing the many comments the Commission received in response to the proposal and addressing this issue with my colleagues.

Question 4: In the state of Nevada, we have a successful renewable portfolio standard and have made great strides in creating a clean energy economy. Do you agree that states have the authority to establish the resource mix that best serves their customers?

Answer: States have jurisdiction over the resource mix in their individual states, but the Commission also has responsibilities under the Federal Power Act. I appreciate the importance of these issues to states. I understand the Commission recently held a technical conference with the objective of further exploring how the competitive wholesale markets can incorporate resources promoted by state energy policies while ensuring that wholesale electricity rates remain just and reasonable and that the reliability of the bulk power system is maintained. If confirmed, I look forward to working with my colleagues on this matter.

Question 5: If yes: How would you protect that authority?

Answer: Should I be confirmed, you have my assurance that I will be committed to protecting states' rights.

Question 6: If no: Why not?

Answer: Please see my response to your Question 5 above.

Question 7: Different regions of the country are reliably integrating renewable energy resources into the grid at very high levels. Numerous studies have shown that the grid can integrate far higher total levels of renewable energy on the grid than exist today. Do you agree that the evidence shows that solar and wind power can be reliably integrated into the power grid?

Answer: We can rely on all forms of resources to ensure reliable and reasonably priced energy, including reliance on solar and wind power. Those resources are playing an ever increasing part in our energy mix and we need to find a way to make sure those resources can be reliably integrated. Thus, while I am aware of some studies that show certain levels of integration can be achieved, my focus if confirmed will be on what the Commission can do to get resources integrated in a reliable and cost-effective manner.

Question 8: As levels of wind and solar energy resources expand, how important will regional coordination be in ensuring that these and other variable energy resources are cost-effectively integrated into the power grid?

Answer: I believe regional coordination is crucial in enabling cost-effective and reliable integration of all resources into the electric grid. By taking advantage of a larger pool of geographically-diverse resources, regional coordination is necessary to help balance power supplies, maintain grid reliability, and reduce power costs for customers.

Question 9: What can FERC do to facilitate this integration?

Answer: I believe that FERC has a role with regard to the integration of variable energy resources in a cost-effective and reliable manner.

I understand that FERC has sought to remove barriers to the integration of variable energy resources in its regulations. It has issued Order No. 764 requiring each public utility transmission provider to: (1) offer intra-hourly transmission scheduling; and, (2) incorporate provisions into the pro forma Large Generator Interconnection Agreement requiring interconnection customers whose generating facilities are variable energy resources to provide meteorological and forced outage data to the public utility transmission provider for the purpose of power production forecasting.

If confirmed, I look forward to working with my colleagues to monitor and review any proposed adjustments to specific markets or generic opportunities to ensure cost-effective integration of all resources including renewable energy resources.

Question 10: What are the main barriers to identifying transmission needs and getting these projects built?

Answer: In recent years, the Commission has considered ways to address barriers to needed transmission development. Order No. 1000, which the Commission issued in 2011, reformed public utility transmission providers' transmission planning processes and cost allocation mechanisms. As transmission planning regions work to implement both their Order No. 1000-compliant regional transmission planning processes and interregional transmission coordination procedures, the Commission has examined a number of issues related to transmission planning and cost allocation. For example, the Commission convened a technical conference in June 2016 on competitive transmission development. I support this continued effort to make sure FERC policies are meeting their intended goals. Following the technical conference, the Commission issued a request for post-technical conference comments on issues related to competitive transmission development, interregional transmission coordination, and regional transmission planning. If confirmed, I look forward to reviewing this record and addressing this issue with my colleagues.

Question 11: How will you promote joint and coordinated planning among regional transmission planners for necessary interregional transmission?

Answer: Interregional transmission development, including joint and coordinated interregional transmission planning, has been an issue before the Commission for several years now. Order No. 1000 required improved coordination between neighboring transmission planning regions for new interregional transmission facilities and that each public utility transmission provider participate in a regional transmission planning process that has an interregional cost allocation method for the costs of interregional transmission facilities. To date, the Commission has issued final orders approving interregional transmission coordination procedures for all the pairs of neighboring transmission planning regions that were required to comply with the Final Rule. Moreover, the technical conference on competitive transmission development that the Commission convened in June 2016 – described in my response to the preceding question – featured a discussion of interregional transmission coordination, including joint and coordinated interregional transmission planning. Several speakers at the technical conference, as well as some FERC Commissioners, questioned whether the Commission should do more to facilitate interregional transmission development. After the technical conference, the Commission requested post-technical conference comments on several issues related to interregional transmission development. If confirmed, I look forward to reviewing the record and addressing this issue with my colleagues.

Question 12: The lack of transmission is a barrier to transporting solar and wind energy to population centers. FERC Order No. 1000, requiring regional transmission planning and interregional coordination, was supposed to help identify transmission needs and solicit competitive transmission projects. Do you think that Order No. 1000's requirements for regional transmission planning were a step in the right direction towards facilitating necessary transmission infrastructure?

Answer: Order No. 1000 required each public utility transmission provider to amend its tariff to describe procedures that provide for the consideration of transmission needs driven by public policy requirements. This requirement applied to both local transmission planning processes and regional transmission planning processes. Specifically, the Commission required that each public utility transmission provider establish procedures through which it will identify transmission needs driven by public policy requirements in its local and regional transmission planning processes and evaluate potential solutions to those identified transmission needs.

Question 11: What are the main barriers to identifying transmission needs and getting these projects built?

Answer: In recent years, the Commission has considered ways to address barriers to needed transmission development. Order No. 1000, which the Commission issued in 2011, reformed public utility transmission providers' transmission planning processes and cost allocation mechanisms. As transmission planning regions work to implement both their Order No. 1000-compliant regional transmission planning processes and interregional transmission coordination procedures, the Commission has examined a number of issues related to transmission planning and cost allocation. For example, the Commission convened a technical conference in June 2016 on competitive transmission development. I support this continued effort to make sure FERC policies are meeting their intended goals. Following the technical conference, the Commission issued a request for post-technical conference comments on issues related to competitive

transmission development, interregional transmission coordination, and regional transmission planning. If confirmed, I look forward to reviewing this record and addressing this issue with my colleagues.

Question 12: How will you promote joint and coordinated planning among regional transmission planners for necessary interregional transmission?

Answer: Interregional transmission development, including joint and coordinated interregional transmission planning, has been an issue before the Commission for several years now. Order No. 1000 required improved coordination between neighboring transmission planning regions for new interregional transmission facilities and that each public utility transmission provider participate in a regional transmission planning process that has an interregional cost allocation method for the costs of interregional transmission facilities. To date, the Commission has issued final orders approving interregional transmission coordination procedures for all the pairs of neighboring transmission planning regions that were required to comply with the Final Rule. Moreover, the technical conference on competitive transmission development that the Commission convened in June 2016 – described in my response to the preceding question – featured a discussion of interregional transmission coordination, including joint and coordinated interregional transmission planning. Several speakers at the technical conference, as well as some FERC Commissioners, questioned whether the Commission should do more to facilitate interregional transmission development. After the technical conference, the Commission requested post-technical conference comments on several issues related to interregional transmission development. If confirmed, I look forward to reviewing the record and addressing this issue with my colleagues.

Question 13: Should FERC consider the underutilization of current pipelines when considering the need for a new pipeline?

Answer: As I understand the Commission's current policy, underutilization of current pipelines is one of the factors to be considered. If confirmed, I look forward to ensuring that all factors relevant to a determination that a proposed pipeline will serve the public interest are appropriately considered.

Question 14: Should FERC consider long-term stranded cost risk in examining the need for new pipelines?

Answer: My understanding is that the Commission evaluates the economic aspects of new interstate natural gas pipeline proposals. At present, such consideration is based on principles established in a 1999 Policy Statement. Under the Policy Statement, the pipeline applicant may not rely on its existing customers to help pay for the new project. This threshold requirement that the applicant must be willing to financially support the project without relying on existing customers appears to put the financial risk of overbuilding on the pipeline and not its existing customer.

Question 15: Who should be responsible for the costs of any wasteful overbuilding?

Answer: As I stated during my confirmation hearing, we need to strike the right balance between ensuring consumer protection while allowing for responsible energy development.

**Questions for the Record and Responses for Mr. Robert Powelson
June 1, 2017**

Questions from Ranking Member Maria Cantwell

Question 1: Chairman Murkowski and I tried to enact energy legislation last Congress that included reforms to hydroelectric licensing at FERC.

45 percent of FERC-licensed projects accounting for one-third of licensed capacity will begin pre-filing for new licenses by 2030. For many of these projects, it will be the first time they will participate in the licensing process Congress in 1986 amended the Federal Power Act directing FERC to given equal consideration to environmental factors.

I believe that, rather waiting for Congress to Act, FERC can, on its own, could make several changes that would improve interagency cooperation in the licensing process. For example, FERC could adjust how it implements its *ex parte* rules to encourage more of its sister federal agencies to accept cooperating agency status under the National Environmental Policy Act. FERC could also accept more requests from its sister agencies for studies likely to be required in any event under other federal statutes (e.g., the Endangered Species Act) at a later stage.

- If confirmed, will you help identify and reduce barriers to interagency cooperation within FERC's existing statutory authority?

Answer: It is my understanding that the current hydropower licensing process is complex and involves not only input from numerous stakeholders but also gives mandatory conditioning authority to multiple agencies. If I am confirmed I look forward to working with my colleagues to identify and address barriers to interagency coordination with regard to the hydroelectric licensing process.

Question 2: Under its existing policy, FERC only considers investments in a project on a forward-looking basis as part of the licensing process. This creates a perverse incentive to delay potential investments that could benefit the environment and ratepayers.

The Commission recently asked for comments on whether it should revise its current policy with respect to establishing the length of new license terms for hydroelectric projects.

I have supported legislation to require the Commission to treat project investments by licensees under existing licenses (beyond those already required by the license) the same way it treats investments made under new licenses. This provision has been referred to as the "early action" provision. While accounting for prior investments may complicate the Commission's determination of an appropriate length license term, changing this policy could accelerate improvements in fish passage, turbine efficiency, and other project upgrades.

- Will you commit to considering changing the Commission's current policy with respect to establishing the length of hydroelectric license terms by removing the perverse incentive to delay investments under current licenses?

Answer: As you indicate, the Commission has issued a notice of inquiry soliciting comments on its policy for setting new license terms for hydropower projects. Currently, the Federal Power Act requires these license terms to be between 30 and 50 years. The Commission's current policy bases license terms on the amount of developmental and environmental measures required by a new license. In the notice of inquiry, the Commission asked for comments on whether it should: retain the existing license-term policy; consider measures implemented during a prior license term; establish a 50-year default license term; include a more quantitative cost-based analysis; and establish license terms based on negotiated settlement agreements when appropriate. If confirmed, I will fully consider all of the responses to the notice and I look forward to addressing this issue with my colleagues.

Question 3: Unlike the Commodity Futures Trading Commission and the Securities and Exchange Commission, FERC cannot license or ban individual traders from trading in jurisdictional markets. It is estimated that more than 2,500 firms and thousands of individual traders participate in physical electricity and natural gas markets. Little is publicly known about which banks, hedge funds, utilities, and marketers are active players.

Furthermore, a repeat offender previously fined by FERC can continue to trade. A trader convicted of criminal fraud, or a former securities or commodities trader who had their securities or commodities trading license revoked would still be permitted to trade over FERC markets.

- Do you think that FERC should explore adopting a registry to keep track of repeat violators of market manipulation restrictions?
- Do you think FERC should explore a licensing regime to, among other things, keep those convicted of market manipulation in other markets from participating in FERC-regulated markets?

Answer: I believe in a strong enforcement of the Commission's rules and regulations. Ensuring that markets are free from fraud and manipulation is an important element of the FERC's work. To help protect the energy markets from manipulation, it would be useful to track repeat violators and those found to have engaged in manipulation in other markets. If confirmed, I look forward to discussing this issue with my colleagues and determining whether additional tools are needed. It is my understanding that legislation may be necessary if Congress wishes to develop a trader licensing regime.

Question 4: The Federal Power Act (FPA) limits FERC's jurisdiction with respect to certain utilities and FERC's authority to require participation in organized markets. Governmental entities and non-public utilities, including federal power marketing agencies, municipal utilities, rural electric cooperatives, and public utility districts, are exempt from most regulatory oversight by the Commission.

- What is your understanding of the limitations on FERC's authority with respect to the Bonneville Power Administration?

- What is your understanding about FERC's authority to require utilities to participate in organized markets?
- Will you abide by these limitations if confirmed?

Answer: I recognize the importance of the Bonneville Power Administration to the Pacific Northwest. I am also aware that, FERC's authority over Bonneville is more limited than its authority over traditional public utilities. For example, pursuant to the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act), FERC's review of Bonneville's regional power and transmission rates is limited to whether Bonneville's rates meet the three specific requirements: (i) whether the rates are sufficient to assure repayment of the Federal investment in the Federal Columbia River Power System over a reasonable number of years after first meeting other costs; (ii) they must be based upon the Administrator's total system costs; and (iii) whether insofar as transmission rates are concerned, they must equitably allocate the costs of the Federal transmission system between Federal and non-Federal power. Separately, FERC has limited authority with respect to Bonneville under provisions of the Federal Power Act, such as with respect to reliability standards adopted pursuant to section 215 of that statute.

Additionally, I am aware that it is a voluntary decision on the part of an entity whether to join a regional transmission organization or independent system operator, the bodies that operate organized markets in various parts of the country.

The limitations I address in this response are based in law, whether statute or prior FERC decisions. If confirmed, I would abide by those limitations, unless the law is changed.

Question 5: Just before resigning Commissioner Bay wrote a Concurring Opinion to an order granting a natural gas pipeline certificate in which he suggested that the Commission should reconsider its use of precedent agreements between pipelines and potential future customers to assess whether a proposed new pipeline is needed. In particular, Commissioner Bay argued that precedent agreements involving pipeline affiliates are particularly suspect.

- Do you agree with Commissioner Bay that the Commission should reexamine its policies for assessing whether a new pipeline is necessary? If not, why not?

Answer: It is my understanding that the basic tenants employed by the Commission to determine whether a company has demonstrated that its proposed project is needed were established in 1999. If confirmed, I will work with my colleagues to review the Commission's policies for reviewing pipeline applications to ensure the Commission gives appropriate weight to all relevant factors.

Question 6: Just before resigning Commissioner Bay wrote a Concurring Opinion to an order granting a natural gas pipeline certificate in which he suggested that the Commission should engage in a broad regional assessment of the environmental impacts of the Marcellus and Utica shale gas development activities.

- Do you agree with this recommendation? If not, why not?

Answer: I respectfully disagree with that recommendation. As a Pennsylvania state regulator who served on Governor Corbett's Marcellus Shale Commission and Governor's Wolf Pipeline Infrastructure Task Force, I believe that this issue would be better addressed at the state level. State environmental regulators and state public utility commissions are closer to the issues of shale gas development and are better equipped than the federal government to undertake such an assessment.

Question 7: When FERC grants a Certificate of Public Convenience and Necessity to a proposed interstate natural gas pipeline, the developer is also granted eminent domain authority. Sometimes the eminent domain authority is used before the Commission has acted on a Request for Rehearing of its initial order and before a party to the proceeding has had an opportunity to seek judicial review of the order.

- Do you believe that a pipeline should have the opportunity to utilize eminent domain authority if it remains possible that the Commission, pursuant to a Rehearing Order, or an appellate court, can still issue an order reversing FERC's decision to grant the Certificate? Please explain.

Answer: It is my understanding that the Natural Gas Act confers on a pipeline company the ability to exercise the right of eminent domain once a Certificate of Public Convenience and Necessity is issued. However, if confirmed, I will work with my colleagues to review matters related to the concerns of landowners affected by infrastructure projects. In my view, it is critically important for FERC to engage stakeholders in a collaborative manner and provide the highest level of transparency throughout the certification process.

Question 8: Both the Federal Power Act and the Natural Gas Act require that a rate or tariff change proposed by a jurisdictional utility or interstate natural gas pipeline goes into effect if the Commission fails to act within 60 days of the proposal. There have been instances in which a rate increase has been permitted to go into effect because a tie vote prevented the Commission from acting. An appellate court has ruled that, in those circumstances, a party opposing the rate increase has no standing to challenge the rate change in court because FERC never issued an order on the matter.

- Senator Markey has proposed legislation that would enable opponents of a rate or tariff change to seek judicial review even if the Commission fails to issue an order due to a tie vote. Do you support this legislation?

Answer: I believe this is an issue that is best addressed by Congress, as the situation described in the question results from FERC's authorizing statutes. However, as a general practice, I believe that it is appropriate for parties to a FERC proceeding who are adversely affected by a rate or tariff change to have the opportunity to seek relief in court.

Question 9: FERC Order No. 1000, which among other things, requires regional transmission planning, has received mixed reviews in part because it has not led to the development of transmission lines connecting separate energy planning regions, which would help access remotely located renewable electricity resources, such as wind and solar.

- What do you believe FERC should do, if anything, to encourage interregional transmission planning?

Answer: In Order No. 1000, FERC required public utility transmission providers to, among other things, develop and implement interregional coordination procedures with the public utility transmission providers in neighboring transmission planning regions for sharing information regarding the respective transmission needs of each region and for identifying and jointly evaluating potential interregional transmission solutions to those needs.

I am a strong advocate for interregional transmission planning and, in my view, the Commission's implementation Order No. 1000 is a work in progress. In 2016, FERC convened a technical conference on Order No. 1000 that considered a number of issues, including interregional transmission coordination. I believe that the technical conference was a step in the right direction and that an ongoing dialogue on interregional transmission development is important. If confirmed, I will continue to pursue a review of Order No. 1000 to determine what is working and what needs improvement.

Question 10: Last year the Senate Energy and Natural Resources Committee held a hearing on natural gas pipelines. We heard testimony that, in some instances, existing natural gas pipelines are not being fully utilized. For instance, several interstate pipelines serving the northeast were not fully utilized during the Polar Vortex.

- Do you believe we should explore how to use existing natural gas pipeline capacity more efficiently before the Commission grants new Certificates to build additional pipeline capacity in the same region?

Answer: Making efficient use of existing capacity ensures that consumers benefit fully from previous investment in this type of infrastructure. I believe that it is important to make efficient use of existing natural gas pipeline capacity and that our nation is likely to need additional natural gas pipeline infrastructure. I also recognize, however, that investment in new pipelines can offer consumers greater opportunity to benefit economically from the emergence of shale gas. Such investment also may have the benefit of enhancing the resilience of the gas pipeline.

Question 11: I am concerned that sophisticated energy traders can engage in schemes designed to manipulate energy markets without actually being in violation of a tariff on file with FERC. These traders argue that FERC's anti-manipulation authority does not apply if there is no specific tariff violation?

- Don't you believe that FERC's market manipulation authority can apply even if there is not a specific tariff violation?

Answer: Yes, I believe the Commission has made it clear in numerous orders that a tariff violation is not required in order to violate FERC's Anti-Manipulation rule. I understand that the prohibition against market manipulation stands separate from tariff provisions and other regulations which also must be followed.

Question 12: Cybersecurity vulnerabilities in our nation's energy infrastructure pose grave national security and economic risks to the country. The Department of Homeland Security reported that 56% of cyber incidents against critical infrastructure in 2013 were directed at energy infrastructure. This number has since decreased: in 2016 it was down to 20%, but it is still too high. Although we have mandatory cybersecurity standards for electric utilities, natural gas pipelines are subject to merely voluntary guidelines issued by the Transportation Security Administration (TSA).

- Given the increased dependence on natural gas for power generation for many of FERC regulated utilities, don't you agree that there should be a mandatory standards regime for gas pipeline cybersecurity, just as there is for electric utility cybersecurity?

Answer: I certainly agree that there is not a more critical and complex issue facing our country than ensuring that our nation's energy infrastructure is safe from cyber-attacks. However, with respect to the issue raised in your question, it is the Transportation Security Administration (TSA), and not FERC, that currently has the authority to establish mandatory cybersecurity regulations for natural gas pipelines. As such, Congress and the TSA are in the best position to evaluate TSA's current natural gas pipeline security authority to determine if natural gas pipelines should be subject to additional or mandatory cybersecurity standards. Although I am unaware of any mandatory measures being planned by TSA, I understand that the agency is reviewing its voluntary cybersecurity guidelines for pipelines and FERC staff has offered to assist with this initiative.

Question 13: The 2000-2001 western energy crisis did a lot of damage to my constituents and the economy throughout the region. It became clear to me in the aftermath that FERC did not have sufficient authority to prevent market manipulation and punish those engaged in these acts. Through the Energy Policy Act of 2005 we gave FERC the authority it needed. The Commission has since investigated more than 100 cases of alleged manipulation, 32 of which have been settled. The Commission has imposed approximately \$547 million in civil penalties. I understand that the industry thinks FERC's Enforcement Office has been too aggressive and that the new Trump Administration provides a golden opportunity to weaken the anti-manipulation program.

- I need your commitment that you will support a strong Office of Enforcement that acts as "the cop on the beat" to prevent utilities and marketers from taking advantage of consumers. Will you give that commitment?

Answer: Yes, I am committed to maintaining a strong FERC Office of Enforcement. If confirmed, I will bring to FERC the same enforcement discipline that I employed as a Pennsylvania state commissioner over the past 8½ years. My track record is very clear that I am not afraid to punish bad actors in the marketplace.

Question 14: Last month, Secretary Perry sent a memo to his Chief of Staff asking that the Department prepare a study examine the state of wholesale electricity markets, especially why coal and nuclear plants are having a hard time competing with natural gas and renewable resources. The Secretary's memo also hinted that state and federal renewable energy incentives are to blame.

The Secretary followed this up a few days later with a speech in New York during which he suggested that the Trump Administration may try to preempt state programs, such as renewable energy standards. It does not take a rocket scientist to know that it is low natural gas prices, not renewable energy, that is making coal and nuclear power uncompetitive.

But it is also troubling that the Administration appears to be suggesting that adding more renewable energy threatens grid reliability especially when our national labs have repeatedly found this is not true. It is even crazier that Secretary Perry is making these false statements since Texas has more wind power than any other state.

- Are you aware that the National Renewable Energy Laboratory (NREL) has found that the eastern grid and the western grid could each reliably accommodate 30 percent renewable energy rates without any changes and that a third NREL study concluded that renewable energy will be able to reliably generate 80% of U.S. power needs by 2050 if we invest in increased grid flexibility?

Answer: I am aware of those studies and value the work of all of our National Laboratories. I also believe that we as a nation should seek to rely on all forms of energy resources, including renewable resources. However, it is also important to be mindful of grid reliability.

Question 15: There is a growing tension between state energy policies and Federally regulated electricity markets. Low wholesale electricity prices are benefiting consumers and challenging the economics of coal and nuclear power plants. The revolution in natural gas is the main cause. Commissioner Powelson, you in particular, have been a big booster of the benefits of the Marcellus Shale.

Meanwhile, states continue to exercise their authority to encourage particular types of generation – especially zero emissions technologies. These policies have taken different forms, including: renewable portfolio standards (29 states), carbon caps (the Northeast and California), and direct payments to nuclear power plants (New York and Illinois).

Last year, the Supreme Court made clear that the Power Act prohibits state policies that directly intervene in wholesale markets. But the Court left clear room for states to continue to preferring some resources over others. Given these facts, I worry about FERC rushing to judgment based on an outdated or ideological view of the grid.

- Do you agree that FERC should not intervene and use the Federal Power Act to preempt state clean energy policies?

Answer: As a member of a state regulatory commission, I have a great appreciation for the need for FERC and the states to respect each other's boundaries. As you note, the Supreme Court found that a specific Maryland program impermissibly encroached on FERC-jurisdictional wholesale markets, and therefore is preempted. However, I understand that the Court also acknowledged that states may regulate within their domain even when their laws may have an incidental effect on areas within FERC's domain. I am aware that on May 1-2, 2017, the Commission held a technical conference on the interplay of state policy goals and the wholesale energy and capacity markets, and I believe this was a good first step in addressing the issue. At the conference, FERC Commissioners and state commissioners engaged in a discussion of potential options for solutions to reconcile the competitive market framework with the policy interests of states. I look forward to further examining this issue and reading the post-technical conference comments to determine if any next steps are necessary.

Question 16: Since 1978, Section 210 of the Public Utility Regulatory Policies Act (PURPA) has required monopoly utilities to purchase competitive renewable energy from independent producers. While Congress has relaxed this requirement for utilities in organized electric markets, PURPA remains a key driver of renewable energy and competitive prices in the West and the Southeast.

Last June, FERC held a technical conference on the implementation of PURPA. Utilities used the technical conference to argue for greater FERC intervention to limit opportunities for small renewable energy developers. I believe state commissions already have many ways to tailor the must-purchase requirement to address local concerns. I am deeply skeptical about utilities running to Congress and FERC when they don't get their way with their own regulators.

- Do you agree that regulators in traditional monopoly states have powerful ways to adjust the "must-purchase" requirement under PURPA?
- Given the states' own authority under PURPA, why would FERC need to intervene to limit one of the only federal mechanisms that encourage independent power production in those states?

Answer: PURPA sets forth specific roles for both FERC and the states. As I mentioned during my confirmation hearing, since the enactment of PURPA the resource mix has and is continuing to change. PURPA was developed at time when the U.S. was facing severe scarcity in its power resources. Today, our country is approaching energy independence. I respect the established roles given to FERC and the states and if confirmed, I will review this matter with my colleagues to understand what is and is not working with respect to the Commission's implementation of PURPA. But as I also noted at my confirmation hearing, I believe it would make sense to make PURPA review a part of a future energy bill. Given the major shift in our country's energy landscape, I would support Congressional action to modernize PURPA to reflect the new energy landscape which includes combined heat and power (CHP), clean tech investment, distributed energy resources, just to name a few.

Question 17: Would you continue FERC's encouragement of a holistic approach to transmission planning that incorporates non-wires alternatives, high-voltage transmission lines,

and advanced transmission technologies (such as high-capacity and high-efficiency conductors, compact transmission towers, and variable frequency transformers)?

Answer: FERC, through Order Nos. 890 and 1000, placed requirements on public utility transmission providers to have open, transparent transmission planning processes that, among other things, identify a variety of solutions that may resolve the transmission planning region's needs more efficiently or cost-effectively. I support these efforts.

Question 18: FERC is responsible for protecting against corporate affiliate abuse in a variety of transactions, including power sales and facility acquisition. Transactions between a public utility and a merchant affiliate can expose the utility's captive customers to cross-subsidizing the affiliate and its shareholders.

- Are you familiar with the provisions of the Federal Power Act that prohibit public utilities from inappropriately cross-subsidizing non-utility corporate affiliates?
- Will you commit to enforcing existing FERC standards applied to reviewing market rate contracts between corporate affiliates?
- Do you agree that the transfer of facilities subject to FERC jurisdiction between a public utility and its merchant affiliate must always be scrutinized for cross-subsidization?

Answer: Yes, I am familiar with the provision in section 203 of the Federal Power Act that prohibits transactions subject to the Commission's jurisdiction that will result in cross-subsidization of a non-utility associate company or the pledge or encumbrance of utility assets for the benefit of an associate company absent Commission approval. I am also familiar with the Commission's policies under the section 205 of the Federal Power Act that protect customers from prohibited sales between a public utility and its market regulated power sales affiliates.

I am familiar with FERC's standards that apply to market rate contracts between a public utility and its market regulated power sales affiliate, and if confirmed, I will, as with all of the Commission's rules and regulation, ensure compliance with them.

Question 19: In 2013, Congress passed the Hydropower Regulatory Efficiency Act, directing FERC to investigate the feasibility of issuing a license for hydropower development at non-powered dams and closed loop pumped storage projects during a two-year period. FERC implemented a pilot program, ultimately applied to one non-powered dam project in Kentucky, and issued a license for the project within two years. Members of this committee look forward to FERC's report, required under the 2013 law, on this process, following a workshop held by the Commission this spring.

- If confirmed, how would you approach the challenge of reducing disincentives in the licensing process and potentially inadequate compensation in the wholesale markets to the development of hydropower at existing non-powered multi-purpose dams and at appropriately sited and designed pumped storage projects?

Answer: I understand that on May 25, 2017, Commission staff submitted to Congress the report required by the 2013 law, and that Commission staff stated in that report that hydropower licenses have been and can be issued in two years or less under the right circumstances. At the hearing, I mentioned that I believe that we should be able to rely on all forms of energy resources, including hydroelectric resources. If confirmed, I look forward to working with my colleagues to explore how the Commission could further reduce possible disincentives to the development of hydroelectric resources in appropriate circumstances.

Questions from Senator Ron Wyden

Question 1: It appears that the White House has thrown its support behind the Jordan Cove liquefied natural gas project, being discussed in my home state of Oregon. Should you be confirmed as FERC commissioner, will you commit to avoiding any step that could be interpreted as political interference from the White House in FERC's deliberative permitting process in Oregon and nationwide? And will you commit to leading a thorough and transparent stakeholder process, where all community voices in Oregon -- including tribal community voices -- can be heard?

Answer: As a sitting public utility commissioner, I understand the need for both independence and public engagement in making decisions regarding infrastructure that serves the public interest. As I noted at the hearing, public input has to be part of the equation. An agency's decisions need to be based on established, transparent policies and sound technical analysis. If confirmed, I will work with my colleagues to issue decisions based on the record before us.

Question 2: As you know, FERC has authority under the Natural Gas Act to review gas pipeline applications. What factors would lead you to deny approval for a new or expanded pipeline? Does that calculation change if there are customers for the proposed pipeline's capacity?

Answer: I understand that pursuant to its responsibilities under the Natural Gas Act, FERC conducts both a non-environmental and an environmental review of proposed natural gas pipelines. The non-environmental review focuses on the engineering design, rate, and tariff considerations. The environmental review involves coordination with multiple agencies to ensure the project can be completed in an environmentally safe and responsible manner. Should a proposed pipeline project fail to meet the requirements in the statute, that would warrant denying approval of the project.

Question 3: Former Chairman Bay made comments before he left FERC noting that it is "inefficient to build pipelines that may not be needed over the long term and that become stranded assets." He also suggested that simply considering precedent agreements may not be an adequate measure of need. How would you define need for a gas pipeline? Is having customers for the pipeline's capacity enough? How is that decision-making changed if those customers are the same entities-- or affiliates of those entities--involved in seeking approval for the pipeline?

Answer: There are many factors that must be considered in determining whether, as required by the Natural Gas Act, construction of a proposed pipeline is in the public interest. The standards

in place today were developed in 1999. If confirmed, I will work with my colleagues to ensure that the Commission considers all relevant factors in reviewing a project.

Question 4: As commissioner, what steps would you take to promote public participation, transparency, and confidence in FERC's pipeline certification process by incorporating community, landowner and scientific inputs?

Answer: As a state commissioner I appreciate the importance of public participation in an agency's proceeding. A full record that reflects comments on all sides of an issue enhances an agency's ability to make appropriate decisions. I am aware that, in order to satisfy the Commission's obligations under the National Environmental Policy Act, the agency has many long-standing practices for promoting public participation. The Commission also makes the project docket available to the public through its website, and solicits comments from any interested stakeholder. If confirmed, I will consider with my colleagues any additional steps that might be taken to increase public participation and confidence in the Commission's proceedings.

Question 5: Also in his departing comments from FERC, former chairman Bay noted that it is "in light of the heightened public interest and in the interests of good government, I believe the Commission should analyze the environmental effects of increased regional gas production from the Marcellus and Utica." As Commissioner, if confirmed, can you commit to directing Commission staff to conduct such studies on new and expanded pipelines?

Answer: I respectfully disagree with Chairman Bay's statement. This work is already being done by the states. In my home state of Pennsylvania, the Department of Environmental Protection (DEP) is effectively handling this responsibility. Given the states' expertise and closeness to the issues surrounding the production of natural gas, I believe they are better equipped than the federal government to undertake any such assessment.

Question 6: Chairman Bay also noted that "where it is possible to do so, the Commission should also be open to analyzing the downstream impacts of the use of natural gas and to performing a life-cycle greenhouse gas emissions study." It is my opinion that FERC should incorporate climate considerations into their evaluation of the environmental impacts of proposed natural gas pipelines and liquefied natural gas export facilities, as required under the National Environmental Policy Act. As Commissioner, if confirmed, can you commit to including climate change considerations and analysis in the environmental review conducted on new and expanded pipelines?

Answer: I understand that this issue has been raised in many of the pipeline cases recently before the Commission. I also understand that the Commission's environmental documents contain a section describing impacts potentially related to climate change for regions in which a project is located. If confirmed, I will review this matter with my colleagues to determine how the Commission may best factor such information into its decisions.

Question 7: I am concerned about abuse of eminent domain by the natural gas and pipeline industries in recent years, aided and abetted by premature and improper FERC authorization of eminent domain. A review of FERC's approval process is needed, because of the ramifications of

the certificate, which grants the holder the ability to exercise eminent domain. If confirmed, will you take steps to review, and revise if necessary, the eminent domain proceedings at FERC? Also, can you commit to holding an evidentiary hearing, as articulated in FERC's official policy, when a significant amount of eminent domain is implicated in a project?

Answer: It is my understanding that the Natural Gas Act confers on a pipeline company the ability to exercise the right of eminent domain once a Certificate of Public Convenience and Necessity is issued. However, if confirmed, I will review with my colleagues how concerns of landowners affected by infrastructure projects are addressed by the Commission, including whether it would be appropriate to implement any process changes. In my view, it is critically important for FERC to engage stakeholders in a collaborative manner and provide the highest level of transparency throughout the certification process.

Question 8: Mr. Powelson, I was encouraged to see in your January 19 letter to the administration, that you support the rights of states to create their own energy policies, such as renewable portfolio standards. A broad coalition in Oregon, including consumer advocates, electric utilities and environmental groups, championed recent legislation to increase the renewable portfolio standard to 50% for our state. The state legislature made that decision and the governor signed that into law. Now, in some FERC-supervised markets, this sort of democratic process is under attack. FERC recently held a technical conference to explore those assaults on state authority. Do you support the federal government trampling states' rights to pursue state energy policies, such as renewable portfolio standards? Or do you think states should have the authority to establish their own energy policy through their constitutional rights?

Answer: I do not support the federal government trampling states' rights to pursue energy policies and I agree that states have jurisdiction over the resource mix in their individual states. However, from time-to-time the state policies and FERC-jurisdictional wholesale electricity market rules intersect in a way that may burden the wholesale markets and the Commission's ability to ensure that wholesale electricity rates are just and reasonable. FERC is already considering these important issues and recently held a technical conference exploring these state-FERC issues. If confirmed, I will carefully consider all comments in record and look forward to working with my colleagues on these important issues going forward.

Question 9: Energy storage is one of the most rapidly growing energy technologies out there, and it can provide multiple benefits to the grid. To get my vote, I'm going to need to see you commit to removing unfair barriers to energy storage--and other emerging technologies, like distributed energy resources--in the wholesale electricity markets. Do you agree FERC should be promoting technology-neutral competitive markets? More specifically, do you think energy storage assets--and "distributed energy resources"--should be able to compete in wholesale electricity markets?

Answer: As I mentioned at my confirmation hearing, I believe the Commission should ensure that new technologies, such as storage and distributed generation, are not discriminated against in the markets. Energy storage has the potential to be a game changer for the bulk power system, in that it has the potential to supply substantial economic and reliability benefits to the grid. As a

member of the Electric Power Research Institute Advisory Board (EPRI), I am aware and encouraged by the exciting research underway on battery storage as a distributed resource.

Last November, the Commission issued a notice of proposed rulemaking proposing to require RTOs and ISOs to establish market rules that accommodate the participation of electric storage resources in the RTO/ISO markets and allow aggregations of distributed energy resources to participate directly in the organized wholesale electric markets. The Commission stated that it is proposing these reforms to remove barriers to the participation of electric storage resources and distributed energy resource aggregations in the organized wholesale electric markets. If confirmed, I look forward to participating in rulemaking and reviewing this issue with my colleagues.

Question 10: In your view, should FERC have a significantly different process for its certification of gas pipelines than it does for interstate transmission lines?

Answer: There may be similarities in how a gas pipeline and an interstate transmission line should be sited. I understand that the Energy Policy Act of 2005 established backstop electric transmission line authority for the Commission, and the Commission subsequently issued regulations to implement that authority. However, appellate court decisions have limited the Commission's ability to use that authority and the sufficiency of the Department of Energy's designation of national interest transmission corridors.

Question 11: Given that FERC has endorsed markets and competition for energy and ancillary services, is it your opinion that this approach can be successfully used for any and all providers of all reliability-related services?

Answer: Ancillary services are obtained through different mechanisms in various regions of the country. For those regions that choose to participate in organized markets, I believe that those markets bring benefits to the consumers in them. But organized markets are voluntary, and I believe they should continue to be voluntary to allow other parts of the country to rely on their own approaches to procuring resources.

Question 12: Inter-regional, and economically beneficial electricity transmission is often neglected by the utility industry because of divisions in service areas, state's boundaries, and preferences of utilities to take narrow view of economic benefits. How will you support infrastructure investments, specifically electricity transmission, that bring lower energy costs to consumers?

Answer: There are multiple ways that, if confirmed, I would support electric transmission infrastructure investment. Near the top of the list would be to provide regulatory certainty to industry by working with my colleagues to act as expeditiously as possible on the many cases pending before the Commission, including those on transmission planning, cost allocation, and rate matters. I would also work with my colleagues at the FERC and state commissions to continue the discussion the Commission started last year on regional transmission planning and interregional transmission coordination.

Question 13: Do you believe there's been a lack of development of interregional transmission facilities, and if so, are there actions the Commission should take to facilitate such development?

Answer: The Commission has been considering the issue of interregional transmission development for a number of years now. In 2011, the Commission issued Order No. 1000, which required improved coordination between neighboring transmission planning regions for new interregional transmission facilities and that each public utility transmission provider participate in a regional transmission planning process that has an interregional cost allocation method. In the years following the issuance of Order No. 1000, the Commission has issued further orders establishing interregional transmission coordination procedures for all the pairs of neighboring transmission planning regions. The Commission has continued to consider the issue of interregional transmission development as the regions have worked to implement their interregional transmission coordination procedures. I support this continued review.

In June 2016, the Commission convened a technical conference on competitive transmission development, including interregional transmission coordination. At the technical conference, several speakers and FERC Commissioners raised questions regarding the state of interregional transmission development and, in particular, whether there is more that the Commission can—and should—do to facilitate the development of interregional transmission projects. The Commission also requested post-technical conference comments on several issues related to interregional transmission development. If confirmed, I will review the record on this matter with my colleagues.

Question 14: How will you facilitate the development of interregional transmission projects shown to provide more efficient or cost-effective solutions to regional needs?

Answer: As I stated in my response to the preceding question, the Commission is currently considering this issue after its June 2016 technical conference. Through the technical conference proceeding, the Commission has developed a record reflecting a wide range of parties' concerns with existing interregional transmission coordination requirements and ideas for facilitating more efficient or cost-effective interregional transmission development. If confirmed, I will review the record on this matter with my colleagues.

Question 15: How will you promote joint and coordinated planning between regional transmission planners for needed inter-regional transmission?

Answer: As noted in response to your previous questions, the issue of joint and coordinated planning for interregional transmission facilities was addressed at the June 2016 technical conference and the subject of many post-technical conference comments. If confirmed, I will review this record with my colleagues.

Question 16: Will you ensure interregional transmission project proposals have the opportunity to be studied by each affected Regional Transmission Organization?

Answer: Order No. 1000, which the Commission issued in 2011, requires that to be eligible for interregional cost allocation, an interregional transmission project must be selected in each

region's regional transmission plan for purposes of cost allocation. Thus, all potential interregional transmission projects must be considered through each transmission planning region's regional transmission planning process before they are eligible for interregional cost allocation under Order No. 1000. This is the case in both those regions in which the Regional Transmission Organization is the regional transmission planner and in those regions without Regional Transmission Organizations.

Question 17: How will you ensure that interregional evaluation processes and cost allocation methods encompass the full range of benefits (e.g., reliability, resilience, security, facilitating state policies, and congestion/planning reserve margin reduction) provided by interregional projects?

Answer: As I stated in my response to Question 13, the Commission convened a technical conference last year to address issues relating to competitive transmission development, including interregional transmission development. The issues of the evaluation processes and interregional cost allocation methods that apply to interregional transmission facilities were discussed both at this technical conference and in the post-technical conference comments. If confirmed, I will review this record with my colleagues.

Questions from Senator Bernard Sanders

Climate change

Question 1: President Trump has suggested in the past that climate change is a hoax. Is the President correct? Is climate change a hoax?

Answer: As I stated in my confirmation hearing, I am not a climate change denier. I have seen first-hand the impacts of storms like Super Storm Sandy and other weather related events and their impact on our state and region. So, I would not use the word hoax to describe climate change and the science behind it.

Question 2: Do you agree with the vast majority of scientists that climate change is real, it is caused by human activity, and that we must aggressively transition away from fossil fuels toward energy efficiency and sustainable energy like wind, solar, and geothermal?

Answer: Yes, I agree that climate change is real and that we need to develop strategies to address climate change that include energy efficiency, clean technology investment, renewables, new nuclear, clean coal and natural gas.

Question 3: Do you agree with the vast majority of scientists that the combustion of fossil fuels contributes to climate change?

Answer: Yes, I agree with that statement.

Question 4: Do you believe that FERC has a role in reducing the extraction and use of fossil fuels?

Answer: It is my understanding that FERC's policies are resource- and fuel-neutral. The Commission relies on competitive markets to provide just and reasonable rates and reliable service for consumers, and to send appropriate investment signals for developers. Moreover, the Natural Gas Act does not give the Commission the authority to regulate natural gas extraction or use.

Question 5: If confirmed, how will you work to address climate change?

Answer: If confirmed, I will support the market-based policies that have driven the reduction in carbon dioxide emissions that we are seeing in the power sector today in the United States.

Energy system transformations

Question 6: In 2015, you advocated for on-bill financing so that customers can more easily finance energy-saving home measures. I am also a fan of on-bill financing. You also said it will be difficult for electric utilities to buy into on-bill financing without cutting the link between electricity sales and profits. "Personally I think Pennsylvania needs to come out of the stone ages here," were your exact words. Do you still support decoupling of electricity sales and profits? If confirmed, how will you consider proposals to decouple wholesale electric rates?

Answer: As evidenced by my time at the Pennsylvania Public Utility Commission, I have been a progressive regulator with respect to encouraging new and innovative technologies in the electricity markets. I strongly support decoupling on the retail side, as empirical evidence shows that it brings about more sustainable investment in energy efficiency and conservation measures at the state level. On the wholesale side, I supported FERC's efforts in Order No. 745, which were eventually affirmed by the U.S. Supreme Court.

Question 7: What do you believe are the best ways to achieve a sustainable, carbon-free energy future?

Answer: In my view, the best way to achieve a sustainable, carbon-free future is to support a 21st Century energy policy that encourages innovation in the way we generate, transmit and distribute power. Thanks to these market-based efforts, we are already seeing improvements in the reduction of carbon dioxide emissions in the U.S. According to the EPA, greenhouse gas emissions in 2012 were 10 percent below 2005 levels. In my home state of Pennsylvania, carbon dioxide emissions have fallen over 30 percent since 2005. Moreover, according to the Energy Information Administration, this past year the U.S. power sector emitted less carbon dioxide than the nation's transportation sector. I believe the market is driving these changes and that we need to support that going forward.

Question 8: What ways can FERC prevent economic harm to low-income Americans during transformations of the energy system?

Answer: FERC has always remained diligent in ensuring that wholesale market participants adhere to market rules. In addition, the FERC's core responsibility is to ensure just and reasonable wholesale electricity rates and natural gas transmission rates. These roles are critical to protecting customers. If confirmed, I will not waver in my commitment to ensuring that FERC continues to adhere to these principles.

Question 9: What role do you see FERC has in increasing the reliability of the electric grid to increasingly extreme weather while ensuring generation is sustainable and low-carbon?

Answer: Under section 215 of the Federal Power Act, the Commission reviews reliability standards for approval and enforces those standards. Under certain circumstances, FERC may require NERC to develop a reliability standard to address a matter. The reliability standards are largely resource neutral. My understanding is that FERC looks to the Electric Reliability Organization to perform event analysis for extreme weather events on an interconnection wide basis; such analysis considers the use/performance of all resources to assess the risks to reliability during the extreme weather. If confirmed, I will work with my colleagues and engage relevant stakeholders on such matters.

Question 10: If confirmed, what steps will you take at FERC to help the U.S. transform its energy system as quickly as possible from one based on carbon-intensive fuels to one based on clean, sustainable fuels?

Answer: My understanding is that FERC's policies are resource- and fuel-neutral. The Commission relies on competitive markets to provide just and reasonable rates and reliable service for consumers, and to send appropriate investment signals for developers. However, on May 1-2, 2017, FERC held a technical conference to explore the interplay between wholesale markets and policy goals of states, including their support of particular resource attributes or externalities. If confirmed, I expect to further evaluate the interaction of the Commission's and state policy goals.

Question 11: Energy prices impact all American families. Yet climate change poses catastrophic economic, environmental and social threats to all Americans. Delaying action on climate change has severe long-term costs. Moreover, renewable energy sources like wind and solar are the cheapest available, and aren't subject to the sorts of wild price fluctuations that we see with fossil fuels. When combined with aggressive energy efficiency, they can provide cheaper energy over the long term than dirty fossil fuels.

If confirmed, what steps will you take at FERC to help the U.S. transform its energy system, as quickly as possible, from one based on carbon-intensive fuels to one based on clean, sustainable fuels?

Answer: If confirmed, I will refrain from picking "winners and losers" in the energy marketplace, as that is not FERC's role. Please see my response to your Question 10 above.

Question 12: In Vermont, energy efficiency investments have saved \$279 million in avoided regional transmission system upgrades. What additional steps can FERC take to aggressively

promote the use of energy efficiency and other strategies to avoid unnecessary expensive new transmission lines and new baseload power plants?

Answer: I support state initiatives on energy efficiency. Vermont and Pennsylvania are national success stories on the adoption of energy efficiency investments. In Pennsylvania, I oversaw the successful implementation of Act 129, which is Pennsylvania's energy efficiency and conservation law. Utilities spent close to \$1 billion in energy efficiency measures, which resulted in customers receiving net benefit of close to \$1.8 billion. Those programs are working.

FERC has a different role with respect to energy efficiency. With respect to transmission planning, the Commission requires that public utility transmission providers allow consideration of non-transmission alternatives in both their local and regional transmission planning processes. In addition, two of the wholesale markets that the Commission regulates, PJM and ISO-NE, provide a mechanism for energy efficiency investments to participate in and receive compensation for their capacity value from the wholesale capacity market. Additionally, FERC should remain vigilant in making sure that demand side resources are adequately compensated for the benefits that they provide. The success of Order No. 745 is a prime example of that effort.

Question 13: What steps can FERC take to prioritize dispatching clean distributed renewable energy before dispatching fossil fuel generation?

Answer: It is not FERC's role to pick one resource over another. However, with strong market rules, I am confident that investments in clean technology will continue well into the future. Moreover, my understanding is that the RTO/ISO markets dispatch the least cost resources to meet demand, subject to reliability constraints. Resources offer their supply into the markets based on their marginal cost of production. Many renewable energy resources have no fuel costs, and have low or zero marginal costs, and thus are economic to dispatch whenever they are available. They are fully dispatched by the RTO/ISO markets unless transmission lines become overloaded or other reliability constraints prevent their full dispatch. Most renewable energy resources that are connected to the retail distribution system are not dispatched by the RTO/ISO markets, but those also typically generate when they are available. They displace the higher marginal cost resources that the RTO/ISO would otherwise need to operate to meet load.

Question 14: If confirmed, will you commit to encouraging utilities around the country to dramatically expand rooftop solar and other types of distributed generation?

Answer: To date, the increasing penetration of rooftop solar has been driven by state policy choices, and other drivers that are not directly under the control of the Commission. Nonetheless, FERC has sought to remove barriers to participation by various types of resources in the markets it oversees. For example, FERC has approved rules that allow market operators like ISO-NE to recognize distributed generation capacity when establishing its capacity requirement so that states get the capacity benefit of actions designed to encourage rooftop solar and other distributed generation. In addition, the Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators that the Commission issued in November 2016 included a

proposal to address potential barriers to the participation of aggregations of distributed energy resources in the organized wholesale electric markets. The Commission is currently considering comments on this issue, and if confirmed, I will review this input and look forward to working with my colleagues on these important issues.

Question 15: Grid reliability is an important priority for FERC, but opponents of renewable energy often use this “reliability” argument as an excuse for dismissing or undervaluing renewable energy. What steps will you take to ensure that FERC can protect the reliability of the grid while also transforming our energy system?

Answer: Our nation’s energy resource fuel mix is going through a transition. One component of this transition is identifying the types and levels of essential reliability services needed for reliable operation. If confirmed, I would work collaboratively with my colleagues to consider whether and how renewable energy resources can and should provide such essential reliability services, where technically capable of doing so.

It is clear to me that clean energy is good business. When you look across the U.S. today, renewable energy makes up almost 15 percent of the energy portfolio and that percentage is growing. FERC will need to work with states, industry, and other stakeholders to promote system modernization and develop sound regulatory policies.

Question 16: Are reforms needed to the wholesale market structures to support distributed energy resources? If not, do you commit to ensuring that wholesale markets continue to support distributed energy resources? If so, what could be done to ensure wholesale markets better support distributed energy resources?

Answer: Removing barriers to the participation of new technologies such as distributed energy resources in the markets that FERC oversees can bring benefits to consumers. As I have noted, this issue is currently under consideration at the Commission. In November 2016, the Commission issued a Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators in which it proposed a number of reforms to remove potential barriers to the participation of electric storage resources and distributed energy resource aggregations in the organized wholesale electric markets. Specifically, the Commission proposed to require each Regional Transmission Organization and Independent System Operator to revise its tariff to allow distributed energy resource aggregators to participate directly in the organized wholesale electric markets. The Commission received a significant number of comments in response to this proposal. If confirmed, I look forward to reviewing this matter with my colleagues.

Question 17: If confirmed, what steps will you take to move the American grid to a distributed, interconnected system?

Answer: As noted, in November 2016, the Commission issued a Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators. The Commission proposed to remove barriers to the participation of aggregations of distributed energy resources in the organized wholesale electric markets. If confirmed, I will review the record in this proceeding with my colleagues.

Question 18: If confirmed, will you support the development of large and small-scale storage, which will make our grid more resilient and encourage the buildout of renewable energy technology?

Answer: My view is that we should be able to call on all types of energy resources to serve the nation's needs, which includes renewable and electric storage resources. Barriers that keep otherwise competitive resources out of the market interfere with being able to rely on all types of resources. Potential barriers to the participation of electric storage resources in the organized wholesale electric markets is an issue that the Commission is currently considering.

In addition, in December 2016, FERC proposed revisions to its rules governing generator interconnection that would specifically include storage resources in the definition of generating facilities, thereby allowing storage resources to use these generator interconnection processes to interconnect with the grid. The proposal included revisions that would help leverage existing assets in the interconnection process, which would help storage interconnect more quickly.

If confirmed, I will review these matters and look forward to working with my colleagues on these important issues.

Question 19: Do you see a role for FERC in encouraging ancillary and reliability services markets to ensure all generators can compete to provide services to maintain grid reliability and get compensated for those services?

Answer: FERC has identified ancillary services that are necessary to maintain reliable operation of the grid. As noted in my response to your Question 15, one component of the transition in our nation's energy fuel mix is identifying the types and levels of essential reliability services needed for reliable operation. In both of these contexts, offering opportunities for resources that are technically capable of providing these services to do so can benefit consumers.

Question 20: The 2017 Infrastructure Report Card produced by the American Society of Civil Engineers rates our nation's energy infrastructure as a D+. Most electric transmission and distribution infrastructure was built in the 1950s and 1960s with a 50-year life expectancy and the over 640,000 miles of backbone transmission infrastructure is at full capacity. How will you facilitate the transmission infrastructure investment needed to modernize and expand our grid, particularly on an interstate basis?

Answer: There is no doubt that our nation's bulk transmission system is aging and needs modernization so that we can continue to move towards a clean energy future. There are several ways FERC can promote investment in the transmission infrastructure that is needed to maintain and modernize our grid. One is to provide the regulatory incentives to make these investments viable over the next decade. I believe that FERC can use its ratemaking tools to promote investment, while also ensuring that rates are just and reasonable. In addition, I understand that FERC has taken steps for regional transmission planning processes that are intended to identify and then remove barriers to development of more efficient or cost-effective transmission.

Question 21: The Public Utility Regulatory Policy Act (PURPA) allows industrial companies to build and operate combined heat and power (CHP) and waste heat to power (WHP) facilities that can simultaneously produce economical steam and electricity with energy efficiencies up to 80 percent. Do you support maintaining PURPA as currently enacted?

Answer: PURPA was developed at time when the U.S. was facing severe scarcity in its power resources. Today, our country is approaching energy independence. Given the major shift in in our country's energy landscape, I would support Congressional action to modernize PURPA to reflect the new energy landscape which includes CHP, clean tech investment, distributed energy resources, just to name a few.

Supporting the policy goals of individual states

Question 22: Given your stated dedication to state rights to dictate in-state energy policies, how will you ensure that states retain control of policies that incentivize distributed generation?

Answer: In FERC's proposal to allow for aggregated distributed resources to participate in the organized markets, the centralized wholesale markets must coordinate this participation with the operation of the distribution system. In additions, the Commission recently conducted a technical conference to specifically explore how the competitive wholesale markets supervised by FERC can select resources of interest to state policy makers—including those to incentivize distributed resources—while preserving the benefits of regional markets and economic resource selection. If confirmed, I look work with my fellow commissioners on these important issues.

Question 23: Approximately 30 states have passed renewable portfolio standards. States are enacting these policies for a wide variety of reasons including fuel diversity, environmental benefits, and economic development. If confirmed, how would you act to protect states' rights to decide their own energy policy?

Answer: States may determine their individual resource mix within their jurisdiction. State policies sometimes interact with FERC-jurisdictional wholesale electricity markets. If confirmed, I will make every effort to respect state jurisdiction over their resource mixes while carrying out FERC's core responsibility of ensuring that wholesale electricity rates are just and reasonable.

Question 24: While recognizing that FERC must place a premium on system reliability, many states have established aggressive energy policy goals. Vermont, for instance, is committed to reducing greenhouse gas emissions by 90% by 2050. Should you be confirmed, what steps will you take to give more weight to the policy goals of individual states?

Answer: Congress has tasked FERC with ensuring that the bulk power system remains reliable and that wholesale electricity rates are just and reasonable. I recognize states' rights and the importance of state energy policy goals. If confirmed, I will make every effort to respect those state energy decisions while carrying out my responsibilities under federal law.

Stakeholder influence and FERC management

Question 25: What specific issues in FERC regulation of energy markets cause you concern?

Answer: During my experience as a state regulator, I have come to believe that it is important to “do the boring well.” If given the opportunity to serve as a Commissioner at FERC, that will mean ensuring that the agency abides by its core mission of ensuring just and reasonable rates for wholesale electric and natural gas providers. It is my understanding that because FERC has been operating without a quorum for the past few months, there is a lot of work to be done to address the backlog of issues that have built up without a full complement of Commissioners. If confirmed, my first order of business will be to address the outstanding issues that are pending before the Commission and get the agency back up to speed.

Beyond that, if confirmed, I look forward to reviewing the post-technical conference comments regarding Order No. 1000 and examining the success of the Commission’s efforts to encourage transmission planning. The issue of state policies and their impacts on organized markets is another important topic that I look forward to examining given the widespread implications it has for the future of markets.

Question 26: If confirmed, how will you work to prevent undue influence on FERC by the fossil fuel industry?

Answer: I believe in the importance of robust and transparent participation of all interested parties in matters before FERC. To be an effective regulator, you must be able to call the balls and strikes, and if confirmed, I intend to do that in an unbiased and transparent fashion. During my 8 ½ years as a state utility regulator in Pennsylvania, I have learned the value of considering all points of view before making a decision and if confirmed, I will continue that practice that approach at FERC.

Question 27: As a result of the Enron scandal, Congress changed FERC’s enforcement and civil penalty authority under the Energy Policy Act of 2005. What lessons does the Enron scandal still have for FERC?

Answer: In my view, the Enron scandal serves as a stark reminder that, notwithstanding the Commission’s best efforts to design and implement well-functioning competitive markets, FERC must be vigilant in its oversight of the energy markets. Products and technology are constantly evolving, so FERC’s monitoring must constantly evolve as well. I understand that FERC has developed a surveillance program to detect potential manipulation and, if confirmed, I look forward to learning more about that program and doing what I can to assure that it continues to keep up with changes in the markets.

Question 28: One of FERC’s most important responsibilities is to investigate and enforce against market manipulation. Is FERC devoting adequate resources to these enforcement activities? Are the fines sufficient? If confirmed, what steps will you take to sustain and improve on FERC’s enforcement capacity and success?

Answer: I believe that the penalties provided in the Energy Policy Act of 2005 are sufficient to deter and penalize market manipulation. I understand that FERC has significantly enhanced its investigatory and enforcement capabilities over the decade since enactment of that statute. If confirmed, I look forward to learning more about these capabilities in an effort to improve further FERC's enforcement program.

Question 29: After the 2003 electricity blackout, Congress included federal backstop siting provisions for interstate transmission lines in the Energy Policy Act of 2005. These included Section 1221 for National Interest Electric Transmission Corridors, which has never been implemented effectively. Would you support FERC taking on the responsibilities of the corridor designation authority if the Department of Energy was willing to delegate its role to FERC, which would consolidate the designation authority with the backstop siting authority FERC already has under the Energy Policy Act?

Answer: I appreciate that although it would be a decision for the Department of Energy (DOE) to decide whether to delegate the corridor designation authority to the Commission, I would comply with whatever authority that the DOE chose to delegate to the Commission. If confirmed, and such authority is delegated by DOE, I will review this matter with my colleagues and with DOE, as appropriate, to determine the most efficient and effective way to implement the delegated authority.

Question 30: FERC is incredibly complicated, and the barrier to entry for someone to simply understand FERC proceedings, much less to participate, is extremely high. Stakeholders with considerable financial resources can participate, but everyone else is effectively excluded. How can FERC do a better job of ensuring all interested parties can meaningfully participate in FERC processes?

Answer: While some of the issues within FERC's purview can be complex, FERC proceedings are on the record and open to any interested party. In addition, FERC's website provides a wide variety of information both the substance of FERC's policies as well as the process for participating in its proceedings. FERC should continue to maintain as much transparency as possible into its work in order to ensure that both industry and the public can meaningfully participate in Commission proceedings.

Question 31: If confirmed, would you support the creation of a "consumer advocate" office at FERC?

Answer: I do not believe that the creation of such an office at FERC is necessary. In my view, the public comment process at FERC provides all interested parties with the ability to participate in the process and express their positions on issues. Moreover, each RTO and ISO has an independent market monitor that oversees and reports on activities within the market to FERC. In addition, FERC has a very robust investigative and enforcement unit that can adequately address any problems it identifies within the wholesale markets. Given the safeguards already in place at FERC, I do not believe there is a need for such an office at this time.

Conflicts of interests

Question 32: The Edison Electric Institute (EEI) represents all U.S. investor-owned electric utilities. As President of the National Association of Regulatory Utility Commissioners (NARUC), you may know that in the 1980s, NARUC conducted a 20-month investigation into EEI's misuse of money collected from ratepayers for lobbying and public relations. One of the final audits from NARUC revealed that 50% of EEI's expenditures went to pay for these political activities. Yet, NARUC stopped auditing EEI data in the early-2000s. If confirmed, will you commit to ensuring that rate-payers are protected from paying for lobbying that seeks to protect or improve private profits?

Answer: Under FPA sections 205 and 206, FERC ensures that the rates, terms and conditions of sales for resale of electric energy and transmission service in interstate commerce by public utilities are just, reasonable, and not unduly discriminatory or preferential. The Commission's Uniform System of Accounts Account No. 426.4 captures expenditures related to lobbying and other activities. Clarity of expenses included in this Account allows for scrutiny in a rate proceeding. In addition, the Commission has held that the portion of expenses used for lobbying activities may not, under any circumstances, be included in the utility's cost of service. Finally, I would note that the Commission may investigate and address any accounting impropriety that may develop.

FERC abuses of power in reviewing and approving pipeline infrastructure

Question 33: While instilling important powers in the federal government, the Clean Water Act also ensures the protection and respect of states' rights. Section 401 of the Act explicitly states that no [federal] license or permit shall be granted until the certification required by this section has been granted or waived. Similarly, the U.S. Supreme Court has said Section 401 requires States to provide a water quality certification before a federal license or permit can be issued and without [Section 401] certification, FERC lacks authority to issue a license.

Given the language of the Clean Water Act and its interpretation by the Courts, do you think it appropriate that FERC is routinely issuing its Certificates of Public Convenience and Necessity for pipeline projects prior to all affected states rendering their decisions on Section 401 certification? If confirmed, will you commit to ensuring all relevant state level permits are granted prior to issuing a Certificate of Public Convenience and Necessity for any pipeline project?

Answer: I understand that it has been Commission policy to issue conditional certificates of public convenience and necessity for natural gas pipeline projects which preclude natural gas companies from commencing construction until they have obtained all necessary authorizations under federal law, including Clean Water Act certification. It is also my understanding that the U.S. Court of Appeals for the District of Columbia Circuit recently held that a certificate conditioned on the receipt of state water quality certification did not authorize a discharge into the navigable waters of the United States and so did not violate the Clean Water Act. If confirmed, I will work with my colleagues to ensure that all Commission decisions regarding natural gas pipeline projects are consistent with law.

Question 34: Under federal law, a private party is not allowed to legally challenge FERC approval of a pipeline project until they have first submitted a rehearing request to FERC, and FERC has affirmatively granted or denied that request. Rather than do one or the other, FERC's practice has been to issue a tolling order in response to such requests, which puts the request under further consideration. The result is that communities are put into legal limbo, unable to challenge the FERC decision until a final grant or denial is issued from the agency. Routinely FERC leaves people in that legal limbo for months, and sometimes over a year, while it allows the applicant to exercise the power of eminent domain and advance construction.

Do you see the use of tolling orders as an abuse of power by FERC? If confirmed, will you commit to either affirmatively grant or deny a rehearing request?

Answer: Under the NGA and the FPA, Congress gave FERC 30 days to address rehearing requests that parties file with FERC. My understanding is that Federal courts have upheld FERC's use of tolling orders in this situation. The use of tolling orders provides more time for FERC to conduct a thorough review of rehearing requests, which often involve complex issues, and to ensure that all arguments are considered and addressed.

I appreciate that in some instances this process places a burden on those affected by a FERC order. While I cannot prejudge how I will act on rehearing requests, if I am confirmed I commit to work to ensure the FERC's processes on filings are as efficient as possible.

Future of nuclear power

Question 35: What do you envision as the future of nuclear power?

Answer: As I noted at my confirmation hearing, I believe that the nation should rely on all forms of energy resources, which includes nuclear energy. Nuclear generation plays a critical role in our nation's resource mix. However, I am aware that certain nuclear resources are being displaced because they are unable to recover their costs in the wholesale power markets. The relatively low cost of natural gas has helped drive down energy prices. In addition, policies that impose new environmental requirements and seek to procure specific resource types have challenged nuclear resources. Finally, the emergence of new competitive technologies has also challenged nuclear resources.

Although I believe that FERC policies should focus on nondiscriminatory and resource-neutral rules, I also believe that it is critically important that the Commission take a look at this issue, especially if we want to maintain a diverse resource mix.

In June 2014 in Docket No. AD14-14, FERC initiated a proceeding to evaluate issues regarding price formation in the energy and ancillary services markets operated by RTOs/ISOs. This ongoing effort strives to improve the accuracy of energy prices for all resources, including nuclear. Also, the Commission recently convened a technical conference on state policies and wholesale markets that may shed some light on this issue. If confirmed, I will carefully review these matters with my colleagues.

Question 36: What do you believe is the proper role of FERC in the future direction of nuclear power in the United States?

Answer: Please see my response to your Question 35 above.

Also, FERC has taken steps to better understand the challenges facing nuclear power. FERC has participated in joint meetings with NRC to discuss the reliability of the bulk power system, nuclear power safety and security, and market factors influencing nuclear power economics.

Question 37: Do you think any market reforms are needed to support the future direction of nuclear power in the United States?

Answer: Please see my response to your Question 36 above.

IMAPP and regional initiatives

Question 38: New England has a regional Independent System Operator (ISO), and over the past several years consumer costs have skyrocketed as the ISO has implemented and tweaked its forward capacity market. In the regional process known as IMAPP – integrating markets and public policy – the ISO and FERC are beginning to acknowledge these administrative markets are in conflict with some of the objectives states have with regard to energy policy.

If confirmed, would you support efforts, such as in New England, to develop fixes to wholesale markets to better implement state policy goals in wholesale markets?

Answer: The Commission recently held a technical conference on this issue of the interplay of state policy goals and the wholesale energy and capacity markets. At the conference, FERC and state commissioners engaged in a discussion of potential options for solutions to harmonize the competitive market framework with the state policies. If confirmed, I will review this issue with my colleagues.

Question 39: Energy markets do not accurately reflect environmental costs, including the social costs of carbon pollution. Do you believe that FERC and wholesale market operators should continue to explore how to better integrate the real cost of carbon pollution into our energy markets?

Answer: FERC's policies are resource and fuel neutral. However, the Commission has recently convened a technical conference to explore ways to accommodate state policy efforts while retaining competitive market frameworks.

Where states or regions have taken steps to incorporate a carbon price, the wholesale markets have been able to incorporate that carbon price into the centralized wholesale energy market.

Question 40: Are you open to allowing ISO-New England to walk back from the capacity market model and return to a structure that allows load-serving entities to meet their needs through bilateral contracts with a residual market for capacity not otherwise procured through such bilateral contracts?

If confirmed, will you commit to just and reasonable rates for consumers, not just for market participants?

Answer: I am not aware of any ongoing efforts from ISO-New England to abandon its current capacity market as a tool to ensure resource adequacy in the region. However, I am not opposed to bilateral contracting by load-serving-entities.

Question 41: Earlier this month, FERC held a technical conference to examine how to better incorporate states' environmental policy objectives into wholesale markets. Stakeholders are working to address challenges in these markets, particularly as it relates to price formation like carbon pricing. More active leadership from FERC, however, may be necessary to direct wholesale market operators to develop solutions to address these price formation challenges.

If confirmed, would you help FERC take a more active role to assist state and market operator efforts to resolve price formation issues associated with states' environmental policies?

Answer: Although I am reluctant to speculate on any next steps that may come out of the technical conference, if confirmed, I will work with my colleagues to address the issues explored at the technical conference regarding the interplay between state policy goals and wholesale markets.

Question 42: Do you think there are ways to account for environmental costs in price algorithms that appropriately value the benefits of carbon free generation?

Answer: RTO/ISO markets do not independently determine environmental costs but I understand that such costs can be and in some cases are incorporated in price algorithms if those costs are known.

Question 43: New England is making considerable progress implementing renewable portfolio standards, renewable energy standards, and the Regional Greenhouse Gas Initiative. These reforms will be an enduring aspect of the region's energy strategy.

If confirmed, will you commit to work with ISO-New England to ensure that wholesale market rules complement state policies and regional agreements?

Answer: As a state regulator, I understand the importance of ensuring that wholesale markets and state and regional policies complement, rather than conflict, with each other. FERC recently held a technical conference on the complex and important issue of the interplay of state policy goals and the wholesale energy and capacity markets. During that conference, FERC Commissioners and state commissioners engaged in a discussion of potential options for regional solutions. If confirmed, I will review this issue with my colleagues.

Forward capacity auctions

Question 44: The New England region saw considerable price increases in the region's forward

capacity auctions (FCAs) in 2014. In recent auctions, costs have come down, while the region has been able to secure sufficient resources to maintain system reliability. Part of the reason why auction prices came down is because ISO-New England included more renewable energy in its installed capacity requirement (ICR). ISO-New England has continued to improve its inclusion of renewable energy in the ICR calculation, but could do better.

How can ISO-New England's consideration of energy, efficiency, renewable generation, and improved metrics in the forward capacity auctions that value the benefits of carbon-free generation help reduce system costs and improve system reliability?

Answer: As you note, ISO-New England revised the calculation of its ICR for FCA 10 (associated with the 2019/2020 delivery year) to reflect the forecast penetration of behind-the-meter solar photovoltaic resources. It is my understanding that this revision had the effect of reducing the ICR for FCA 10 by almost 400 MW. I am supportive of market innovations that reduce costs without impacting system reliability.

Question 45: Carbon-free generation currently faces a large barrier for bidding into the FCAs because of upfront costs. If confirmed, will you commit to working with our ISOs to continue reducing the barriers to including more renewables into the ICR and for bidding into our energy auctions?

Answer: I understand that all new capacity resources in New England face a minimum offer price in order to prevent the exercise of buyer-side market power in the FCA. However, in recognition of certain public policy choices by the New England states, there is an annual exemption from the minimum offer price rule of 200 MW, with a potential three year carry-over of up to 600 MW for certain renewable resources. As I previously noted, I support a diverse fuel mix that supports a safe and reliable grid, and I support the elimination of barriers to new resources.

Hydro relicensing

Question 46: As states implement policies to address climate change it is becoming increasingly clear that hydroelectric generation will continue to be a central component of the U.S. energy portfolio. Yet the licensing process for hydroelectric facilities can last a decade or more, cost hundreds of thousands of dollars, and often results in decreased electric production due to water quality concerns. What do you see as steps FERC can take to streamline this process, and how would you ensure state and federal environmental and water quality concerns are maintained?

Answer: I support the notion that the country should rely on all forms of resources, including hydroelectric resources. The hydroelectric licensing process, however, is complex and involves multiple agencies. If confirmed, I will work with my colleagues to determine what steps FERC can take to streamline the hydropower licensing process, while ensuring that federal and state environmental and water quality concerns are appropriately addressed.

Natural gas infrastructure

Question 47: Natural gas and pipeline advocates vocally hailed your nomination as a sign that future and pending fossil fuel infrastructure will be rubber stamped on your watch. What will you do to demonstrate your independence from fossil fuel special interest groups?

Answer: If confirmed, you have my steadfast commitment that I will review the record in each case with an open mind and with the aim of understanding the points of view of all participants to the case. I believe in the importance of robust and transparent participation of all interested parties in matters before FERC. To be an effective regulator, you must be able to call the balls and strikes, and if confirmed, I intend to do that in an unbiased and transparent fashion. During my 8 ½ years as a state utility regulator in Pennsylvania, I have learned the value of considering all points of view before making a decision and if confirmed, I will continue that practice at FERC.

Question 48: How will you evaluate climate impacts during the review of applications for the construction and operation of natural gas pipelines?

Answer: I understand that this issue has been raised in many of the pipeline cases recently before the Commission. I am aware that the Commission's environmental documents contain a section describing impacts potentially related to climate change for regions in which a project is located. If confirmed, I will review this matter with my colleagues to determine how the Commission may best address such information in its decisions.

The Holman Rule

Question 49: What is your position on the Holman Rule, which allows any member of Congress to propose amending an appropriations bill to single out a government employee or cut a specific program?

Answer: I have no position on the Holman Rule.

Question 50: If confirmed, will you support or oppose Congressional passage of an amendment under the Holman Rule that targets one of your employees?

Answer: It is within the purview of Congress to decide whether or how to implement the Holman Rule.

Question 51: If confirmed, do you believe that you will be better able to recruit and retain top talent at FERC if Congress is able to individually target employees based on political criteria?

Answer: I was very pleased to hear that the Partnership for Public Service ranked FERC as the fourth best place to work among midsize federal agencies, based on the Federal Employee Viewpoint Survey conducted by the U.S. Office of Personnel Management. In my estimation, FERC is filled with talented employees and I am optimistic that the agency will continue to recruit such talent.

Question 52: Do you support or oppose Congress targeting and altering the salaries of individuals at FERC?

Answer: As I stated previously, it is within the purview of Congress to decide whether or how to implement the Holman Rule.

Question 53: How would you describe the division of responsibility and authority between Congress and FERC on agency personnel issues?

Answer: FERC is an independent agency funded by assessments on the utilities it regulates. As a general matter, I believe individual agencies are best suited to deal with their own personnel issues. However, if confirmed, I am aware that I am bound to act within the authority delegated to FERC by Congress.

Questions from Senator Al Franken

Question 1: Minnesota and other states have renewable portfolio standards that drive the transition to clean energy. Do you believe states should be able to implement these kinds of policies without federal interference? And furthermore, do you think that FERC should be able to coerce states into changing energy policies?

Answer: As a member of a state regulatory commission, I have a great appreciation for the need for FERC and the states to respect each other's boundaries. I am also aware that on May 1-2, 2017, the Commission held a technical conference on the interplay of state policy goals and the wholesale energy and capacity markets, and I believe this was a good first step in addressing the issue. At the conference, FERC Commissioners and state commissioners engaged in a discussion of potential options for solutions to reconcile the competitive market framework with the policy interests of states. If confirmed, I look forward to further examining this issue and reading the post-technical conference comments to determine if any next steps are necessary.

Question 2: As Senator Cortez Masto mentioned in the hearing, late last year, FERC started a process to "remove barriers to the participation of electric storage resources and distributed energy resource aggregations in the capacity, energy, and ancillary service markets."

- a. What role do you see energy storage playing in the future in the organized wholesale electricity markets and transmission system?
- b. And how can FERC help ensure that energy storage is receiving proper compensation for the multiple benefits it provides to the grid?

Answer: As I mentioned at my confirmation hearing, I believe that we should seek to rely on all types of energy resources to meet the nation's needs, which includes electric storage resources. Participation of electric storage resources is the subject of an ongoing proceeding at the Commission in which the Commission proposed a number of reforms to remove barriers to the participation of electric storage resources and distributed energy resource aggregations in the organized wholesale electric markets. In addition, the Commission also issued a Notice of

Proposed Rulemaking on the Reform of Generator Interconnection Procedures and Agreements in December 2016 in which it proposed a number of reforms designed to improve certainty, promote more informed interconnection, and enhance interconnection processes for all resources interconnecting to the transmission system, including new electric storage resources. If confirmed, I look forward to reviewing this matter with my colleagues.

I understand that the Commission has taken several actions to ensure adequate compensation for resources, including electric storage resources. For example, in Order No. 755, FERC provided for compensation of fast-acting resources, such as storage, to provide frequency regulation service. Similarly, FERC's price formation effort has identified opportunities to improve energy market price signals. Actions like a change in the settlement interval and the requirement to trigger shortage pricing any time a physical shortage occurs should provide more accurate price signals for flexible resources like energy storage. Further, in January, FERC issued a policy statement providing guidance to storage resources seeking compensation for both cost-based and market-based services.

Question 3: FERC Order 1000 was intended to help identify such transmission needs and solicit competitive transmission projects by requiring regional transmission planning and interregional coordination.

- a. Do you support FERC order 1000?
- b. What are the barriers to interregional transmission lines and what can FERC do to remove those barriers?

Answer: My understanding is that Order No. 1000 is intended to promote the identification of more efficient or cost-effective transmission facilities and to remove certain obstacles to the development of those facilities. I support those goals. I also support continued review of Order No. 1000 to ensure that it is functioning as intended and to explore whether there are further steps that the Commission to advance the goals of Order No. 1000. To that end, the Commission convened a technical conference in June 2016 on competitive transmission development and requested post-technical conference comments on several issues, including issues related to regional transmission planning and competitive transmission development. If confirmed, I will review this record with my colleagues.

Question 4: A few years ago during the severe winter polar vortex, coal stockpiles at utilities in Minnesota repeatedly dropped to dangerously low levels, due to inadequate rail delivery of coal. At least four coal power plants in Minnesota were shut down, so that their stockpiles could be built back up before the cold winter months. And in the end, the cost of this unreliable rail service was passed on to the public, as they paid for the more expensive replacement power that was purchased to make up for lost generation.

During this time period, I sent a letter to FERC highlighting my concerns about Minnesota utilities' low coal stockpiles, and asking FERC to work with all other stakeholders to find a solution to this ongoing issue.

- a. What do you think FERC should do to mitigate the problems with rail delivery issues,

since these issues impact the electricity markets?

- b. Last Congress I introduced the Emergency Fuel Supply Coordination Act, which would require coordination among key federal agencies when a fuel emergency is declared. Do you think this coordination is a good idea, and in what ways could FERC support such an effort?

Answer: I understand that the Commission's authority over this matter is limited. Although the Commission does not have authority over the shipment of coal over the nations' rail lines, if confirmed, I would be willing to meet with utilities or the rail regulators to assess what type of assistance the Commission may provide under the circumstances at the time. I believe that coordination among key regulators when a fuel emergency is declared is a prudent step to take.

Question 5: Because of its low prices, more and more Americans are using natural gas, both in homes and in industry. And the DOE Energy Information Administration projects that use of natural gas will continue to grow. At the same time, the federal government has already issued final authorizations for liquid natural gas export volumes of over 72 billion cubic feet per day—which is equal to about 96 percent of U.S. demand.

Explain to me how increasing exports of domestic natural gas won't drive up the price Americans pay to power their factories and heat their homes. Does FERC have a role to play here in making sure we are not unnecessarily increasing the cost of energy for Americans?

Answer: Section 3 of the NGA addresses imports and exports of liquefied natural gas (LNG). Jurisdiction under section 3 is shared between DOE and the Commission. Although the Commission authorizes the construction of facilities, it is DOE that has jurisdiction over the import or export of the natural gas commodity.

Question 6: Last month, Secretary Perry ordered a 60-day review of U.S. electricity policy to determine whether coal and nuclear plants are being "unfairly" pushed off the grid. He suggested that renewable resources—like wind and solar—were threatening grid reliability and that because of that, we need to prop up coal and nuclear plants. Since FERC is tasked with ensuring the reliability of the grid, do you share Secretary Perry's concerns about increasing integration of renewables?

Answer: It is my understanding that the study referenced in your question is aimed at reviewing the value of baseload resources in organized markets to make sure these resources are being adequately compensated for their attributes. FERC clearly has a role to play in this discussion as it is FERC's responsibility under the Federal Power Act to ensure the reliability of the bulk power system. In fulfilling that responsibility, FERC works closely with the North American Electric Reliability Corporation, which FERC has certified as the Electric Reliability Organization, as well as with the industry and other interested stakeholders. In the midst of a transition in our nation's energy resource fuel mix, it is important to maintain our commitment to ensuring grid reliability.

Question 7: As you know, FERC's approval process for natural gas pipelines has gained national attention. Former Chairman Norman Bay released a statement on his last day

recognizing the increased public interest surrounding the approval process and encouraging the agency to change how it determines whether approving a pipeline is within the national interest. Traditionally, FERC has relied on a contract with potential shippers to show market demand and therefore demonstrate that a project is in the national interest. But, this is fairly myopic view and Mr. Bay suggests that more comprehensive cost-benefit analysis may be necessary. Mr. Bay also recommended that FERC consider the environmental impacts of increasing gas production allowed by pipeline construction as well as an assessment of lifecycle greenhouse gas emissions. Do you agree with the former Chairman's assessment? If not, why not, and if so, what changes would you suggest?

Answer: The Natural Gas Act requires the Commission to determine that proposed pipeline projects are consistent with the public convenience and necessity. Whether the pipeline is "needed" is part of that determination. If confirmed, I look forward to working with my colleagues to review the Commission's policies for pipeline applications to ensure that all relevant factors are appropriately considered in the Commission's review process.

It also is my understanding that the Commission's analysis of environmental issues for a proposed natural gas pipeline includes greenhouse gas emissions associated with the construction and operation of the project, as well as impacts potentially resulting from climate change over the region in which the project is located. If confirmed, I look forward to working with my colleagues in determining how information regarding climate impacts may be addressed appropriately in such proceedings

Question 8: Senator Shaheen and I recently reintroduced legislation, the Public Engagement at FERC Act (S. 1240), that will improve public involvement at the FERC and facilitate advocacy at the agency on behalf of residential and small commercial energy consumers. Specifically, the Public Engagement at FERC Act would build off existing language in the Public Utility Regulatory Policy Act (PURPA) and establish an Office of Public Participation and Consumer Advocacy to ensure the public has a strong role in shaping our nation's energy future. It is important that anyone who assumes the role of a FERC Commissioner understands how their decisions are directly or even indirectly impacting private citizens. When FERC evaluates whether a project or agreement is "in the public interest" it is vital that the Commission indeed consult the public.

- a. Do you agree that public engagement should be prioritized during the various proceedings administered by FERC?
- b. If confirmed, what steps will you take to make commission proceedings and processes more accessible to the public?
- c. While I'm not asking you to weigh in on the legislation directly, do you agree with allowing more public participation in the agency through the creations of a dedicated office?

Answer: I agree that public engagement is important to FERC proceedings. Development of a record that reflects comments from all sides of an issue enhances FERC's ability to make appropriate decisions.

I understand that there are already a number of ways for members of the public, individually or as a group, to be heard at FERC. For example, they may intervene and actively participate in FERC proceedings and they may file comments on rules and regulations that FERC proposes in Notices of Proposed Rulemakings. In addition, it is common for state utility commissions, who seek to protect the interests of retail and residential customers, to intervene directly in FERC cases and comment on FERC's proposed rules and regulations. If confirmed, I will work with my colleagues to identify further steps that FERC could take to make its proceedings and processes more accessible to the public.

Question 9: In 2006, FERC started requiring wholesale generators to file Form 556 Certificate of Qualifying Facility (QF) Status for a small power production facility. I'm concerned that some small, community wind facilities across the country may have missed this change. These projects went through an extensive study process to facilitate interconnection of their wind projects with the transmission grid. These interconnections were ultimately approved by FERC as exempt wholesale generators and have been operating safely. However, in 2006 FERC established a filing requirement for all facilities larger than 1MW, but some missed this change. The filing requires announcing the total electricity generated by the QF.

In one case, a company MinWind failed to start filing with FERC, and subsequently sought a waiver from FERC for the Form 556 filing arguing that they did not know about the rule. But, the waiver was denied and the company was assessed a substantial repayment obligation equivalent to the interest that they have been unfairly accruing since 2006. The amount was large enough that they were forced to file for bankruptcy. While I do not know the specifics of this case, in general, this seems like an onerous requirement that if not handled appropriately could drive more companies into bankruptcy. Will you commit to working with me to find a solution to this issue?

Answer: I appreciate your concern and agree that FERC-regulated entities must have adequate notice of regulatory requirements. If confirmed, I would be pleased to work with you and I commit to understanding the issue more fully to review this matter with my colleagues.

Question from Senator Steve Daines

Question: Your experience as a utility commissioner in Pennsylvania will be invaluable to your role at FERC. However, as you know, the energy markets in Montana are regulated much differently than they are in Pennsylvania. As commissioner, will you take into consideration the makeup of different regions when making decisions at FERC?

Answer: As I mentioned at my confirmation hearing, I appreciate that regions of the country have chosen differing paths for providing energy services to customers. I respect these differences and can assure you that I will take them into consideration, if I am confirmed.

Questions from Senator Joe Manchin III

Question 1: West Virginia's existing installed capacity is 90% coal (12,584 MW). The remainder is natural gas, hydro, wind and a little bit of oil. Overall, in PJM, coal represents 34% of capacity and natural gas is slightly higher than that. The Energy Information Administration

states that “West Virginia typically generates more electricity than it consumes. Although more than two-fifths of West Virginia households use electricity as their primary source for home heating, retail sales to all customers account for less than half of West Virginia's net electricity generation. As a result, West Virginia is a net supplier of electricity to the regional grid. West Virginia is a leader in the nation in net interstate sales of electricity.”

Do you believe that the regional grid (PJM specifically) can continue to operate without the contributions of West Virginia's fleet of power plants?

Answer: Senator, West Virginia is a power production state just like Pennsylvania. Without electrons coming from West Virginia, Pennsylvania, and Ohio, there would be serious power reliability issues in the PJM marketplace. We would not have adequate power flows or meet grid reliability standards without the contributions of West Virginia's power fleet as part of the grid interconnect.

Question 2: Earlier this week, E&E news published an article regarding the cybersecurity challenges facing our natural gas infrastructure. They highlighted a five-year old attack on our nation's natural gas utilities which was perpetrated by Chinese hackers who were also members of that country's military. Gerry Cauley, President of the North American Electric Reliability Council (NERC) – a frequent witness before this committee stated that “Undercutting the gas supply is certainly a threat to the electric system.” While NERC, utilities, and regional transmission operators (RTOs) like PJM are planning for multiple scenarios like extreme weather events (a repeat Polar Vortex for example), I'm also interested in your perspective on how FERC and DOE can further support natural gas utilities in their efforts to harden their systems not just against natural threats but against cyber threats.

Understanding that these energy stakeholders can't always pull back the curtain for us because of the threat of revealing too much to potential enemies, what more can DOE and FERC do to support natural gas pipeline operators in the face of these threats?

Answer: I understand that FERC provides assistance to pipeline operators with identification and application of best practices for cybersecurity measures. As examples, FERC and Transportation Security Administration (TSA) staff have developed a joint, voluntary assessment program to conduct in-depth cybersecurity reviews of pipeline entities, and FERC has established a similar program with the U.S. Coast Guard for LNG terminals. In addition, I understand that TSA is reviewing its voluntary cybersecurity guidelines for pipelines and that FERC has offered to assist them with this initiative.

I also understand that through the work of Joe McClelland and the Office of Energy Infrastructure Security (OEIS), FERC assists states in better understanding cybersecurity threats to pipelines. For example, in conjunction with other federal agencies, FERC has facilitated both unclassified and classified security briefings to state regulators. OEIS has also played a key role in helping state regulators better understand the cyber security facing the energy industry. More recently, the FERC has promoted the adoption of best practices by providing voluntary architectural reviews of the control systems of numerous electric and gas utilities in the U.S.

In addition, per its authority under the Natural Gas Act, FERC could explore whether further steps are appropriate to alleviate potential industry concerns about recovery of costs for cybersecurity measures.

Question 3: One of the major criticisms that pipeline opponents in state is that FERC does not allow for enough public engagement and is “abusing” their power. You have expressed support for the importance of public engagement in the siting of pipelines. As you know, there are several major pipelines being developed in the mid-Atlantic and Northeast. I support the environmentally responsible development of energy infrastructure as long as that development includes public engagement – particularly for landowners along the pipeline route – so that their voices are heard.

Can you explain how you will support public engagement at FERC?

Answer: As a sitting public utility commissioner, I understand the need for, and value of, public engagement in making decisions regarding infrastructure. The public needs to have peace of mind that we can build out our energy infrastructure safely and with a steadfast commitment to the environment. From my Pennsylvania experience, it is critically important that pipeline developers engage stakeholders in a transparent and collaborative process to achieve a world-class pipeline system. If confirmed, I will review the Commission’s public engagement process with my colleagues to best determine ways for effective public engagement, particularly with those whose lands may be crossed by a proposed pipeline route.

Question 4: In 2011, FERC issued an Order – Number 1000 – which asserted agency jurisdiction over transmission planning in areas that were previously thought to be a state’s responsibility. It’s my understanding that – while intended to make transmission planning easier – it has bogged down the process more. Former FERC Commissioner Tony Clark expressed concern that “there is so much process built into Order 1000,” that each step of that process “becomes an opportunity for litigation and delay.” Andy Ott, the CEO of PJM, concluded that Order No. 1000 “was almost like a solution in search of a problem. ... It’s actually creating more challenges to investment.” Nick Brown, the CEO of SPP, stated that Order No. 1000 has “created more overhead and uncertainty at a time we didn’t need more overhead in order to invest in transmission.” We need transmission planning to work efficiently, and we need costs to be allocated where they belong.

Will you work with the Committee on ways to improve transmission planning and cost allocation?

Answer: If confirmed, I will look forward to working with both my colleagues at the Commission and with the Committee on issues related to transmission planning and cost allocation.

The Commission issued Order No. 1000 in 2011. I note that as the transmission planning regions have implemented their Order No. 1000-compliant regional transmission planning processes and interregional transmission coordination procedures, the Commission has continued to consider the issue of transmission planning and cost allocation. I support this continued

review. Specifically, the Commission convened a technical conference in June 2016 on competitive transmission development and requested post-technical conference comments on several issues, including issues related to competitive transmission development, interregional transmission coordination, and regional transmission planning.

Questions from Senator Lamar Alexander

Question 1: In the past five years, six nuclear reactors have shut down prematurely due in part to financial concerns. Analysts have warned dozens of additional nuclear reactors could potentially shut down over the next 10 years due to market challenges. New York and Illinois have taken steps to help keep the nuclear reactors within their borders operating. These states recognize the importance of reliable nuclear power, which provides 60% of our country's carbon-free electricity. What can the Federal Energy Regulatory Commission do to help keep existing nuclear reactors operating and preserve low-cost, reliable, and clean nuclear power for the United States?

Answer: Senator, let me begin by applauding you for your leadership on behalf of nuclear generation in the U.S. The issues facing the nuclear industry are daunting at so many levels.

Although the Commission's policies are resource- and fuel-neutral, I do believe that we should seek to develop and rely on all types of resources to ensure competitively priced and reliable energy supplies. In addition, I believe that resources should be fairly compensated for the value they provide the system.

FERC has taken several steps to address this issue. For example, FERC held a technical conference on May 1-2, 2017, to discuss the interplay between state policy goals and wholesale markets. FERC also has an ongoing price formation effort in exploring whether energy and ancillary service prices appropriately reflect the costs to serve load. FERC's price formation initiative, which commenced in 2014, has gathered input from stakeholders and market experts to find areas for potential reform in the RTO/ISO energy and ancillary services markets. In addition, FERC has approved final rules reforming shortage pricing, settlement intervals, and offer caps in RTO/ISO markets.

If confirmed, I look forward to evaluating the issues explored at the technical conference and the Commission's other proceedings on this issue.

Question 2: The federal wind production tax credit (PTC) has been in place for twenty-five years and has been extended by Congress ten times. The most recent extension in 2015 will cost taxpayers more than \$20 billion over ten years. The wind PTC not only costs the taxpayers billions, it also distorts the price of electricity. The subsidy to Big Wind is so generous that, in some markets, wind producers can literally give their electricity away and still make a profit. This phenomenon is called negative pricing. What can the Federal Energy Regulatory Commission do to minimize the unfair impact that negative pricing has on reliable generation like coal, natural gas, and nuclear?

Answer: Senator, as I understand it, Congress has agreed to phase-out of the federal wind production tax credit (PTC), so we may see a transition in this situation shortly. However, currently RTO/ISO market dispatch rules are designed to find the lowest cost of dispatching resources, based on their bids, to serve load while respecting transmission system limitations. During the May 1-2 technical conference, I understand that several panelists suggested that the centralized wholesale market operators should explore whether negative pricing continues to meet the goals of finding the lowest cost of dispatching resources. If confirmed, I look forward to evaluating the issue.

Questions from Senator John Hoeven

Question 1: Electric reliability is a critical issue, especially as it relates baseload power and ensuring our country has the assets needed to maintain low-cost electricity.

For example, the previous Administration's EPA has promulgated substantial new regulations on electricity producers that would have subjected them to unachievable mandates and artificial compliance schedules. Together, the EPA's unwarranted attempts to reduce emissions would have driven up electricity rates for customers and potentially compromise the reliability of our power grid.

In another example, the Aliso Canyon natural gas storage facility provides electricity for southern California. However, state regulators have shut down the facility and now the Energy Department has registered concerns about having a sufficient baseload for summer energy demand.

- How will you approach reliability issues going forward?
- How do fossil fuels play a role in ensuring electric reliability and baseload power?

Answer: The reliability of the nation's electric grid is paramount because it is essential to a robust and growing economy. I recognize the importance of FERC's responsibilities under the Federal Power Act with respect to the reliability of the bulk power system.

In fulfilling those responsibilities, FERC works closely with the North American Electric Reliability Corporation, which FERC has certified as the Electric Reliability Organization, as well as with the industry and other interested stakeholders. In the midst of a transition in our nation's energy resource fuel mix, it is important to maintain our commitment to ensuring grid reliability. I believe that a resource portfolio that includes the use of fuels that support the provision of baseload power makes an important contribution toward that goal.

Question 2: In order to become truly North American energy secure, we need the infrastructure to deliver our energy resources from producers to consumers. I have sponsored the North American Energy Infrastructure Act that would require FERC to approve natural gas import or export applications to Canada or Mexico within 30 days of filing.

- What is your view on the increased need for energy infrastructure?
- What is FERC's role in ensuring adequate pipeline capacity?

- Do you support efforts to increase our energy infrastructure network with Canada and Mexico?

Answer: I agree that we need to ensure there is adequate infrastructure to best assure the availability of reliable and reasonably priced energy. Under the Natural Gas Act, the Commission is required to approve proposed natural gas pipeline projects that are required by the public convenience and necessity, which may include facilities for import and export.

Question 3: In North Dakota, rural electric co-ops ensure that over 350,000 consumers have access to reliable and affordable electricity. The Federal Power Act exempts rural electric co-ops from FERC jurisdiction and this statutory exemption contributes to the state's affordable electricity rates.

- Do you plan to adhere to the Federal Power Act and continue to exempt rural electric co-ops from FERC jurisdiction?

Answer: Section 201(f) of the Federal Power Act exempts electric cooperatives that receive a certain type of financing or that sell less than a certain amount of electricity per year from certain provisions of the Federal Power Act. If confirmed, I commit to adhere to the provisions in the Federal Power Act regarding jurisdiction over electric cooperatives.

Question 4: Two of the industries FERC regulates – electricity and natural gas – are growing closer together as gas increases its share in electricity markets. This ties together the reliability of natural gas supply and the reliability of electricity supply like never before. This makes it all the more important that gas pipelines get sited timely when they are needed and not get bogged down in environmental reviews that, in the name of being thorough, lose all common sense. We have had projects delayed, for example, by consideration of greenhouse gas emissions. Fortunately the guidance requiring consideration of GHGs was rescinded in April.

Both Congress and the Administration have made it plain in law and by executive action that they want infrastructure reviews to be accelerated.

- Will you work to ensure that gas infrastructure is sited promptly and not unnecessarily delayed by overly bureaucratic reviews?

Answer: I agree that we need adequate pipeline infrastructure to allow for the delivery of reliable and reasonably priced gas supplies to consumers. However, as a regulator, I also need to make sure that gas pipelines go through a review required by law. If confirmed, I will work with my colleagues to ensure that we strike that right balance to ensure all relevant factors are considered.

Questions from Senator Angus S. King, Jr.

Question 1: How do you view the relationship between state energy policies, such as Renewable Portfolio Standards, and the wholesale electricity markets? Do you believe there is a

conflict present between state goals and the operation of those wholesale markets? How do you think that conflicts that arise can and should be addressed by FERC?

Answer: As a state regulator, I appreciate the role that states must continue to play in setting state energy policies. However, the Commission has a statutory responsibility to both promote adequate investment in needed energy infrastructure and ensure that the rates subject to the Commission's jurisdiction are just and reasonable. I understand the Commission recently held a technical conference with the objective of further exploring how the competitive wholesale markets can incorporate resources promoted by state energy policies while ensuring that wholesale electricity rates remain just and reasonable and that the reliability of the bulk power system is maintained. If confirmed, I look forward to working with my colleagues on this matter.

Question 2: Do you believe that the competitive wholesale electricity markets are adequately incentivizing the development of renewable energy? If not, what market mechanisms can be put into place to do so?

Answer: I understand that the Commission has long supported the development of competitive wholesale power markets that support investment and are fair to all types of technologies and sources of power, including renewable energy. I believe that the Commission should continue to assess our competitive power markets in the upcoming years to, among other things, ensure they properly value the contributions of all types of resources.

Question 3: Do you believe FERC has a role to play in supporting and helping to manage the increase of distributed energy resources connected to the grid? If so, what is that role?

Answer: I support efforts by FERC to remove barriers to the participation of new technologies such as distributed energy resources in the markets it oversees. In November 2016, the Commission issued a Notice of Proposed Rulemaking on Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, in which, among other things it proposed a number of reforms to remove barriers to the participation of distributed energy resource aggregations in the organized wholesale electric markets. If confirmed, I look forward to reviewing the record on this matter and considering these important questions with my colleagues.

Question 4: FERC has held that the costs of transmission infrastructure built to fulfill a reliability need can be recovered regionally from all beneficiaries. If a resource other than traditional transmission infrastructure, such as energy storage or a combination of other resources, is proposed and can meet the same reliability need, should the cost of that project be recovered in the same manner?

Answer: In Order Nos. 890 and 1000, the Commission allowed consideration of non-transmission alternatives, including demand response resources, energy efficiency measures, and generation resources, as part of the transmission planning process. In addition, the Commission recently issued a policy statement on cost recovery by electric storage resources, clarifying its precedent and providing guidance regarding electric storage resources' ability to receive cost-

based rate recovery for certain services while also receiving market-based revenues for providing market-based rate services. If confirmed, I will review this matter with my colleagues.

Question 5: New England currently pays by far the highest costs for transmission in all of the organized markets, and yet billions of dollars in additional investment in transmission will be needed in order to unlock new renewable resources in the region. What will you do to keep transmission costs under control for consumers in New England?

Answer: Transmission plays a key role in reliably serving customers by providing access to energy sources. ISO-NE recently implemented an Order No. 1000-compliant regional transmission planning process, which is designed to select the more efficient or cost effective transmission facilities that satisfy the identified need. The Commission, in June 2016, also held a technical conference to explore issues related to the competitive transmission development processes that were established to comply with Order No. 1000, including matters of cost containment. As I stated during my confirmation hearing, if confirmed, I will bring a steadfast commitment to upholding FERC's mission to ensure that the rates and terms of service by which utilities operate are just and reasonable. This includes transmission rates.

Question from Senator Bill Cassidy

Question: If confirmed, one of your key responsibilities as a Commissioner will be to ensure grid reliability. I want to bring your attention to the worrisome decision by the California Public Utilities Commission regarding the shutdown of the Alison Canyon underground gas storage facility. The Department of Energy and SoCalGas have both written letters to the commission warning of possible blackouts and supply disruptions due to the Aliso Canyon decision, which I would like to submit for the record. This appears to be a significant problem waiting to happen.

Will you commit to studying this issue and ensure that the FERC does everything in their authority to protect the reliability of the grid for potentially effected consumers all along the transmission line?

Answer: Because, as you note, grid reliability is a critical aspect of the Commission's mission, if confirmed, I will work with my colleagues to best ensure the reliability of the grid.

Questions from Senator Tammy Duckworth

Question 1: With respect to concerns for our aging energy infrastructure, how do you view the need to balance what consumers can afford with the tremendous expense to upgrade existing facilities and/or to add new infrastructure?

Answer: The Commission's statutory responsibility is to both promote investment in energy infrastructure and ensure rates subject to the Commission's jurisdiction are just and reasonable. A record that includes wide stakeholder input, including input from consumers, helps the Commission to strike the right balance between these critical interests.

Question 2: Just and reasonable cost allocations for electric transmission projects have been a subject for discussion at FERC. As I'm sure you are aware, FERC Order 1000 established the "roughly commensurate" criteria for costs and benefits of transmission. How would you define "roughly commensurate"? Is that a standard that you believe is appropriate for all infrastructure costs?

Answer: I am aware that FERC, in light of a decision from the U.S. Court of Appeals for the Seventh Circuit, has required that the costs of certain regional and inter-regional transmission facilities be allocated in a manner that is "roughly commensurate" with their benefits. Thus, FERC has held that entities that receive no benefit from transmission facilities should not be involuntarily allocated any of the costs. I see the standard as setting forth a useful general principle, but I cannot now say whether it would necessarily be appropriate for all types of infrastructure costs.

Question 3: Regional Transmission Organizations (or RTOs/ISOs) typically build or upgrade new infrastructure to remedy reliability violations. What role, in your view, should cost play in the selection of transmission projects under order 1000 and as planned by RTOs?

Answer: In 2011, the Commission issued Order No. 1000, which established new requirements with respect to transmission planning and cost allocation. My understanding is that Order No. 1000 is intended to promote the identification of more efficient or cost-effective transmission facilities and to remove certain obstacles to the development of those facilities. Consistent with those goals, Regional Transmission Organizations and Independent System Operators consider costs in their regional transmission planning processes.

I note that as the transmission planning regions have implemented their Order No. 1000-compliant regional transmission planning processes and interregional transmission coordination procedures, the Commission has continued to consider the issue of transmission planning and cost allocation. I support this continued review. Specifically, the Commission convened a technical conference in June 2016 on competitive transmission development and requested post-technical conference comments on several issues, including issues related to competitive transmission development, interregional transmission coordination, and regional transmission planning. If confirmed, I will review this record with my colleagues.

Question 4: FERC Order 1000 provided opportunity for competitive transmission investments by independent transmission companies. What, if any, transmission investments do you feel should be exempted from the order 1000 competitive transmission process?

Answer: There are some existing limits to the transmission projects that are subject to competitive transmission development processes pursuant to Order No. 1000. In Order No. 1000, the Commission only required competitive transmission development processes for transmission facilities selected in the regional transmission plan for purposes of cost allocation and, in its orders on compliance, allowed certain transmission planning regions to exempt from their competitive transmission development processes transmission facilities needed in the near-term to address reliability concerns. In addition, the requirement in Order No. 1000 to eliminate a federal right of first refusal does not apply to local transmission facilities, which are defined as

transmission facilities located solely within a public utility transmission provider's retail distribution service territory or footprint that are not selected in the regional transmission plan for purposes of cost allocation. This requirement also does not apply to the right of an incumbent transmission provider to build, own, and recover costs for upgrades to its own transmission facilities, regardless of whether an upgrade has been selected in the regional transmission plan for purposes of cost allocation.

In June 2016, the Commission convened a technical conference on competitive transmission development, at which the speakers discussed exemptions from the competitive transmission development process. In its post-technical conference request for comments, the Commission included questions on whether the Commission should broaden or narrow the type of transmission facilities that must be selected through competitive transmission development processes. If confirmed, I will review this record with my colleagues.

Question 5: FERC's use of RTOs to plan and manage competitive markets has recently come under fire from various public interest groups. They point out that public interest has an extremely limited voice in RTO Stakeholder discussions and RTO actions taken behind closed doors seem to be condoned by FERC. Do you believe this is a valid concern and if so how would you address it? If not, where and how do you see public interest being considered at FERC?

Answer: FERC has taken a number of actions over the years to enhance the transparency and responsiveness of RTOs. For example, Order No. 719 required RTOs and ISOs to demonstrate how they meet four criteria for responsiveness to their customers and other stakeholders: inclusiveness, fairness in balancing diverse interests, representation of minority positions, and ongoing responsiveness. I support these actions and believe that FERC should continue to work to ensure that the RTO and ISO processes are open and transparent.

Question 6: What role should FERC play in any attempts to work toward a cleaner environment?

Answer: FERC policies focus on ensuring that the rules that govern organized and bilateral wholesale electric markets promote the delivery of reliable power in a manner that is nondiscriminatory and resource-neutral, resulting in efficient price signals that market participants can rely on to make investment decisions. Although the drivers of power supply changes are largely outside of the Commission's jurisdiction, we must be aware of, and adapt to, these developments in order to carry out our statutory responsibilities to ensure just and reasonable rates, a reliable power grid, and fair and efficient markets.

Question 7: The recent "Wannacry" ransomware incident has once again brought cybersecurity to the forefront. Should FERC do more to ensure best practices are shared among utilities regarding detecting and preventing cybersecurity threats? How much information should be shared with state regulators? What role do you see at FERC for cybersecurity issues?

Answer: My understanding is that FERC currently provides leadership, expertise, and assistance in identifying, communicating, and seeking comprehensive solutions to significant

potential cybersecurity risks to FERC-jurisdictional energy infrastructure. Among other efforts, FERC collaborates with the Electricity Subsector Coordinating Council, which serves as the principal liaison between leadership in the Federal government and in the electric power sector, with the mission of coordinating efforts to prepare for national-level incidents or threats to critical infrastructure. I support FERC's continued work on these issues, in coordination with Federal and state government partners, as well as industry stakeholders.

Specific to the electric sector, FERC is promoting development and implementation of best practices. This work complements the mandatory reliability standards adopted pursuant to section 215 of the Federal Power Act that provide a good foundation for protecting the bulk power system from cybersecurity threats. FERC's best practices efforts include conducting analysis and outreach to share threat information and best practices for defensive and recovery measures to help mitigate risk.

Moreover, considering the interconnectivity of the utility systems as well as the nature of cybersecurity threats, I believe it is important to work closely with the states to share threat information and help implement best practices. In support of this goal, FERC has been assisting the states to better understand the cybersecurity threats to pipelines and has facilitated numerous information and training sessions with state utility commissions. In addition, FERC has coordinated with other federal agencies to facilitate both unclassified and classified security briefings to state regulators.

Question 8: States that are split into two RTOs are encountering issues where generating resources have been separated from the loads that they were built or contracted to serve. How should proximity to resources, actual power flows, and pre-existing transmission rights be considered in RTO modeling?

Answer: I am aware that the Commission has several open proceedings regarding inter-RTO coordination, so I cannot comment on them. If confirmed, I will review this matter with my colleagues.

Questions from Senator Rob Portman

Question 1: During the 114th Congress, Sen. McCaskill and I co-sponsored legislation that became Title 41 of the FAST Act, 42 U.S.C. § 4370m ("FAST-41"). FAST-41 created a new process to streamline permitting for significant infrastructure projects designated as "covered projects." Would it be beneficial for the FERC permitting and licensing process to operate within this new regulatory construct?

Answer: I understand that the Commission and its staff have been actively involved with the Steering Council and the Executive Director created under Title 41 of the Fast Act since the statute was enacted in December 2015. If confirmed, I will review these efforts with my colleagues to determine how an independent regulatory agency like the Commission can best support FAST-41's goals of transparency and accountability.

Question 2: Do you support designating FERC as the lead agency in the licensing and permitting process, including the ability to set schedules for the review, comment, and permitting activities of other federal agencies?

Answer: I understand that, under both the Natural Gas Act and the Federal Power Act, the Commission is the lead agency responsible for the environmental review for interstate natural gas pipeline infrastructure as well as for non-federal hydropower. However, the permitting requirements established by federal law are complex and a decision on a project does not rest with any single agency. If confirmed, I will review with my colleagues the issue of streamlining the Commission's permitting process while satisfying other agency obligations and concerns.

Question 3: Do you believe the current hydropower licensing process is well functioning? If not, what changes do you recommend?

Answer: Senator, I have heard a number of concerns regarding FERC's hydropower licensing process. It is my understanding that the current hydropower licensing process is complex and involves not only input from numerous stakeholders but also gives mandatory conditioning authority to multiple agencies. If confirmed, I will review the licensing process with my colleagues to determine what is causing the delays and consider ways to further improve the licensing process.

Question 4: What are your views on how RTO-administered capacity markets are working? Specifically, are these markets supporting the development of a diverse array of electric generating facilities in light of past and pending coal plant retirements, while minimizing adverse impacts on consumers? If not, what steps would you take to improve or modify them?

Answer: I believe that RTO-administered capacity markets have achieved their objectives in procuring adequate resources to meet their reliability criteria. Let me start off by giving you a few good facts to consider. Since 2008, in the PJM footprint, wholesale power prices have dropped over 56 percent. In my state of Pennsylvania, natural gas has increased its share of Pennsylvania's power generation over 30 percent. In turn, total carbon dioxide emissions in Pennsylvania have fallen over 30 percent. Ohio and Pennsylvania are seeing new investments coming from Utica and Marcellus Shale producers. Examples include: new ethylene cracker facilities, increased refinery investments, short line rail upgrades and new tubular steel production opportunities. Cheap power prices are making Ohio and Pennsylvania attractive places to open new manufacturing facilities. And yes, we are seeing a huge shift in our generation fleets with new state of the art combined cycle gas plants being build. This is truly a national success story when you consider where the U.S. was in 2005.

However, I am also aware that certain resources are retiring and that additional generation facilities may be needed to meet electricity demand. Plus, it may not be prudent to have one generation resource dominate the power mix in our markets. Simply put, we need fuel diversity and FERC is working hard to examine these issues to make sure capacity markets are providing appropriate price signals. Additional changes may need to be made to centralized capacity markets to support the development of electric generating facilities needed to meet system needs.

If confirmed, I will work with my colleagues to ensure that the organized capacity markets operate as intended.

Question 5: I represent a state that choose to deregulate its electricity sector and leverage free market principles to deliver safe and reliable electricity to Ohio consumers. I am one of the few members on this committee who represents a state that has deregulated its electricity market. The rapid adoption of new technologies, low natural gas prices, and out-of-market subsidies have been distressing competitive wholesale electricity markets. If confirmed, will you support FERC taking a leadership role in protecting wholesale electricity markets in order to ensure that electricity in these markets continues to be delivered safely and reliably?

Answer: One of FERC's core responsibilities is to ensure that electricity is delivered reliably and that wholesale electricity rates are just and reasonable. If confirmed as a FERC commissioner, I commit to work with my colleagues to ensure the Commission fulfills its role under the Federal Power Act.

Question 6: The Federal Power Act directs FERC to ensure that wholesale power rates are "just and reasonable." How do you believe that mandate applies today in the world of RTOs?

Answer: RTOs administer day-ahead and real-time energy markets that harness the forces of competition to ensure least-cost, reliable energy supplies. FERC ensures the justness and reasonableness of RTO wholesale power rates by ensuring that the market rules are not unduly discriminatory, foster competition, and are based on principles of economic efficiency while ensuring reliability of service.

Question 7: In Ohio, rural electric co-ops ensure that over 885,000 consumers have access to reliable and affordable electricity. The Federal Power Act exempts rural electric co-ops from FERC jurisdiction and this statutory exemption contributes to the state's affordable electricity rates. Do you plan to adhere to the Federal Power Act and continue to exempt rural electric co-ops from FERC jurisdiction?

Answer: Section 201(f) of the Federal Power Act exempts electric cooperatives that receive a certain type of financing or that sell less than a certain amount of electricity per year from certain provisions of the Federal Power Act. If confirmed, I commit to adhere to the provisions in the Federal Power Act regarding jurisdiction over electric cooperatives.

Question 8: On May 1st and 2nd of this year, FERC held a technical conference on the potential conflicts between state policies and electricity grid operators. If confirmed, will you commit to reviewing the findings of the technical conference?

Answer: Yes, if confirmed I will review the findings of the technical conference and work with my colleagues on these important issues.

Questions from Senator Catherine Cortez Masto

Question 1: In late 2016, FERC issued a proposed rule that would eliminate barriers to the participation of renewable energy and electric storage in wholesale markets. Will you support approval of the proposed rule? What changes, if any, would you support before issuing a final rule?

Answer: I have not had the opportunity to review the record on this matter and, therefore, I am reluctant to address any possible changes. If confirmed, I look forward to reviewing the record and determining the next steps on this proposed rule with my colleagues.

Question 2: Do you support removing market barriers so that renewable energy and electric storage resources can provide services in wholesale markets?

Answer: Yes. My view is that we should be able to call on all types of energy resources to serve the nation's needs, which includes renewable and electric storage resources. Barriers that keep otherwise competitive resources out of the market interferes with being able to rely on all types of resources.

Question 3: What additional actions could FERC take to allow distributed energy resources access to wholesale electricity markets?

Answer: The Commission recently issued a Notice of Proposed Rulemaking to remove potential barriers to the participation of electric storage resources in the organized wholesale electric markets. The Notice of Proposed Rulemaking set forth a proposal that would require each Regional Transmission Organization and Independent System Operator to revise its tariff to allow distributed energy resource aggregators to participate directly in the organized wholesale electric markets. If confirmed I will review the comments on these issues to determine any next steps.

Question 4: In the state of Nevada, we have a successful renewable portfolio standard and have made great strides in creating a clean energy economy. Do you agree that states have the authority to establish the resource mix that best serves their customers?

Answer: I agree that states have the ability to determine the resource mix within their jurisdiction.

Question 5: If yes: How would you protect that authority?

Answer: From time to time, state and Commission authority intersect. To the extent that state policies impact wholesale electricity markets, we need to ensure that rates are just and reasonable while respecting state jurisdiction and policies. The Commission has initiated a process to seek to address certain of those intersections. The Commission's May 1-2 technical conference is exploring these state-FERC issues. If confirmed, I will carefully consider all comments in record and look forward to working with my colleagues on these important issues.

Question 6: If no: Why not?

Answer: Please see my response to your Question 5 above.

Question 7: Different regions of the country are reliably integrating renewable energy resources into the grid at very high levels. Numerous studies have shown that the grid can integrate far higher total levels of renewable energy on the grid than exist today. Do you agree that the evidence shows that solar and wind power can be reliably integrated into the power grid?

Answer: I believe that we should seek to rely on all forms of resources to ensure reliable and reasonably priced energy, including reliance on solar and wind power. Those resources are playing an ever increasing part in our energy mix and we need to find a way to make sure those resources can be reliably integrated. Thus, while I am aware of some studies that show certain levels of integration can be achieved, my focus if confirmed will be on what the Commission can do to get resources integrated in a reliable and cost-effective manner.

Question 8: As levels of wind and solar energy resources expand, how important will regional coordination be in ensuring that these and other variable energy resources are cost-effectively integrated into the power grid?

Answer: Regional coordination can help cost effectively and reliably integrate all resources into the electric grid, including variable energy resources such as wind and solar. By taking advantage of a larger pool of geographically-diverse resources, such as wind and solar which may be located far from each other and far from load centers, regional coordination can also help balance power supplies, enhance grid reliability, and reduce power costs for customers.

Question 9: What can FERC do to facilitate this integration?

Answer: FERC can facilitate the integration of variable energy resources through regional coordination by fostering continued market development within and across state lines. Apart from regional coordination, FERC also sought to remove barriers to the integration of variable energy resources in its regulations. In Order No. 764, FERC required each public utility transmission provider to: (1) offer intra-hourly transmission scheduling; and, (2) incorporate provisions into the pro forma Large Generator Interconnection Agreement requiring interconnection customers whose generating facilities are variable energy resources to provide meteorological and forced outage data to the public utility transmission provider for the purpose of power production forecasting. If confirmed, I look forward to exploring other opportunities to ensure cost-effective integration of all resources including renewable energy resources.

Question 10: What are the main barriers to identifying transmission needs and getting these projects built?

Answer: While barriers to the identification and development of needed transmission remain, the Commission has been working to address these barriers for quite some time. In 2011, the Commission issued Order No. 1000 to reform public utility transmission providers' transmission planning processes and cost allocation mechanisms. While monitoring closely implementation of Order No. 1000, the Commission also has continued to consider a range of issues related to transmission planning and cost allocation. In June 2016, the Commission convened a technical conference on competitive transmission development and requested post-technical conference

comments on several issues, including issues related to competitive transmission development, interregional transmission coordination, and regional transmission planning. If confirmed, I will review this record with my colleagues.

Question 11: How will you promote joint and coordinated planning among regional transmission planners for necessary interregional transmission?

Answer: The Commission has been considering the issue of interregional transmission development for a number of years now. Among other actions, Order No. 1000 required improved coordination between neighboring transmission planning regions for new interregional transmission facilities and that each public utility transmission provider participate in a regional transmission planning process that has an interregional cost allocation method. In the years following the issuance of Order No. 1000, the Commission has issued final orders on the compliance filings establishing interregional transmission coordination procedures for all the pairs of neighboring transmission planning regions. In addition, the June 2016 technical conference on competitive transmission development – discussed in my response to the preceding question – featured a discussion of interregional transmission coordination, including joint and coordinated interregional transmission planning. At the technical conference, several speakers and FERC Commissioners raised questions regarding the state of interregional transmission development and, in particular, whether there is more that the Commission can—and should—do to facilitate the development of interregional transmission projects. The Commission also requested post-technical conference comments on several issues related to interregional transmission development. If confirmed, I will review the record on this matter with my colleagues.

Question 12: The lack of transmission is a barrier to transporting solar and wind energy to population centers. FERC Order No. 1000, requiring regional transmission planning and interregional coordination, was supposed to help identify transmission needs and solicit competitive transmission projects. Do you think that Order No. 1000's requirements for regional transmission planning were a step in the right direction towards facilitating necessary transmission infrastructure?

Answer: Order No. 1000 included a requirement that each public utility transmission provider amend its tariff to describe procedures that provide for the consideration of transmission needs driven by public policy requirements. This requirement applied to both local transmission planning processes and regional transmission planning processes. Specifically, the Commission required that each public utility transmission provider establish procedures through which it will identify transmission needs driven by public policy requirements in its local and regional transmission planning processes and evaluate potential solutions to those identified transmission needs.

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Commission issued Order No. 1000 to reform public utility transmission providers' transmission planning processes and cost allocation mechanisms. While monitoring closely implementation of Order No. 1000, the Commission also has continued to consider a range of issues related to transmission planning and cost allocation. In June 2016, the Commission convened a technical conference on competitive transmission development and requested post-technical conference comments on several issues, including issues related to competitive transmission development, interregional transmission coordination, and regional transmission planning. If confirmed, I will review this record with my colleagues.

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Question 13: Should FERC consider the underutilization of current pipelines when considering the need for a new pipeline?

Answer: It is my understanding that this factor may currently be considered under the Commission's existing policy. In any event, if confirmed I look forward to reviewing the Commission's policies with my colleagues to ensure that all relevant factors are given appropriate consideration in the Commission's review of pipeline proposals.

Question 14: Should FERC consider long-term stranded cost risk in examining the need for new pipelines?

Answer: The Commission issued a Policy Statement in 1999 that provides the analytical framework that it uses to evaluate the economic aspects of proposals for certificating new interstate natural gas infrastructure. Under the Policy Statement, the threshold requirement for pipelines proposing new projects is that the pipeline must be prepared to financially support the project without relying on subsidization from its existing customers. This approach appears to

place the risk of long-term stranded costs on the pipeline applicant and not on existing customers.

Question 15: Who should be responsible for the costs of any wasteful overbuilding?

Answer: As I noted above, the Commission's approach to evaluating the need for new pipelines appears to place the financial risk of overbuilding on the pipeline applicant. I believe the Commission should be mindful of the potential for overbuilding and the impact on the market and customers.



**Statement of Advanced Energy Economy in Support of
Neil Chatterjee's Nomination to Federal Energy
Regulatory Commission**

Washington, D.C., May 24, 2017 — Tomorrow, the Senate Energy and Natural Resources Committee holds a hearing to consider the nominations of Neil Chatterjee and Rob Powelson to serve as commissioners of the Federal Energy Regulatory Commission (FERC). AEE's VP of Federal Affairs, Arvin Ganesan, released the statement below in support of Neil Chatterjee's nomination. AEE also has a long-standing relationship with Mr. Powelson, in his roles as commissioner of the Pennsylvania Public Utility Commission and president of the National Association of Regulatory Utility Commissioners, but he was unable to meet with AEE, which is necessary for a formal endorsement, prior to tomorrow's confirmation hearing.

"Advanced Energy Economy strongly supports the nomination of Neil Chatterjee to serve as a Commissioner at the Federal Energy Regulatory Commission. AEE is committed to an energy system that encourages innovation and allows all technologies to compete fairly in wholesale markets while also respecting the right of states to set policy goals of their own. We believe that market rules should not lock in old technologies at the expense of newer ones that can do more for less. Mr. Chatterjee shares our fundamental belief that

markets thrive when there is true competition on the basis of all the attributes various technologies have to offer, and in order to achieve this, we must ensure that barriers to competition are broken down. We look forward to working with Mr. Chatterjee and other commissioners of FERC to accomplish this goal.”

Background Materials:

[Why Advanced Energy Should Be Part of President Trump's 'America First Energy Plan'](#)

[AEE Urges FERC to Make Wholesale Electricity Markets More Competitive: Statement here. Filed comments here.](#)

[FERC Agrees with AEE: Let All Advanced Energy Technologies Compete in Regional Power Markets](#)

[A FERC challenge: Opening up Electricity Markets to Advanced Energy Technologies](#)

[Advanced Energy Can Improve Reliability - If It's Allowed to Compete](#)

[How Grid Governance Stands in the Way of Advanced Energy Progress](#)

[AEE and R Street Institute Say to Congress: Improving Competitive Power Markets Can Lower Costs and Take Advantage of Advanced Energy Benefits](#)

[Advanced Energy Economy Applauds FERC Inquiry on Barriers to Energy Storage, Calls for Electricity Market Participation of All Advanced Energy Technologies](#)

Comments to FERC on Technology-Neutral Competition in
Transmission Development

About Advanced Energy Economy

Advanced Energy Economy is a national association of businesses that are making the energy we use secure, clean, and affordable. Advanced energy encompasses a broad range of products and services that constitute the best available technologies for meeting energy needs today and tomorrow. AEE's mission is to transform public policy to enable rapid growth of advanced energy businesses. AEE and its State and Regional Partner organizations are active in 27 states across the country, representing more than 1,000 companies and organizations in the advanced energy industry. Visit AEE online at www.aee.net.

See this statement online [here](#).

Media Contact:

Monique Hanis, mhanis@aee.net, 202-391-0884

Advanced Energy Economy - 1000 Vermont Ave., N.W., Third
Floor, Washington, D.C. 20005

February 15, 2017

President Donald J. Trump
The White House
1600 Pennsylvania Avenue, N.W.
Washington, DC 20500

Dear Mr. President:

Americans rely on infrastructure to deliver the energy that powers our great nation. The undersigned associations appreciate the strong steps you have taken to accelerate the regulatory process for high-value energy infrastructure projects. However, the recent loss of a quorum at the Federal Energy Regulatory Commission (FERC) has placed energy infrastructure permitting on an indefinite hold, creating an unexpected barrier to your recent streamlining actions and threatening their ultimate success. We ask that you fill the vacancies at FERC as quickly as possible to remedy this potentially crippling situation.

FERC plays a critical role in ensuring Americans can count on the best energy infrastructure in the world. Regardless of the energy resource, moving energy safely and efficiently to where it is needed requires a modern and highly interconnected system. Innovation is driving new opportunities. Projects bring an influx of investment, and that means more money to spend in local economies. Energy infrastructure is delivering opportunity across America, so we cannot afford to delay progress another day.

We ask you to nominate new FERC commissioners to fill the three vacancies as soon as possible. Investments to enhance our energy infrastructure to improve efficiency, affordability, reliability and security are placed in jeopardy when FERC seats are left empty. Robust energy infrastructure creates jobs, improves safety and spurs domestic investment. Nominating a full set of commissioners to FERC is a bold step toward a stronger future, and we ask that you do so as quickly as possible.

Sincerely,

Air Conditioning, Heating and Refrigeration Institute
American Chemistry Council
American Council of Engineering Companies
American Forest & Paper Association
American Iron and Steel Institute
Consumer Energy Alliance
Electricity Consumers Resource Council
Energy Equipment and Infrastructure Alliance
Industrial Energy Consumers of America
National Association of Manufacturers
National Electrical Manufacturers Association
U.S. Chamber of Commerce

**U.S. Senate Committee on Energy and Natural Resources
May 25, 2017 Hearing: The Nominations of
Mr. Dan R. Brouillette to be Deputy Secretary of Energy, and Mr. Neil Chatterjee
and Mr. Robert F. Powelson to be Members of the Federal Energy Regulatory Commission**

Statement for the Record

U.S. Senator Steve Daines

I want to thank the nominees for coming before the Senate and for their testimony. It is also always great to see the support of your families behind you. I want to stress the importance of this hearing and confirming these positions. FERC needs to have a quorum to function and DOE needs a second in command that can help guide the department. I am thrilled that the President has chosen well-qualified and intelligent members to these important positions. All three of these nominees have the experience needed to serve the commission and the department well.



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Ste. 900
Washington, DC 20004
info@eeia.org • (202) 870-7715

May 23, 2017

The Honorable Lisa Murkowski, Chairman
Senate Committee on Energy and Natural Resources
522 Hart Senate Office Building
Washington, DC 20510

The Honorable Maria Cantwell, Ranking Member
Senate Committee on Energy and Natural Resources
511 Hart Senate Office Building
Washington, DC 20510

Dear Chairman Murkowski and Ranking Member Cantwell:

On behalf of the members of the Energy Equipment and Infrastructure Alliance (EEIA), I am writing to express our strong support for Neil Chatterjee and Robert Powelson to be confirmed as Commissioners of the Federal Energy Regulatory Commission (FERC).

We represent the energy production and infrastructure supply chain, which includes millions of energy infrastructure workers employed in more than 120,000 companies, over 90% of which are small businesses. Our members work in sixty industries, annually contributing more than \$170 billion to the U.S. economy, working in every state of the union, providing construction, equipment, supplies, logistics, professional services and technology to energy operations. These workers and companies are the hard-working backbone of America's energy economy. They are the builders of an energy production and distribution system that safely delivers clean, affordable and reliable energy to America's families, communities, businesses and our nation's power grid.

Since early February, the absence of quorum at FERC has put in jeopardy many major energy-delivery infrastructure projects needed to lower energy costs to consumers and to supply clean-burning natural gas to electric generating plants. At stake in these delays are not only lower-cost supplies of natural gas to consumers and industrial customers, but also the necessary transmission capacity to supply the transition to clean-burning natural gas power generation, as well as the capacity necessary for integration of wind and solar power into the grid.

Equally concerning is the loss of tens of thousands of supply chain jobs attributable to project delays caused by absence of a quorum at FERC. These are Main Street American jobs that support families and communities across our country. Make no mistake: besides consumers, the real victims of the no-quorum situation are construction laborers, equipment operators and maintenance technicians, welders, pipefitters, truck drivers, and supporting professional, administrative, factory and warehouse workers, to name a few.

We urge you to support and expedite Committee approval of these FERC Commissioner nominees, and to work with Senate leadership and your colleagues to achieve their confirmation by the United States Senate at the earliest possible opportunity.

Sincerely,

Toby Mack
President & CEO



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info@enernoc.com

June 5, 2017

The Honorable Lisa Murkowski
Chairman
Senate Committee on Energy and Natural Resources
709 Hart Senate Office Building
Washington, D.C. 20510

The Honorable Maria Cantwell
Vice Chairman
Senate Committee on Energy and Natural Resources
511 Hart Senate Office Building
Washington, D.C. 20510

Dear Chairman Murkowski and Vice Chairman Cantwell,

We are writing to express our strong support for Neil Chatterjee and Robert Powleson as nominees to the Federal Energy Regulatory Commission. Both nominees are well positioned to help FERC achieve its mission and ensure that consumers receive reliable, secure energy at competitive prices.

While on the Pennsylvania Public Utilities Commission, Commissioner Powleson consistently provided strong leadership and championed competitive outcomes. Commissioner Powleson's role leading the successful implementation of Act 129, which has resulted of billions of dollars in customer savings through reducing energy waste and inefficient grid usage in Pennsylvania, demonstrates his support for allowing all technologies to compete on a level playing field to meet reliability and the energy needs of our economy. As our grid continues to evolve, it is critical that FERC enable this more competitive, dynamic market to be unleashed. By virtue of his leadership role at NARUC and time as a Commissioner, Commissioner Powleson also has a clear appreciation for the need to harmonize state policy with competitive markets.

From our interactions with Mr. Chatterjee, he has demonstrated the same support for competitive markets that allow all technologies to participate on a level playing field. He recognizes that by strengthening competition and eliminating unnecessary barriers to advanced energy technologies, FERC can drive more affordable outcomes for consumers. The Commission will benefit from this perspective, and Mr. Chatterjee's pragmatic, fair-minded nature.

We respectfully request that you vote in favor of these two nominees. Thank you for your consideration of this letter, and for your leadership.

Sincerely,

Tim Healy
Chairman and CEO, EnerNOC

David Brewster
President, EnerNOC



Department of Energy
Washington, DC 20585

May 19, 2017

Dr. Robert Weisenmiller, Chair
California Energy Commission
1516 9th Street
Sacramento, California 95814-5512

Dear Dr. Weisenmiller:

I am writing to you to express my concern about the heightened and continuing energy reliability risks in Southern California induced by the closure of the regionally-important natural gas underground storage facility at Aliso Canyon. With a warmer than average summer predicted, the Department is concerned with regional reliability, in addition to longer-term concerns about overall grid stability.

I recognize that since the shutdown of Aliso Canyon, you and your colleagues at other agencies and utilities (in California and in neighboring states), have shown extraordinary dedication in seeking new ways to use the existing electric and gas infrastructure more effectively to meet regional requirements; such as the addition of strategically sited new assets, including renewable generation facilities and energy storage devices. Concurrently, we are encouraged by last winter's rain and snowpack which underpin California's hydro-power capacity.

Nevertheless, it appears that despite these efforts, without the availability of Aliso Canyon or some adequate functional equivalent, the region remains vulnerable to energy supply disruptions and possible electricity blackouts triggered by severe weather, unanticipated outages of key facilities, natural or man-made disasters, or a combination of these events. The reality is there are many constraints to the transmission of electricity and natural gas in California that are only exacerbated by Aliso Canyon being unavailable in its full capacity.

I note that under your direction, many of the injection/withdrawal wells serving Aliso Canyon have successfully undergone a battery of rigorous safety tests. With this in mind, I urge you to seriously consider and if possible approve the near-term reopening of Aliso Canyon.

At the same time I want to be clear that I am not suggesting a simple return to the *status quo ante*. Many lessons have been learned from the Aliso Canyon experience, one of the most important of which is that as our reliance on natural gas for the generation of electricity increases, we must identify potential fuel supply risks and take appropriate actions to mitigate them.

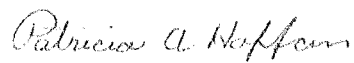
Reopening Aliso Canyon would help to ease near-term reliability risks, while providing an umbrella of protection under which appropriate longer-term actions can be planned and



brought to reality. If Aliso Canyon is reopened, recharging it to its full capacity (86 Bcf) will be a slow process. This means that whether Aliso Canyon could make a significant contribution to easing reliability challenges this summer is questionable, but reopening it soon is required for recharging and ensuring access for the winter of 2017-18.

If the Department can be of assistance to you in dealing with this challenge, whether through our able staff or through the expertise at our national laboratories, please let me know. I look forward to further dialogue with you on this subject and others of mutual interest as they arise.

Sincerely,

A handwritten signature in cursive script, reading "Patricia A. Hoffman".

Patricia A. Hoffman
Acting Under Secretary for Science and Energy
Office of the Under Secretary for Science and Energy



TERRY O'SULLIVAN
General President

ARMAND E. SABITONI
General Secretary-Treasurer

Vice Presidents:

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JOSEPH S. MANCINELLI

ROCCO DAVIS
*Special Assistant to the
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LIUNA!

May 18, 2017

The Honorable Lisa Murkowski
Chairman
U.S. Senate Committee on Energy and Natural Resources
522 Hart Senate Office Building
Washington, D.C. 20510

The Honorable Maria Cantwell
Ranking Member
U.S. Senate Committee on Energy and Natural Resources
511 Hart Senate Office Building
Washington, D.C. 20510

Dear Chairman Murkowski and Ranking Member Cantwell:

On behalf of the 500,000 members of the Laborers' International Union of North America (LIUNA), I would like to express our support for Neil Chatterjee and Robert Powelson to the Federal Energy Regulatory Commission (FERC). LIUNA also supports Kevin McIntyre who is likely to be President Trump's third nomination to FERC. As you are aware, without a minimum of three commissioners, FERC does not have a necessary quorum to fulfill its responsibilities to approve major energy projects, and so I urge swift action from the Senate on these nominees.

Following Norman Bay's sudden resignation earlier this year, FERC was left with only two acting commissioners, forcing an immediate stop to the process for projects still waiting to be approved by the commission. Then, just last week, Commissioner Colette Honorable announced that she will not seek another term and will step down at the end of her current term on June 30, 2017.

Environmental extremists are attempting to disrupt the nomination process because of the commission's control over permitting interstate gas pipelines. Without a proper quorum at FERC, significant economic growth is forfeited, energy independence is hindered, and thousands of good-paying union jobs are lost. Pipelines play a vital role in transporting product safely and securely, preventing the use of more dangerous and environmentally harmful methods of transportation.

Expanding our nation's energy infrastructure puts thousands of skilled LIUNA men and women to work and provides millions of Americans with affordable energy. We currently have more than \$50 billion worth of pipeline infrastructure pending that would put tens of thousands of Building Trades men and women to work. Every day FERC is

Feel the Power

FERC Commissioner Nominees

May 18, 2017

Page 2

unable to do its job approving these projects is another day our members cannot do their jobs improving America's energy infrastructure.

I urge you to support and approve President Trump's FERC nominees so we can continue to grow our energy network and put LIUNA members to work.

With kind regards, I am

Sincerely yours,

A handwritten signature in black ink, appearing to read "T. O'Sullivan", written in a cursive style.

TERRY O'SULLIVAN
General President

rj
opeiu2liuna



February 15, 2017

The Honorable President Donald J. Trump
President of the United States of America
The White House
1600 Pennsylvania Ave. NW
Washington, DC 20500

Dear Mr. President,

On behalf of the National Association of Manufacturers, representing manufacturers in every industrial sector and in all 50 states, I strongly urge you to move swiftly on nominations for key independent agencies like the Federal Energy Regulatory Commission (FERC) and the U.S. Export-Import (Ex-Im) Bank.

The NAM shares your goals of boosting economic growth and creating a business atmosphere that increases hiring. One important way to promote those goals is to support proven job creators. Unfortunately, key leadership vacancies at these agencies are causing unnecessary delays and costly hurdles for U.S. manufacturers.

Both the Ex-Im Bank Board of Directors and FERC are currently without the necessary quorum to act on crucial decisions. With no chairman and only two of five commission slots currently filled, FERC does not have the authority to approve new energy infrastructure projects. The Ex-Im Bank is in a similar situation; with no chairman and only two administratively appointed Board members, it cannot approve high-value transactions or enact policy changes that would benefit exporters.

FERC plays a critical role in ensuring Americans can count on the best energy infrastructure in the world. Moving energy safely and efficiently to where it is needed requires a modern and highly interconnected system. Energy infrastructure is delivering opportunity across America, and manufacturers cannot afford to delay progress on new projects. Investments to enhance our energy infrastructure to improve efficiency, affordability, reliability and security are placed in jeopardy when FERC seats are left empty. Robust energy infrastructure creates jobs, improves safety and spurs domestic investment.

As the official export credit agency of the United States, the Ex-Im Bank assists in financing U.S. exports from thousands of American companies and bolsters our global competitiveness. Manufacturers of all sizes across the country turn to the Ex-Im Bank for financing and insurance when the private sector cannot provide comparable tools. Exports are more important than ever to grow U.S. manufacturing, and access to competitive export financing and working capital is oftentimes critical to secure overseas sales that sustain or grow U.S. jobs – especially in the face of substantial foreign competition. The Ex-Im Bank has been a vital tool in helping businesses in the United States fight on a level playing field in the face of at least 85 government-back export credit agencies around the world that work aggressively to support their own domestic industries at the expense of ours. If the agency's activities continue to be limited, without a Board quorum to approve certain transactions, U.S. exporters and their workers will lose access to this crucial "lender of last resort."

Leading Innovation. Creating Opportunity. Pursuing Progress.

733 10th Street NW, Suite 700, Washington, DC 20001 • P 202-637-3043 • F 202-637-3460 • www.nam.org

With every passing day that key independent agencies like FERC and Ex-Im Bank's Board of Directors lack the necessary quorum to complete new business, businesses in the United States are missing out on new business opportunities – to the detriment of local economies and American jobs. I urge you to move forward as quickly as possible in naming nominees that enable these agencies to carry out decisions that support U.S. manufacturers.

With all best wishes I remain,

Sincerely,

A handwritten signature in black ink, appearing to read "J. Timmons", written in a cursive style. Below the signature, the name "Jay Timmons" is printed in a standard sans-serif font.

Jay Timmons



Bret Lane
President and
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April 28, 2017

Mr. Stephen Berberich, President and CEO, California Independent System Operator
 Mr. Michael Picker, President, California Public Utilities Commission
 Mr. Robert Weisenmiller, Chair, California Energy Commission

Dear Messrs. Berberich, Picker, and Weisenmiller:

The California Independent System Operator (CAISO), California Energy Commission (CEC) and California Public Utilities Commission (CPUC) are the critical agencies charged with planning and managing California's energy reliability. Californians depend upon your agencies' expertise and authority to ensure dependable supplies of natural gas and electricity. We continue to stand ready to support your agencies' efforts. To further support you and your agencies' efforts, we want to make you aware of serious concerns we have about our ability to safely and reliably serve our customers this summer and upcoming winter, based upon the current operating status of our system.

The State was lucky this past year to have experienced a mild summer and winter. For the upcoming summer and winter seasons, Californians cannot rely on luck, and energy reliability should not depend upon unusually mild weather conditions. This is particularly true now, as the National Oceanic and Atmospheric Administration is forecasting a 60 to 70 percent chance for above normal temperatures throughout California this summer.

Recently, your agencies directed us to perform an analysis of our system's maximum capabilities using a specified set of assumptions, and we have provided your agencies with that analysis. SoCalGas is concerned, however, that the assumptions we were asked to utilize in our analysis assume perfect operating conditions and optimal market conditions. This could lead your agencies to reach conclusions that produce overly optimistic assessments that could put at risk the dependable supply of natural gas and electricity that Southern Californians will rely on to meet their energy needs this summer and upcoming winter.

Our system's physical ability to provide reliable service on peak demand days and respond to abnormal operating conditions is at risk. As you are aware, currently, the ability of our storage fields to fulfill their critical role in supporting our system is diminished. The La Goleta, Honor Rancho and Playa del Rey storage facilities have 40 percent less inventory than they did at this same time last year. The inventories in these three fields are at reduced levels due to the increased utilization of these fields last winter as a result of the restrictions on the use of Aliso Canyon.

SoCalGas is prohibited from injecting natural gas at Aliso Canyon and is limited to withdrawing gas under certain conditions. In past years, injections into and withdrawals from storage—primarily Aliso Canyon—had been sufficient to maintain system reliability when flowing supplies and customer demand were not in balance. Currently, the depleted inventory levels at La Goleta, Honor Rancho and Playa del Rey and restrictions on our use of Aliso Canyon could result in inadequate injection and withdrawal rates to respond to these imbalances during this summer and into the coming winter. The availability of storage injection capacity also reduces the risk of over pressurization of segments of our pipeline system. Operating close to a pipeline’s maximum pressure is a pipeline safety and compliance concern.

Prudent planning promotes safety and incorporates contingencies to provide sufficient system resiliency and flexibility. As part of electric planning assessments, the electric industry plans for upsets under the “N minus 1” condition, which requires electric operators to plan their system to have sufficient resiliency to lose a critical component and continue operating. The gas industry does not have that planning requirement. For SoCalGas, our system was designed to use our storage assets to create system resiliency. Storage acts as “shock absorbers” when we have fluctuations during both supply and demand swings. In effect, having natural gas storage available within our system provides a similar “N minus 1” contingency. Many of the assessment’s assumptions, however, do not provide for sufficient contingency in the event of imperfect operating conditions and less than optimal market conditions.

Our experience in these areas raises concerns about planning the region’s energy reliability based upon assumptions that require almost perfect conditions. Our concerns with the assumptions can be summarized as follows:

Assumption: Full receipt point utilization.

Concerns: Full receipt point utilization only provides the upper bound of our system’s ability to serve customer demand. This theoretical maximum is not a reasonable operational planning assumption. As you are aware, receipt point utilization is a market issue and is dependent upon the market participants—from upstream suppliers, shippers, and ultimately the core and non-core customers—to purchase, schedule, and deliver the gas. Full receipt point utilization is primarily dependent upon customer demand and does not reflect actual historical receipts.

Assumption: 1.470 bcf per day storage withdrawal rates.

Concerns: Storage withdrawal rates of 1.470 bcf per day assumes significantly higher inventory at La Goleta and Honor Rancho, and full inventory at Playa del Rey. We are concerned that the limited injection that has occurred over the last month to restore depleted storage inventories, and limitations and restrictions on the ability to replace gas withdrawn during the summer, will result in lower withdrawal rates.

Currently, the combined inventory at La Goleta, Honor Rancho and Playa del Rey is approximately 40 percent lower than it was at this time last year. The inventories in these three fields are at reduced levels due to the

increased utilization of these fields last winter as a result of the restrictions on the use of Aliso Canyon. If depleted storage inventories are not restored, we will be unable to achieve or maintain withdrawal rates of 1.470 bcf per day.

Restrictions on the use of injection at Aliso Canyon have a direct impact on the SoCalGas system operator's ability to optimize storage injection at our other fields, reliably meet the variability of demand this summer, and prepare for this upcoming winter. The daily injection capacity provided by Aliso Canyon adds 2 to 2 ½ times the total available injection capacity for our system, allows the market to have more certainty and flexibility when scheduling gas into our system, and allows the SoCalGas system operator to maximize injection at the other storage fields. It also provides the SoCalGas system operator the ability to better manage the pipeline system from a pressure perspective. Our system has been designed and operated with the injection, withdrawal and storage capacity of all the storage fields as integral parts of the overall system.

Assumption: Aliso Canyon is assumed to not be used this summer, but held in reserve as a planning contingency.

Concerns: It may be reasonable to assume conservatively that Aliso Canyon is unavailable for withdrawal to provide a planning contingency within a modeling exercise. But, given the State's current restrictions on injection, it is not prudent to depend on Aliso Canyon as an operational backstop throughout the summer and winter to fill potential gaps during system upsets or when the perfect assumptions do not materialize. With Aliso Canyon's currently depleted inventory level, new operating configuration of the wells, and the current temporary moratorium on injection, once any withdrawals are made from Aliso Canyon, its withdrawal capacity is anticipated to decline at what could be a dramatic rate.

Assumption: Daily average capacity accurately reflects the system's ability to meet customer demand.

Concerns: Assuming daily average capacities can be used to forecast the system's ability to meet customer demand results in system planning that does not address the critical importance of hourly customer demand fluctuations, especially in supporting natural gas fired electric generation, in assessing system reliability. The availability of natural gas supply from our storage fields provides critical flexibility in managing the differences between relatively uniform flow of supply from our receipt points and the hourly fluctuating demand of our customers.

We continue to review historical data to assess in greater detail how these assumptions match up with our experience. As described in previous reports, disruptions from planned or unplanned outages on our system and interconnecting pipeline systems can result in natural gas supply interruptions. In addition, we highlight two recent examples of how disruptions outside of our system demonstrate the critical role our storage facilities play in supporting gas and electric system

reliability and resiliency. Under current operating conditions, these events could result in significant energy shortages, including electric generator curtailment.

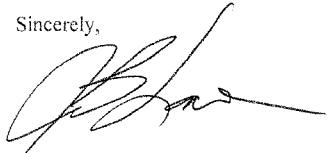
Weather: In late July 2015, Southern California experienced three consecutive days of intense humidity and monsoonal storms. The heat and humidity drove an increased need for electric generation, and the cloud cover limited solar generation, resulting in fluctuating electric generation and attendant natural gas demand. During the event, use of natural gas fired electric generation increased significantly, with a total demand over a three-day period ranging between 11 and 25 percent above plan. Storage withdrawals were instrumental in managing the variable needs of the electric system and maintaining electric reliability.

Electric Demand: In August 2016, the Blue Cut fire in the Cajon Pass of Southern California, impacted major transmission lines operated by Los Angeles Department of Water and Power and CAISO. Those lines were taken out of service during the fire, which required local natural gas fired electric generation to make up for the loss of electric transmission capacity. Significant storage withdrawals were used to respond to this unexpected 21 percent increase in natural gas demand from electric generation over a five-day period.

These examples demonstrate the importance of assessing our system's capabilities to meet customer demand under multiple scenarios, including scenarios that account for unexpected changes to natural gas supply and customer demand. Experience has shown that failure to address our system's need for resiliency and flexibility risks energy shortages and the attendant safety issues.

We hope that this information is helpful as your agencies perform their critical roles in planning and managing California's energy reliability and resiliency. We continue to stand ready to support you and your agencies' efforts and recognize the importance of continuing to work together as you reach conclusions critical to the State's ability to ensure a reliable supply of energy to fuel California's residents, businesses, and economy.

Sincerely,



Bret Lane
President and Chief Operating Officer

cc: Kevin De León, President pro Tempore, California State Senate
Anthony Rendon, Speaker of the Assembly, California State Assembly
Nancy McFadden, Executive Secretary to California Governor Edmund G. Brown, Jr.
Edward Randolph, Energy Division Director, CPUC
Mark Roethlieder, Vice President, Market Quality and Renewable Integration, CAISO



May 25, 2017

**Utilities Technology Council
Statement for the Record
Senate Energy and Natural Resources Committee**

Nomination Hearing to Consider DOE, FERC Nominees

The Utilities Technology Council (UTC) appreciates the opportunity to submit a Statement for the Record in the U.S. Senate's Energy and Natural Resources Committee's hearing "Nomination Hearing to Consider DOE, FERC Nominees." Formed in 1948, UTC is a global trade association representing for-profit and not-for-profit electric, gas, and water utilities on issues involving utility information and communications technology (ICT). Our members work every day to ensure the safe, reliable and secure delivery of electricity.

Life as we know it today is dependent on the reliable delivery of electricity, water and gas. What is not recognized often enough, however, is the absolutely critical need for electric, gas and water utilities to have access to the information and communications technology (ICT) they need to maintain not only day-to-day operations, but also operations during times of restoration and recovery from a variety of hazards, including natural disasters and outages caused by malicious physical or cyber attacks.

As this Committee examines the nominees for both the Department of Energy (DOE) and the Federal Energy Regulatory Commission (FERC), UTC respectfully requests that the Committee encourage the nominees to explore ways they, in their new positions, can facilitate the inclusion of utility ICT needs, such as access to radiofrequency spectrum for utility wireless communications systems, in federal policies focused on securing the country's energy infrastructure. By encouraging the nominees to engage regularly with their counterparts at the Department of Commerce, which houses the National Telecommunications and Information Administration (NTIA), and the Federal Communications Commission, which both have jurisdiction over spectrum and other aspects of policies related to ICT, the Committee has the opportunity to ensure that this absolutely essential component of grid resilience – reliable communications – is more holistically considered throughout our government.

Additionally, UTC's electric utility members have worked diligently over the past number of years to develop a strong and robust information sharing and strategic collaboration initiative embodied in the Electricity Subsector Coordinating Council (ESCC). They have also committed, through the North American Electric Reliability Corporation (NERC), to continuously improve the mandatory reliability standards process, which has enhanced the security and reliability of the bulk power system. Both DOE and FERC play critical roles in these efforts, and we would request that the Committee encourage the nominees to support the continued work occurring within both the ESCC and NERC.

UTC would like to emphasize the following:

Energy policymakers must closely examine cross sector interdependencies and enhance cross sector collaboration. UTC encourages this Committee to take a leading role in ensuring that as it

explores how to protect the electric grid from all hazards, it also considers how cross sector interdependencies can impact grid resilience. As it examines the DOE and FERC nominees, the Committee should encourage them to take a leading role in these efforts. Utility ICT needs, such as access to spectrum (essential to deployment of wireless communications) that is free from interference and congestion, are an integral component of discussions about securing the country's energy infrastructure. Unfortunately, electric utilities, despite their criticality to homeland security, face increasing challenges in accessing spectrum for mission critical communications, such as those used for Supervisory Control and Data Acquisition (SCADA) systems, which are fundamental to grid operations. The need for spectrum becomes even more acute as utilities increasingly rely on wireless technologies to enable smart grid devices that in turn manage fluctuations in intermittency in the grid due to solar and wind deployment. Utilities also need access to spectrum to deploy new technologies like drones that have the potential to enable greater situational awareness and enhanced grid resilience. Policymakers must address electric utilities' need for spectrum so they have access to the ICT they need for safe, reliable and secure electric service operations. Reliable communication systems are essential for maintaining operational safety, reliability and security, as well as for resiliency and restoration of service.

In order to ensure that these needs are met, the Committee should encourage the nominees to meet more regularly with their counterparts at the Department of Commerce and the FCC. Regular intergovernmental engagement will facilitate better understanding of the operational needs of various critical infrastructures, thereby enhancing homeland security and safety. While each agency must stay in its jurisdictional "swim lane," understanding the cross sector impacts of its decision-making will yield better policies overall. At a time when cross-sector interdependencies are increasing, the need for cross-government engagement is essential. DOE and FERC, with their expertise about the energy sector, could provide needed education and collaboration with other agencies about the energy sector's ICT deployment and policy challenges.

The public private partnership embodied in the ESCC is a robust and essential element of our members' critical infrastructure protection activities and should be supported at every opportunity. UTC's members serve on the ESCC, and UTC's President and CEO is an invited guest of the ESCC. This public private partnership has been instrumental in: 1) improving the communication between the government and the private sector on the threats and vulnerabilities that exist; 2) addressing the obstacles to expanding the real-time situational awareness electric utilities need to mitigate these rapidly-changing threats; 3) educating industry about cybersecurity best practices; and, 4) identifying technology gaps to better inform research and development. DOE's role in this effort has been foundational to its success, and UTC asks the Committee to encourage the nominees to build upon and strengthen this well-functioning structure.

Standards alone will not get us the security we need. The carefully constructed relationship that exists between industry, NERC as the Electric Reliability Organization (ERO), and FERC is working well and should continue as is to ensure that industry and government can address the most critical issues from a risk-based perspective. The Committee should encourage the FERC nominees to support the existing process.

UTC's members are also actively involved with NERC – both with the Electricity Sector Information Sharing and Analysis Center (E-ISAC) and the development and implementation of the Critical Infrastructure Protection (CIP) standards. Each of these functions within NERC play important and different roles needed for mitigating various threats to the grid. UTC believes that existing NERC CIP requirements have helped bring a much-needed spotlight on utility security. These baseline standards in conjunction with the efforts of the E-ISAC, the ESCC, the Department of Homeland Security (DHS), the National Institute of Standards and Technology (NIST), and others to teach best practices on how to

mitigate the threat, are the type of multi-pronged approach that is needed for protecting these critical systems.

In conclusion, UTC urges the Committee to request that the nominees work to align communications policy with energy policy. UTC believes that there is an opportunity to promote utility ICT as part of an integrated energy policy for affordable, reliable, and secure energy, which is essential to improving U.S. economic productivity, enhancing our quality of life, protecting our critical infrastructure, and ensuring our Nation's security.

UTC looks forward to working with the Committee and the nominees to develop policies that protect utility infrastructure through the implementation of improved utility communications.

