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PENDING LEGISLATION

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY

OF THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

ON

S. 1089	**S. 2968**	**S. 3495**
S. 1713	**S. 3088**	**S. 3618/H.R. 6511**
S. 1875	**S. 3295**	**S. 3656/H.R. 6398**
S. 2257	**S. 3376**	**S. 3676**
S. 2803	**S. 3422**	

NOVEMBER 29, 2018

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The text for each of the bills which were addressed in this hearing can be found on the committee's website at: https://www.energy.senate.gov/public/index.cfm/2018/11/subcommittee-on-energy-legislative-hearing

PENDING LEGISLATION

THURSDAY, NOVEMBER 29, 2018

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

The Subcommittee met, pursuant to notice, at 10:04 a.m. in Room SD–366, Dirksen Senate Office Building, Hon. Cory Gardner, presiding.

OPENING STATEMENT OF HON. CORY GARDNER, U.S. SENATOR FROM COLORADO

Senator GARDNER [presiding]. The Subcommittee will come to order.

Thank you, everyone, for being here this morning. Good morning.

The Subcommittee comes together today for a legislative hearing on a number of bills. As always, I appreciate the opportunity to work with the Subcommittee's Ranking Member, Senator Manchin, to address key topics in the energy space.

This legislative hearing will allow us the opportunity to receive testimony from and ask questions of the Under Secretary of Energy, Mark Menezes—is that correct?

Mr. MENEZES. Menezes, which is very close.

Senator GARDNER. Menezes—excellent, very good, thank you—of the Department of Energy, the agency that would be responsible for implementing the changes laid out in the various pieces of legislation.

One of the bills on the docket that I have been working on with my colleague, Senator Bennet, is the Enhancing State Security Planning and Emergency Preparedness Act.

In response to Presidential Executive Order 13800 directing the Department of Energy (DOE) to assess the potential scope and duration of a prolonged power outage associated with a significant cyber incident, the readiness of the United States to manage the consequences of such an incident and any gaps or shortcomings in assets or capabilities required to mitigate the consequences of such an incident, the DOE issued a report titled, "Assessment of Electricity Disruption Incident Response Capabilities." This assessment listed several gaps related to state energy security planning, citing the needs for states to coordinate their planning efforts with federal and industry partners, states to include integration of cyber information sharing mechanisms and DOE to support state and local planning and help identify gaps and/or overlapping resources.

The legislation that Senator Bennet and I have introduced, slightly modified from its House companion bill introduced by Congressman Upton, is designed to address those gaps. The bill outlines the contents of a state security plan, including the need for coordination and joint exercises with industry and federal stakeholders. This plan will assess the state's existing circumstances and propose methods to strengthen the ability of the state to secure its energy infrastructure against all physical and cyber threats, mitigate the risk of energy supply disruptions to the state, enhance the response to and recovery from energy supply disruptions and to ensure the state has a reliable, secure and resilient energy infrastructure.

I am proud to be an original co-sponsor of Senator Ernst's Department of Energy Veteran's Health Initiative Act. This bill will authorize an existing partnership between the two agencies that uses the computational power and analytical techniques harnessed within the DOE's national laboratory system to enhance our understanding of the health care challenges faced by our veteran population and could improve the VA's approach to suicide prevention, cancer treatment and cardiovascular care. More than half a million veterans have already opted into the program, volunteering their health data to contribute to this important research. The methods and capabilities developed during this program could be expanded down the road to further the mission and goals of DOE, the national lab system and other federal agencies. It is also worth pointing out that the funding required for this partnership and the pilot program in the bill has already been included in the FY'19 Energy and Water Appropriations bill.

I am a supporter of Senator Duckworth's bill, Energy Jobs for Our Heroes Act, which will create a program that prepares veterans for jobs in the clean energy sector.

Other bills included on the agenda will cover areas such as grid energy, conservation, LNG exports, the Strategic Petroleum Reserve and nuclear energy.

I now turn to Senator Manchin for his introductory remarks, and then we will introduce our witnesses and turn to Congressman Barton.

STATEMENT OF HON. JOE MANCHIN III, U.S. SENATOR FROM WEST VIRGINIA

Senator MANCHIN. Thank you, Chairman Gardner, for holding this hearing to discuss the 14 bills on today's agenda.

I would also like to thank our witnesses, Congressman Barton and Mr. Menezes, for appearing today to discuss these proposals with us. It is good, as always, to see you all again.

The bills cover a range of topics, but I would like to highlight two proposals in particular.

First, my bill with Senator Heitkamp, the Fossil Energy Utilization Enhancement and Leadership Act, or we better know it as the "FUEL Act." This bill would direct the Department of Energy to establish and update a coal technology program to develop new transformational technologies for coal-powered generation, which would help protect coal jobs while reducing greenhouse gas emissions.

The coal technology program will include the following components: the research and development program; a large-scale pilot program; a demonstration projects program; net-negative carbon dioxide emission projects; and a front-end engineering and design, or a FEED, program. The bill also establishes a research, development and deployment program for carbon utilization, as well as an interagency task force on carbon dioxide pipelines.

The bill includes Senator Heitkamp's DOE study on the benefits of long-term contracts between the government and utilities to ensure viable market prices for carbon dioxide for uses like enhanced oil recovery. It also includes the authorization for the DOE to continue R&D for advanced separation technologies for rare earth elements from coal and coal by-products, which Mr. Menendez——

Mr. MENEZES. Menezes.

[Laughter.]

Senator MANCHIN. ——Menezes and I discussed last year. Cory messed me up on that.

[Laughter.]

Senator GARDNER. I am sorry about that.

Mr. MENEZES. Believe me, I sat next to this Chairman for years.

Senator GARDNER. That is our DOE witness.

[Laughter.]

Senator MANCHIN. Mr. Chairman, I would like to submit a letter from the Carbon Utilization Research Council in support of this legislation for the record.

Senator GARDNER. Without objection.

[The information referred to follows:]

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CURC CARBON UTILIZATION RESEARCH COUNCIL
ADVANCING FOSSIL ENERGY SOLUTIONS

May 11, 2018

Senator Joe Manchin
United States Senate
306 Hart Senate Office Building
Washington, D.C. 20510

Senator Heidi Heitkamp
United States Senate
516 Hart Senate Office Building
Washington, D.C. 20510

Dear Senators Manchin and Heitkamp:

The Carbon Utilization Research Council (CURC) is pleased to support the Fossil Energy Utilization, Enhancement and Leadership (FUEL) Act of 2018. This legislation would provide a needed update to our domestic energy policy with robust funding for federal investments in research, development and demonstration (RD&D) of transformational, advanced coal generation technologies. CURC applauds your leadership on the introduction of the FUEL Act as it focuses on innovative technology pathways that will result in a reduced environmental footprint from coal use, and enable the nation to continue to benefit from the responsible use of our abundant and low cost coal resources.

The FUEL Act is timely, as it would update the Department of Energy's coal technology program with a broad research, development, and demonstration program for several technologies, including technologies that capture, utilize and store carbon dioxide, and authorizes funding for large scale pilot projects and front end engineering and design studies. The program outlined in the FUEL Act aligns with CURC's mission and the recommendations of the CURC-EPRI Advanced Fossil Energy Technology Roadmap. The bill would also support R&D for carbon utilization, extraction of rare earth minerals, and directs the Department of Energy to study the viability of long-term stabilization support contracts – an effort CURC believes would be extremely valuable in demonstrating and financing commercial scale carbon capture projects.

The FUEL Act will reset our technology goals and objectives for the 21st century and unlock U.S. innovation potential. We believe the program outlined in the FUEL Act will deliver significant benefits to the U.S. by producing technologies that will contribute to a balanced generation portfolio, and result in significant economic, employment, and energy security benefits to the United States.

CURC very much appreciates your leadership and vocal recognition that coal is and will continue to be a major part of our energy mix, while also recognizing the value that all of our nation's fossil fuels contribute to our energy portfolio. With this bill, your vision of ensuring our nation continues to benefit from coal and that our fossil energy resources will be part of our

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Duke Energy

Executive Director
Shannon Angielski

CURC CARBON UTILIZATION RESEARCH COUNCIL
ADVANCING FOSSIL ENERGY SOLUTIONS

clean and secure energy future will be achieved. CURC looks forward to working with you to advance this bill in Congress.

Sincerely,

Shannon Angielski

Shannon Angielski
Executive Director

Senator MANCHIN. The second bill I would like to highlight is the All-of-the-Above Federal Building Energy Conservation Act of 2018. I was happy to partner again with Senator Hoeven on the newest version of this bill, which we have been working on for several years now.

Energy conservation is the key cost savings tool for the Federal Government and it is important that the relevant regulations and standards are consistent, ambitious and effective. Therefore, this bill provides building managers with more flexibility. It repeals the Section 433 ban on the use of fossil fuels in federal buildings, which was never implemented, and it replaces it with commonsense energy efficiency measures that will allow federal building managers to focus on energy management systems by providing them more flexibility. It also strengthens recommissioning of existing buildings and ensures that major renovations of federal buildings meet the same standards that new federal buildings are required to meet, 30 percent less energy use.

I would like to submit a July 26 letter signed by 10 major trade associations in support of this bill, as well as this written statement from the American Public Gas Association.

I was also happy to see Senator Murkowski's Nuclear Energy Leadership Act on the agenda, a bill which I co-sponsored.

In conclusion, I am excited to discuss these bills today. As a member of the Veterans Affairs Committee, I am also interested in hearing more about Senator Duckworth's proposal to expand support for veterans through the "Energy Ready Vets Program" at DOE, as well as Senator Ernst's initiative to use DOE computing capability to support veterans' health initiatives.

I look forward to working with Chairman Murkowski, Ranking Member Cantwell, Chairman Gardner and my colleagues to move these proposals forward.

I will go ahead and submit these. I want to submit these letters to you. Thank you.

Senator GARDNER. Without objection.

[The information referred to follows:]

November 29,2018

AMERICAN PUBLIC GAS ASSOCIATION

Submitted Testimony of the American Public Gas Association to the U.S. Senate Committee on Energy and Natural Resources, Subcommittee on Energy legislative hearing on S.3295, the "All-of-the-Above Federal Building Energy Conservation Act."

On behalf of the American Public Gas Association (APGA), we appreciate this opportunity to submit testimony to this important hearing on S.3295, the "All-of-the-Above Federal Building Energy Conservation Act."

APGA represents over 730 public gas systems across the country. Our members are retail distribution entities owned by, and accountable to, the citizens they serve. They include municipal gas distribution systems, public utility districts, county districts, and other public agencies that own and operate natural gas distribution facilities in their communities. Public gas systems' primary focus is on providing safe, reliable, and affordable natural gas service to their customers. APGA members serve their communities in many ways. They deliver gas to be used for cooking, cleaning, heating and cooling, as well as for various commercial and industrial applications.

APGA strongly supports S.3295, the All-of-the-Above Federal Building Energy Conservation Act of 2018. S.3295 would bring about sensible and needed reform to federal building energy policy and ensure the goals of greater energy efficiency in federal buildings are met.

Federal Energy Efficiency

Federal energy efficiency is an important issue for Congress to consider. The federal government is one of the nation's largest energy consumers. In FY 2017, the federal government consumed 357 trillion British thermal units (BTUs) in delivered energy in its building and facilities, costing over $6 billion per year.[1]

Indeed, Congress has acted in the past to improve federal building energy efficiency. The National Energy Policy Conservation Act (NEPCA) was one of the first bills to legislate federal energy efficiency and usage. NEPCA instituted several efficiency measures and was subsequently amended by the Energy Independence and Security Act of 2007(EISA). NEPCA and EISA mandated federal energy usage percentage reductions through 2015, required the installation of energy and water conservation measures, required federal energy managers to perform energy audits, and encouraged the employment of commissioning and recommissioning measures to ensure energy efficiency.[2]

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[1] http://ctsedwweb.ee.doe.gov/Annual/Report/GovernmentWideSiteDeliveredEnergyUseAndCostsInAllEndUseSectorsConstantDollarsCurrentYear.aspx

[2] https://www.wbdg.org/FFC/FED/CA/necpa_amended.pdf

The Energy Policy and Conservation Act (EPCA) , as amended, also contained provisions focusing on federal energy management. It requires the President to:

> establish or coordinate Federal agency actions to develop mandatory standards with respect to energy conservation and energy efficiency to govern the procurement policies and decisions of the Federal Government and all Federal agencies and shall take such steps as are necessary to cause such standards to be implemented.[3]

The federal government has implemented several programs following these statutes. The Federal Energy Management Program (FEMP) is charged with ensuring agencies meet statutory requirements in energy efficiency. This is done via stakeholder coordination, procurement and deployment, and management to ensure that statutory goals are met.

Natural Gas and Energy Efficiency

Congress has recognized the need and value of energy efficiency measures in federal facilities. Natural gas has played an important role in this policy goal, as the direct use of gas to service federal facilities provides many benefits. The direct use of natural gas is highly efficient – 92% of gas transmitted for direct use is utilized at the site (only 8% is lost in transmission). When used directly, natural gas can provide on-site heating, cooling, and appliance power. Additionally, the increased deployment of natural gas in combined heat and power (CHP) applications allows low-cost on-site power generation and heating simultaneously. This not only provides low cost power generation via natural gas, but also greatly increases energy efficiency by maximizing energy use.

Natural gas is used widely throughout the federal government. In 2017, the federal government used 115.1 trillion BTUs of natural gas, roughly 12.6% of total energy usage (this includes transportation and other fuels. For FY 2017, the federal government utilized 1.122 billion cubic feet of natural gas, or 115,124.8 billion BTUs.[4] This is a significant amount, and the largest single-source end use energy source.

Natural gas is necessary to continue Congress and the federal government's goal of federal energy efficiency. Not only is natural gas safe and cleaner-burning at the burner tip, but it is domestically abundant, very affordable, and highly efficient when used directly. Natural gas appliances, such as boilers, furnaces, heat pumps, commercial applications, water heaters, and CHP units are among the most efficient available and can realize significant energy and cost savings.[5]

Section 433 of EISA

While Congress has taken significant steps to prioritize energy efficiency, one section of EISA poses significant threat to both the future of federal energy efficiency and to federal energy costs. Section 433 of EISA (42 U.S. Code § 6834(3)(D)) requires a phasedown of fossil fuel use in new federal buildings and any major federal building renovations (in excess of $2.5 million in 2007 dollars), beginning with a 55%

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[3] https://legcounsel.house.gov/Comps/Energy%20Policy%20And%20Conservation%20Act.pdf

[4] http://ctsedwweb.ee.doe.gov/Annual/Report/SiteDeliveredEnergyUseandCostsbyEndUseSectorAndEnergyTypeByFederalAgencyNativeUnitsAndBillionBtu.aspx

[5] https://www.energystar.gov/products/most_efficient

reduction in 2010 and ending in a complete ban on fossil fuel use by 2030. [6] This is a radical provision that is unattainable, costly, and ultimately undermines the goal of federal energy efficiency.

While the fossil fuel ban has been in place for over a decade, it has yet to be implemented. In October 2014, DOE issued a Supplemental Notice of Proposed Rulemaking (SNOPR), which followed an October 2010 initial Notice of Proposed Rulemaking (NOPR). In the SNOPR, DOE stated that "achieving the reductions, especially the 100 percent reduction in 2030, will be challenging."[7] DOE also noted "that it would often be technically impracticable in light of an agency's specified functional needs to meet the requirements of today's rule during a major renovation."[8] In the 10-plus years since the inception of the fossil fuel ban, there has been no feasible path forward to meet the 100% reduction by 2030.

Compliance is only possible with the purchase of renewable energy credits (RECs), which are not only costly but don't actually improve energy efficiency. Further upping the costs are the impact on construction costs. DOE estimated in their SNOPR that construction costs as related to the fossil fuel ban would go from $30 million a year in 2015 to $1.135 billion by the 100% fossil fuel ban in 2030. This is nothing more than an extreme waste of taxpayer dollars.

All of this cost is for a policy that doesn't actually achieve its goal. The ban on fossil fuel would completely shut out the use of natural gas in federal buildings. As noted, natural gas technologies and appliances are highly efficient and continue to improve. Banning natural gas from federal buildings shut out energy efficient technologies. It would also ban CHP from being deployed, even where it is proven to reduce energy use and increase efficiency.

Taken on the whole, the fossil fuel ban is not only costly, but it completely undermines Congress' goal of federal building energy efficiency. It is a backward policy that runs counter to technological advances in energy over the last ten years.

S.3295

S.3295 takes a comprehensive view towards federal energy efficiency and energy savings. It implements several changes. It would strengthen existing commissioning requirements, encourage updated energy management systems and energy managers to prioritize energy efficiency. It would insert a presumption that new buildings are 30% better than existing energy codes unless found not to be cost effective, and extend that to major renovations. It would also require federal buildings to adopt more stringent local and state codes, should they fall within that jurisdiction. Importantly, it would require energy managers to implement cost-effective energy efficiency measures found in energy audits. Taken together, these measures are smart, results-oriented efficiency measures that are aimed at implementing real energy savings.

Most importantly, S.3295 would repeal the Section 433 fossil fuel ban. This would allow for efficient technologies to be utilized in federal facilities and maximize efficiency savings throughout the federal

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[6] https://www.law.cornell.edu/uscode/text/42/6834

[7] https://www.federalregister.gov/documents/2014/10/14/2014-24151/fossil-fuel-generated-energy-consumption-reduction-for-new-federal-buildings-and-major-renovations#h-63

[8] https://www.federalregister.gov/documents/2014/10/14/2014-24151/fossil-fuel-generated-energy-consumption-reduction-for-new-federal-buildings-and-major-renovations#h-63

building portfolio. It increases flexibility for energy managers in procuring and deploying technologies that work best for their facilities.

Conclusion

The efficiency measures, coupled with the flexibility of repealing the fossil fuel ban, make for a smart, forward-thinking approach to federal energy efficiency policy. S.3295 furthers Congress' goal to increase federal energy efficiency, will result in a more robust federal building portfolio, and will maximize taxpayer expenditures for energy in federal buildings. APGA supports S.3295 and strongly encourages the Senate pass this bill.

July 27, 2018

The Honorable John Hoeven
U.S. Senate
338 Russell Senate Office Building
Washington, DC 20510

The Honorable Joe Manchin
U.S. Senate
306 Hart Senate Office Building
Washington, DC 20510

Dear Senators Hoeven and Manchin:

We, the undersigned organizations, write in support of S. 3295, the "All-of-the-Above Federal Building Energy Conservation Act of 2018." This legislation would bring about much needed reform to federal energy policy and we commend your efforts.

The federal government is the largest energy consumer in the nation. U.S. taxpayers spend $6 billion a year on energy for buildings alone. Yet the federal government does not currently have requirements to improve the efficiency of federal facilities – a gap in policy that results in higher energy costs and more government spending. S. 3295 takes concrete steps towards sensible energy management requirements that will also save taxpayer dollars. This legislation would:

- Enhance energy intensity reductions and encourage the use of up-to-date energy management systems.
- Allow flexibility in energy audits and commissioning, and strengthen federal commissioning directives.
- Require energy managers to implement energy efficiency measures recommended in energy audits, should they be found cost-effective.

These efficiency measures would be paired with a repeal of Section 433 of the Energy Independence and Security Act of 2007, which instituted a phaseout of fossil fuel use in federal buildings – culminating in the prohibition of all fossil fuel use (including fossil fuels used for electric generation) by 2030. This measure is nearly impossible to implement, causing uncertainty for energy providers and federal facilities while inhibiting long-term innovation and growth, all at a significant cost to taxpayers. Furthermore, the fossil fuel ban actually works against increased energy efficiency by discouraging and preventing the adoption of high-efficiency technologies such as combined heat and power systems.

We believe this legislation is a step forward towards a cohesive and functional federal energy efficiency policy that not only works for the federal government, but also does not waste taxpayer dollars. This legislation would ensure that energy managers for federal buildings have the flexibility to achieve maximum efficiency goals and to realize actual energy savings.

We applaud your efforts and thank you for your continued focus on enhancing energy efficiency.

Sincerely,

American Public Gas Association
American Gas Association
Alliance to Save Energy
American Public Power Association
Edison Electric Institute
Energy Systems Group
Federal Performance Contracting Coalition
Fuel Cell and Hydrogen Energy Association
National Rural Electric Cooperatives Association
Ohio Fuel Cell Coalition

Senator GARDNER. Thank you, Senator Manchin.

I will now turn to Congressman Barton, our colleague from the great State of Texas.

Before you begin, I just want to thank you for your years of service. Congressman Barton, I began in the House on your Energy and Commerce Committee. If I would have stayed there, I would now be Ranking Member of the least senior group of the Committee.

[Laughter.]

So I would probably be on the fourth row still, but it is great to have you here, Congressman Barton. Thank you, welcome.

We will allow you to proceed with your comments on H.R. 6511, the Strategic Petroleum Reserve Reform Act, and then we will turn to Chairman Murkowski for some comments and then Mr. Menezes.

STATEMENT OF HON. JOE BARTON, A U.S. REPRESENTATIVE FROM TEXAS

Mr. BARTON. Thank you, Chairman.

I feel like it's old home week. The first time I was in this very hearing room was in 1981 when I was a White House Fellow with the Department of Energy, and there was a hearing on decontrol of wellhead prices which I later offered a bill in the late '80s that passed and became law when President Bush signed. I was sitting back there. The room was crowded. There were lots of cameras, lots of Senators and I was just in awe of even being in the building.

So we've come full circle. I come back today. I would consider you to be a protégé of mine and Senator Cassidy. I served with Congressman Portman before he became Senator Portman. Of course, I've known Senator Murkowski and I knew her dad very well. I can't say I've known Senator Manchin or Senator Smith, but I should have. So I'm honored to be here. Of course, Under Secretary Menezes used to work for me and helped pass the Energy Policy Act of 2005. So it's an honor to be here.

Today's bill is, I mean—I think Senator Manchin pointed out, and you pointed out, you've got 14 bills you're looking at. They're all important bills. It's a good thing to see the Senate working together. I wish there were some TV cameras here to show that you can cooperate. It's not all the Kavanaugh hearing and things like that.

My bill is one of those bills. We have a great Democratic sponsor, Congressman Bobby Rush of Chicago, who is probably going to be the next Subcommittee Chairman of the Energy Subcommittee of the Energy and Commerce Committee. So it's bipartisan.

I'm not aware of any opposition. Now, there may be some. I guess that would be the purpose of today's hearing, but the Administration supports it and I've talked personally to Secretary Perry about this.

The Strategic Petroleum Reserve (SPR) was established in 1970 and, contrary to popular belief, I was not in the Congress in 1970.

[Laughter.]

We were just coming out of the Arab oil embargo, there were lots of issues about whether the United States could ever be energy independent and we wanted to preserve our domestic resources, but we also wanted to build a reserve in case there was another

oil embargo. Through the years, we've authorized up to a billion barrels. At one time we actually built capacity for about 700 million and, I believe, we have a little under 500 million barrels in the reserve. The last five to six years, as our energy situation has improved, the Congress and the President have begun to use the reserve. It's, kind of, an emergency piggy bank.

In the 21st Century Cures Act, we authorized selling enough oil to fund $6 billion in research to find a cure for cancer and other diseases, just in the last Congress.

So this bill, it's a simple bill. It simply says if we have unused capacity—at the discretionary of the Secretary of Energy to put it up for bid to be leased and give an option to the private sector to lease it. The Secretary doesn't have to put it up for bid. It's not mandatory and if he does, or she does, depending on who the Secretary is at the time, the private sector doesn't have to do anything, but if they do want to do it, the existing fiscal reserve is located near oil refineries on the Gulf Coast.

It does have an infrastructure in place. It needs to be updated, but it would make it a good thing for the private sector to utilize the unused space. And it would be a good thing for the people of the United States because the money that would be obtained from leasing—some of that money could be used to update and modernize the SPR. This would not be a Yucca Mountain situation where the ratepayers pay into the trust fund, but the money is used for everything but building Yucca Mountain. So it's a great bill. I hope the Committee will hear it favorably.

And one last thing—my time is about to run out, being a House member, I do honor time constraints.

[Laughter.]

In December of this year coming up, there is the probability that we are going to export more crude oil than we import. For the first time in forever, we are going to be truly energy independent in oil but also in natural gas. And as Senator Manchin well knows, we export a lot of coal. So we have reached that nirvana where the United States of America is going to be totally energy independent. Nobody would have dreamed of that, even 20 years ago, and I think that's a good thing.

With that, I yield back.

Senator GARDNER. Thank you, Congressman, and again, thank you for your service and being back with the Senate Energy Committee. Thank you.

Chairman Murkowski, the Chairman of the full Committee.

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

The CHAIRMAN. Thank you, Mr. Chairman, and I am so glad that I was here to hear my friend and fine Congressman from Texas, Representative Barton.

I appreciate your leadership, the effort that we made to lift that oil export ban, that 40-year policy that has allowed us now to be a participant, to be a major player, a world player with our oil resources has been transformative. You led on the House side on that initiative, and I appreciate your leadership there.

I also appreciate what you have been doing as you review our Strategic Petroleum Reserve. You used the term, it has been viewed as, the "emergency piggy bank." I have called it the ATM for whatever Congress is looking for.

I, along with so many members on this Committee, guard jealously that safety net that we put in place purposely, not to make it easier for you to drive up to the pump and pay a few pennies more, but to be that emergency reserve. And so, we need to make sure that that Strategic Petroleum Reserve is actually strategic. And that is why the effort for the modernization, I think, has been important. That is why I think we need to be very watchful and very guarded as we access it.

But your proposal for this review for options as we recognize that we do see changes is one certainly worthy of consideration. I know that an analysis, a review of all aspects of our Strategic Petroleum Reserve, is underway with the Department and I look forward to that.

I wanted to take just a couple of minutes, Mr. Chairman, and speak to a bill that is on your calendar this morning, and I appreciate all the good legislation that is out there.

I have introduced one that we are calling the Nuclear Energy Leadership Act, and I have long been concerned that here in this country we are ceding our place as a global leader in nuclear power. We have competitors—with China, with Russia—who are moving forward with advanced nuclear technologies, and I just think that we have been slow to come together around any form of a coherent strategy.

In order to be a serious player in a global nuclear future, we have to develop, we have to commercialize and we have to sell the most advanced reactors in the world. If we don't do that, what we risk is that we will no longer be this arbiter of nuclear safety and security, we basically put that in the hands or in the control of nations like Russia and China.

But we have some of the smartest people in the world at our national labs, in our universities, in industry. There are innovators working across the United States to bring their advanced reactor concepts to market, ranging from water-cooled to salt-cooled, from low temperature to high temperature and from a few megawatts to thousands. I think we all recognize that these different technologies may have different applications in a niche here or there, but we do not know that until we are able to better understand where these technologies might fit into the market.

We are seeing other countries that are directing billions of dollars behind advanced technologies that they will rapidly develop through their state-owned enterprises. And so, in order to compete, we need DOE to partner with our industry. We need to change policies to better focus our efforts.

There is a lot of good work going on. This is a very bipartisan effort. I am pleased to be able to work with Senator Booker as my lead co-sponsor, but we have a lot of members of this Committee that have joined us, Senators Risch, Capito, Manchin, Duckworth, and a host of others.

So as we focus on energy security, on clean energy security, on national security and economic opportunity, I think it is imperative

that we be moving forward on the nuclear front as well. I am pleased that this bill is before the Committee today.

Thank you.

Senator GARDNER. Thank you, Chairman Murkowski.

Congressman Barton, you mentioned spending time in this room, unless you wish to feel like you are serving time, you are free to go any time that you would like.

[Laughter.]

We will turn now to Secretary Menezes.

Thank you very much.

STATEMENT OF HON. MARK W. MENEZES, UNDER SECRETARY, U.S. DEPARTMENT OF ENERGY

Mr. MENEZES. Thank you, Mr. Chairman.

Chairman Gardner, Ranking Member Manchin, members of the Subcommittee, former Chairman Joe Barton, it's a privilege and an honor to serve at the Department of Energy, an agency tasked with, among other important responsibilities: overseeing our nation's energy supply, managing the Department's 17 National Laboratories, supporting early-stage energy R&D across a wide range of science and engineering disciplines and working effectively with our states and our local governments on our nation's energy challenges. And thank you for the opportunity to testify before you here today on this legislation pertinent to DOE.

Having looked at all of the bills, generally I can say that, much like the Department, we share the goals of a lot of these bills. We share some of the concerns that the bills try to address. The Department is doing a lot of work in a lot of these areas that are touched on by the bills. The bills appear to bring some coherence. So those are my general statements.

As you know, the Administration continues to review these bills and I will also say that on most of these bills your staffs have been working with our technical experts over at DOE to look at some of the issues that the bills are trying to address. And I would invite you to continue to be able to use our staff and our experts as we continue to work on the bills, should they need any further refinement.

As you know, the President's America First Energy Plan rightly calls for utilizing all of our energy sources to achieve energy security and economic strength at home and our energy dominance through our exports to markets abroad.

In the area of fossil, through the increase in production of crude oil and other liquid fuels, refined petroleum products and production of natural gas, the United States has become, truly, an energy powerhouse. As Chairman Barton pointed out, who would have thought that back in the days when the Department of Energy was created due to an energy crisis and the fact that we were at mercy to the OPEC-producing nations? We set up SPR. We set up the Department of Energy and fast forward—I shouldn't say fast forward because it was quite a way to get to where we are today.

Chairman Murkowski talked about the repeal of the export oil ban, but today, traveling around the world, to be able to stand up and to say that America is now the leading producer of oil and natural gas in the world is quite an extraordinary thing to say. Our

allies and our partners across the world greatly appreciate that. That is a recent occurrence, but look at how far we have come.

And, of course, our dominance in that area now provides choices to our friends and allies and our partners. And we are now economic competitors to all of those OPEC nations that have given rise to why we had to create the Department of Energy to begin with. We're competitors of the OPEC nations, and we are competitors to Russia.

So it is an exciting time. It is the work that has been built by many Congresses, many leaders, and it is a great opportunity for us to continue in that area.

Some of the bills deal with LNG export. We are committed to making decisions on natural gas export applications, expeditiously, once the agency has all the information necessary to make the required public interest determination. Additionally, the Department supports an effective modernization of the Strategic Petroleum Reserve.

In the world of nuclear, of course, nuclear is clean, reliable, safe, but the nuclear power industry, as Chairman Murkowski points out, needs to continue to innovate. Advanced reactors, including small, modular reactors, hold great promise—a safe, clean, reliable and secure power for our nation. The Department recognizes that advanced reactors face challenges to ultimately achieving commercialization. In addition to early-stage research and development, the Administration supports prioritizing investments in nuclear energy research infrastructure to enable private sector innovation.

Regarding the Nuclear Energy Leadership Act, it would enhance nuclear energy innovation specifically related to advanced nuclear reactor technologies, and the bill specifically would direct the Department to construct a fast neutron-capable research facility. And this, of course, is consistent with the Department's current plans to develop a virtual test reactor.

Electricity—our economy, our national security and the well-being of our citizens depend on the reliable delivery of electricity. The Department, working with and through the national laboratories, supports key efforts to improve the resilience and the reliability of the nation's electricity system. These include supporting private industry's investment in transmission systems to support resource adequacy and generation diversity, developing and deploying cybersecurity technology for the energy sector, moving forward with new architecture approaches for the transmission and distribution system to enhance security and resilience and advancing energy storage.

The Advancing Grid Storage Act of 2018 would establish a cross-cutting energy storage program at DOE. Its intent is consistent with the early-stage research in grid-scale energy storage that is currently being conducted by multiple offices at the DOE offices.

The Flexible Grid Infrastructure Act proposes that the Department develop and implement reports, research and development, state technical assistance and an innovation challenge to harness the capability and flexibility of Distributed Energy Resources. Many states, many areas have been looking into that for years. This has been an issue that has been evolving over time. The Department appreciates the objectives of the proposed legislation and

it incorporates the R&D conducted by several of our DOE offices, notably under our DOE Grid Modernization Initiative.

Energy efficiency—DOE's Building Technologies Office leads a vast network of research and industry partners to continually develop innovative, cost-effective energy solutions. Efficient buildings help us to do more with less energy. This alleviates pressure on our electric grid and extends our energy resources.

As a research agency, DOE plays an important role in the innovation economy. The Office of Technology Transfer, the National Laboratory complex and other DOE programs currently strive to meet the objective of advancing innovation driven by DOE R&D into the private sector.

DOE has a long and successful history of working with states on the nation's most significant energy challenges. Nearly all state and territory governments and certain local governments have an energy security or assurance plan which serves as a foundation for action when an energy disruption threatens public welfare or when the energy industry requests help.

These plans, as pointed out by Chairman Gardner, address energy supply risks and vulnerabilities and enable quick recovery and restoration, combined with training exercises which we think are key for personnel and stakeholders. Energy assurance plans enhance response and recovery efforts and support resiliency investments.

Finally, the Department is eager to assist in promoting the physical and economic health of our veterans, who have given so much in service to our nation. We are equally committed to ensuring full protection for DOE federal employees and the rights of those who present claims of whistleblower retaliation.

In conclusion, let me thank you again for the opportunity to be here today. The Department appreciates the ongoing bipartisan efforts to address our nation's energy challenges, and we look forward to working with the Committee on the legislation today and on future legislation. I would be happy to answer any of your questions.

Thank you.

[The prepared statement of Mr. Menezes follows:]

Testimony of Under Secretary of Energy Mark W. Menezes
U.S. Department of Energy
Before the
Committee on Energy and Natural Resources
Subcommittee on Energy
United States Senate

November 29, 2018

Introduction

Chairman Gardner, Ranking Member Manchin, and Members of the Subcommittee, it is a privilege and an honor to serve at the Department of Energy (DOE or the Department), an agency tasked with, among other important responsibilities: overseeing the Nation's energy supply, managing the Department's 17 National Laboratories, supporting early-stage energy R&D across a wide range of science and engineering disciplines, and working effectively with the States on our Nation's energy challenges. Thank you for the opportunity to testify today on behalf of the Department regarding legislation pertinent to DOE that is now pending in the Senate.

I have been asked to testify on 14 bills today. The Administration continues to review all of these bills. I appreciate the ongoing bipartisan efforts to address our Nation's energy challenges and I look forward to working with the Committee.

Advancing Energy Dominance through Energy Programs

The President's America First Energy Plan rightly calls for utilizing all of our energy sources to achieve energy security and economic strength at home and energy dominance through exports to markets abroad.

Fossil Energy

There has been an American energy renaissance in the United States over the last decade. Through the increase in production of crude oil and other liquid fuels, refined petroleum products, and production of natural gas, the United States has become an energy powerhouse.

S. 3495 (Barrasso-WY) - LNG Permitting Certainty and Transparency Act

When it comes to fossil fuels, the United States has become the world's largest producer of both oil and natural gas, resulting in an abundance of reliable and affordable energy resources available for domestic use and for export. DOE is committed to making decisions on natural gas export applications to all non-FTA countries expeditiously once the agency has all of the information necessary to make the required public interest determination.

S. 3618 (Cassidy-LA)/H.R. 6511 (Barton-TX) Petroleum Reserve Reform Act

The Strategic Petroleum Reserve (SPR) protects the U.S. economy from disruptions in critical petroleum supplies and meets the U.S. obligations under the International Energy Program. The Department supports an effective modernization program for the SPR. Leasing to foreign governments for strategic purposes is in line with the current designed and authorized use of the SPR and would be the preferred use of excess storage capacity. Commercial leasing, however, may prove to be technically problematic as it would likely require more frequent drawdowns for which the SPR caverns are not designed. Additionally, it may require significant up-front costs to build the desired functionality.

S. 2803 (Manchin-WV) Fossil Energy Utilization, Enhancement, and Leadership Act

DOE advances transformative science and innovative technologies that enable the reliable, efficient, affordable, and environmentally sound use of fossil fuels. As of March 2018, fossil energy sources constitute over 77 percent of the country's total energy use and are critical for the nation's security, economic prosperity, and growth. The Department is currently reviewing the proposed language and we look forward to working with the Committee on this legislation.

S. 1089 (Portman-OH) Re-Refining Used Lubricating Oil Study

In response to section 1838 of the Energy Policy Act of 2005 (EPACT), DOE prepared a report in July 2006 titled "Used Oil Re-Refining Study." The 2006 study identified two key objectives related to re-refining and three key steps were identified to support those objectives.

Nuclear Energy

Nuclear energy is clean, reliable, and safe, but the nuclear power industry needs to continue to innovate.

Advanced reactors, including small modular reactors, hold great promise as a clean, reliable, and secure power source for our nation. The Department recognizes that advanced reactors face challenges to ultimately achieving commercialization. In addition to early-stage research and development the Administration supports prioritized investments in nuclear energy research infrastructure to enable private sector innovation.

S. 3422 (Murkowski-AK) Nuclear Energy Leadership Act

The Nuclear Energy Leadership Act would enhance nuclear energy innovation, specifically related to advanced nuclear reactor technologies by providing goals for DOE to further accelerate the development of advanced reactor technologies, developing a program for making available the fuel required by these advanced reactors, and supporting the development of the high-skilled workforce needed to develop, regulate, and safeguard advanced reactors.
This bill would also extend federal power purchase agreements (PPAs) from 10 years to 40 years, and require DOE to enter into at least one PPA from a commercial nuclear reactor by 2023.

DOE has reviewed this bill and has a few observations:

• The requirement to enter into at least one agreement to purchase power from a commercial nuclear reactor is achievable at Idaho National Laboratory if it is done through a phased agreement to include the Idaho Power Company. However, potential conflicts with state law may need to be addressed.

• The bill would authorize the Secretary to enter into one or more agreements to carry out no fewer than four (4) advanced nuclear reactor demonstration projects. This initiative would be dependent on the availability of appropriations to attain its objectives.

• This bill would direct the Department to construct a fast neutron-capable research facility. This is consistent with the Department's current plans to develop a Versatile Test Reactor.

• DOE acknowledges the need for a strategic plan and one is currently under development.

Electricity

Our economy, national security, and the well-being of our citizens depend on the reliable delivery of electricity. The Department, working with and through our National Laboratories, supports key efforts to improve the resilience and reliability of the nation's electricity system. These include supporting private industry's investment in transmission systems to support resource adequacy and generation diversity; developing and deploying cyber security technology for the energy sector; moving forward with new architecture approaches for the transmission and distribution system to enhance security and resilience; and advancing energy storage.

Megawatt-scale energy storage is becoming a critical system asset that provides a buffer between generation and consumer demand through services such as frequency response, ramping support and bulk load shifting, allowing for greater utilization of generation assets.

S. 3376 (Smith-MN) Advancing Grid Storage Act of 2018

This bill would establish a cross-cutting energy storage program in DOE focused on 1) an energy storage research program, 2) a demonstration and deployment program, and 3) a technical assistance and grant program for mechanical, electrochemical, biochemical, and thermal energy storage technologies. Its intent is consistent with the early-stage research in grid-scale energy storage that is currently being conducted by multiple DOE offices.

S. 1875 (Wyden-OR) Flexible Grid Infrastructure Act of 2017

This bill proposes that the Department develop and implement reports, research and development, State technical assistance, and an innovation challenge to harness the capability and flexibility of Distributed Energy Resources (DERs) in service to the nation's electric grid. The proposed legislation advocates for a combination of analysis, improved methods and tools,

and targeted research, development, and technical assistance to advance both grid flexibility and the adoption of DERs.

The Department appreciates the objectives of the proposed legislation as it incorporates R&D conducted by several DOE offices, notably under the DOE Grid Modernization Initiative.

Energy Efficiency

DOE's Building Technologies Office leads a vast network of research and industry partners to continually develop innovative, cost-effective energy solutions.

S. 3295 (Hoeven-ND) All-of-the-Above Federal Building Energy Conservation Act

Efficient buildings help us do more with less energy. This alleviates pressure on our electric grid and extends our energy resources. Given its complexity, the Department continues to review this bill.

Advancing Research and Technology Transfer

As a research agency, DOE plays an important role in the innovation economy. DOE's 17 National Laboratories engage in research that expands the frontiers of scientific knowledge and generates new technologies that address the Nation's greatest energy challenges.

Accelerating the transition of technologies from the laboratory bench to the marketplace is an important component of increasing America's economic prosperity and energy security. This mission is the focus of DOE's Office of Technology Transitions, which oversees the technology transfer programs across the National Laboratories, including industry and other stakeholder engagement for the purpose of private sector access to lab-developed technologies and capabilities for the purpose of moving these to the marketplace.

S. 2257 (Coons-DE) IMPACT for Energy Act

The objective of the proposed non-profit foundation is to advance innovation driven by DOE R&D into the private sector. The Office of Technology Transfer, the national laboratory complex, and other DOE programs currently strive to meet this objective.

Cooperative Research and Development Agreements (CRADAs) allow industry partners to share technical expertise and resources to advance the commercialization of federally developed technology. Strategic Partnership Project agreements allow industry partners to pay national labs to perform a defined scope of research and obtain intellectual property rights from the sponsored work. National User Facilities within the national laboratory complex allow academia and industry to perform research on critical science infrastructure found only at the national labs. User Agreements are used to help advance the research and technological development in a public private partnership. Based on a successful pilot at DOE's National Laboratories, Secretary Perry authorized the permanent establishment of Agreements for Commercializing Technology (ACT) in November 2017, allowing our labs to assume more risk while streamlining their

processes to partner with businesses and non-federal entities in commercializing their innovative technologies.

Interactions with the States

DOE has a long and successful history of working with States on the Nation's most significant energy challenges. Nearly all state and territory governments and select local governments have an energy security or assurance plan, which serves as a foundation for action when an energy disruption threatens public welfare or when the energy industry requests help. These plans address energy supply risks and vulnerabilities and enable a quick recovery and restoration. Combined with training and exercises for personnel and stakeholders, energy assurance plans enhance response and recovery efforts and support resiliency investments.

S_____ (Gardner-CO) Implement State Energy Security Plans

DOE has provided support for state and local governments to develop and refine energy assurance plans, build in-house expertise on infrastructure interdependencies (i.e., other critical infrastructure systems' reliance on electricity for operations) and vulnerabilities, integrate renewable energy, and utilize new applications such as cyber and smart grid technologies.

Planning for energy sector disruptions—often led by a governor's energy office—is essential to safeguarding energy system reliability and resilience. Energy assurance planning can help to achieve a robust, secure and reliable energy infrastructure that is also able to restore services rapidly in the event of any disaster.

S. 1713 (Shaheen-NH) Investing in State Energy Act

This bill would require DOE to distribute funds for the Weatherization Assistance Program and the State Energy Program within 60 days of Congress making the funds available for such programs. The requirements in this bill may need to be reconciled with state fiscal deadlines and distribution schedules.

Human Capital

The Department is eager to assist in promoting the physical and economic health of our veterans, who have given so much in service in the Nation. We are equally committed to ensuring full protection for DOE federal employees who present claims of whistleblower retaliation.

S.____ (Ernst-IA)/H.R. 6398 (Norman-SC) Department of Energy Veterans' Health Initiative

The Administration continues to review the bill. Section 4 of this bill authorizes DOE to establish and carry out a research program in artificial intelligence and high performance computing, focused on the development of tools to solve big data challenges in partnership and coordination with the Department of Veterans Affairs (VA). While driving innovation in artificial intelligence, the joint effort with the VA will simultaneously advance veteran's

healthcare, supporting their efforts to identify potential health risks and challenges utilizing data on long term healthcare, health risks, and genomic data collected from veteran populations. The Energy and Water Development and Related Agencies Appropriations Act, 2019, within P.L. 115-244, provided $27 million to the VA to support the collaboration between the DOE and VA over the next five years. This section of the bill is strongly aligned with the Administration's stated Research and Development Budget Priorities that include American Leadership in Artificial Intelligence, Maximizing Interagency Coordination as well as Workforce for the 21st Century Economy. Section 4 of the bill is supported in addition by an agency to agency Memorandum of Agreement that outlines the significance of the activity.

S. 3088 (Duckworth-IL) Energy Jobs for Our Heroes Act of 2018

This bill would require the Secretary of Energy, in coordination with the Secretary of Defense, to establish a program to prepare veterans for careers in the energy industry, including the solar, wind, cybersecurity, and other low-carbon emissions sectors or zero-emissions sectors of the energy industry.

Senator Duckworth's office solicited technical assistance comments from DOE. Both the Solar Energy Technologies Office and the Wind Energy Technologies Office have submitted comments.

S. 2968 (Duckworth-IL) Department of Energy and NRC Whistleblower Protection Act

The effect of this bill would be a waiver of DOE's sovereign immunity, and an expansion of legal forums for claimants with associated liabilities and costs to DOE. S. 2968 is therefore more than a technical fix; it is a substantive change in law.

This bill would provide an additional forum for DOE federal employees to seek legal redress for whistleblower claims. Currently, DOE federal employees have three forums available to seek this legal redress: 1) Office of Special Counsel; 2) the collective bargaining agreement grievance process, or the DOE grievance order process; and 3) personnel actions before the Merit Systems Protection Board.

Conclusion

Thank you again for the opportunity to be here today. The Department appreciates the ongoing bipartisan efforts to address our Nation's energy challenges, and looks forward to working with the Committee on the legislation on today's agenda and any future legislation. I would be happy to answer your questions.

Senator GARDNER. Thank you, Secretary Menezes, and again, thank you, Congressman Barton.

Under Secretary Menezes, in response to President Trump's Executive Order 13800, I mentioned in my opening, on strengthening the cybersecurity of federal networks and critical infrastructure, the Department issued a report that had identified a number of gaps in the nation's ability to recover from cyber incidents. Your testimony touched on a couple of these things, at least one of these gaps, that highlighted the importance of state planning for energy sector disruptions, including those related to cyber. The DOE report, I read with great interest and concern, working with Senator Bennet on the Enhancing State Energy Security Planning and Emergency Preparedness Act.

Could you perhaps talk a little bit about and elaborate a little bit about how the Act can complement the Department's current authorities to help address any gaps in state energy planning? And as you consider that question, you know, you talk about the rapid restoration of services in the event of a disaster, how planning can help facilitate that and whether or not exercises under those plans for emergency preparedness help complement existing efforts in that area.

Mr. MENEZES. Thank you for the opportunity to comment on the bill.

We have reviewed your bill. I have discussed this with Assistant Secretary Karen Evans and, indeed, it's very important that we have in place provisions that ensure that there are no gaps as we make sure that we have the most reliant, reliable and resilient system in place.

Now, almost all states and certain local governments have assurance plans or some type of energy security plan and, you know, we typically provide much expertise and technological assistance to these states to develop the programs. A key part of this is training to ensure that the folks that have devised these plans know how to implement and carry them out when they're needed because these plans are designed to be able to respond when there is a threat or when there is a serious potential problem facing the grid opportunities. We do provide, at INL and other places in our labs and in our departments, the training and exercises to ensure that those that have the responsibility to carry these out are properly trained.

Your bill sets forth in one spot, if you will, the clear lines of how these plans would be provided to the government, under what terms and conditions financial assistance would be given, what technical assistance the states and local governments would be expected to receive, and it ensures that the risks are borne at the level where the plans are developed and put in place. We think the states and the local governments know their resources and their systems, of course, better. We bring in the standards and the training. And so, we think that this bill certainly clarifies that.

Senator GARDNER. Great. Thank you, Secretary.

In your testimony you also talked about other legislation that I am co-sponsoring dealing with the Department of Energy's Veteran's Health Initiative Act that leveraged tools that you have at your disposal to help improve veteran's health care. I think this is

a great partnership that will yield significant benefits. It is a partnership that already exists between the DOE and the VA.

Could you talk about some of the highlights and the benefits the DOE has already realized through this program and some of the success that this partnership has had to date, already, on veteran's health care and what kinds of developments you see in the future then knowing the knowledge, techniques and tools that you could further utilize under this legislation, partnerships can help create transfers of those ideas and innovations to the Federal Government?

Mr. MENEZES. And is this the, I'm sorry.

Senator GARDNER. I apologize. This is Senator Ernst's legislation, H.R. 6398, Senate bill 3656.

Mr. MENEZES. Well, as you're aware, you know, a key mission of DOE is leadership in advanced computing and we are using our abilities for data access and evaluation together with our computer capabilities to really develop in the field of human health related to our veterans.

We think that the VA will serve as a template for how to build the capacity with other agencies as well so that we can evaluate the health care issues that we have identified, and indeed we believe that this can be used to address several of the issues that are unique to veterans.

Senator GARDNER. Secretary Menezes, I am going to cut you off right there. Perhaps we can continue that in follow-up but I am going to turn it over to Senator Manchin right now.

Thanks.

Senator MANCHIN. Thank you, Chairman.

Mr. Menezes, if you could just explain in layman's terms so we understand—we are, for the first time, exporting more oil than we are importing. Is that correct?

Mr. MENEZES. We are a net exporter of natural gas, of oil and natural gas, yes.

Senator MANCHIN. Okay.

Why do we still import if we are independent? Why are we still buying oil? Is it because of refineries, or are there other reasons that you can make it very simple for me to understand?

Mr. MENEZES. Well, it's my understanding that we import some oil in part because we have refineries that were built to receive certain oil from certain places that we, frankly, could not get locally. So as a consequence we do import certain amounts of oil.

Senator MANCHIN. So basically, we are not energy-independent because we are depending on that oil for our refineries to run?

Mr. MENEZES. We are producing more and more, just over the past few——

Senator MANCHIN. Well, I mean, it must be the oil that we are producing is not compatible with the refineries that we have——

Mr. MENEZES. Correct.

Senator MANCHIN. ——and technology has not changed.

Mr. MENEZES. Right.

Senator MANCHIN. Is there an incentive from the DOE to make them change the refineries or increase their technology to accept—so we can truly be energy-independent?

Mr. MENEZES. Right.

So there are different kinds of oils that are produced all over and there are different kinds of processes——

Senator MANCHIN. I understand. I understand all that.

Mr. MENEZES. ——and so, there will always be different kinds of refineries, really, all over, you know, our nation.

Senator MANCHIN. But I mean, do you agree that, basically, to be energy-independent you should be able to not depend on any import at all to run your energy sector?

Mr. MENEZES. I do agree with that. I will also say we still import some refined products. So that is an issue as well. It seems to me along the lines of what you're saying——

Senator MANCHIN. Is that your bailiwick—are you responsible for that as far as what our balances are in importing and exporting?

Mr. MENEZES. Well our—the Energy Information Administration does keep track of what we produce, what we import, what products we import, at what levels, at what times and where and——

Senator MANCHIN. If I might ask to indulge the Chairman that we could go more in depth on that to find out how we could truly be energy-independent within our own country? So maybe further down the line we can bring you back or bring your team back.

Senator GARDNER. [Off-mic response]

Senator MANCHIN. That would be good?

Ok, thank you, Mr. Chairman.

I also notice in your testimony you are still reviewing Senate bill 2803, which is the FUEL Act, and I want to thank you for working on that. The FUEL Act, S. 2803—I believe it is critical policy ensuring that advanced coal and natural gas technologies borne in our labs reach commercialization. Also, it is needless to say that it is important for maintaining coal jobs, reducing greenhouse gas emissions and ensuring our energy security.

According to the Energy Information Administration, coal and natural gas will provide 56 percent of the total U.S. net electricity generation in 2040, and 50 percent of total global energy consumption by 2040. In the meantime, the current generation of coal plants is about 25 percent more efficient than the last generation, and a lot of this is due to federal partnerships and investments, but it is important that we keep our eye on the ball.

So in light of the projected reliance on fossil fuels here in the U.S. and abroad, do you believe that ongoing federal investment in coal and natural gas technologies is key to ensuring a cleaner energy future? And, is there any stipulation we are putting as we have different types of agreements with India and China, who are not using the same technologies that we are, to be able to use the fossil fuel more cleanly?

Mr. MENEZES. Well, it's interesting that you say that and the short answer is yes, your bill is consistent with our "all-of-the-above." Your bill focuses on fossil, but again, it's "all-of-the-above."

Senator MANCHIN. Right.

Mr. MENEZES. Particularly on India, I actually plan to be attending a trip to India next week. And on the agenda for India is we have a task force for natural gas. You know they have infrastructure issues, but they want to import more U.S. LNG.

We also, of course, have nuclear that we're developing, we hope to develop in India as well. I mean, they want to bring electricity to 300 million of, you know, their people.

What was——

Senator MANCHIN. I understand that people are very much concerned that India will throw caution to the wind as far as the environment is concerned because they have to bring——

Mr. MENEZES. I apologize for interrupting but—so they, right now, they get most of their electricity from coal. They have an abundance of coal. I am going to specifically hold a meeting with those that are interested in our carbon capture utilization sequestration technologies.

Senator MANCHIN. Right.

Mr. MENEZES. So they have actually——

Senator MANCHIN. Well even just the scrubbers and low NOx boilers and baghouses for mercury. Those are just basically the things that we have perfected.

Mr. MENEZES. Well it is and, again, on the carbon capture side of it, you're talking about addressing the CO2 as well.

Senator MANCHIN. Sure.

Mr. MENEZES. So you have the panoply of pollution control equipment that we offer but, specifically, they are looking for——

Senator MANCHIN. But particulates is their biggest problem right now. They cannot breathe.

Mr. MENEZES. Right.

Senator MANCHIN. And we have been able to cure that problem in West Virginia and across the country by using the technologies we have perfected.

Mr. MENEZES. Right.

Senator MANCHIN. So I would hope that you would take that and maybe report back to us, because I am understanding the plants that they are putting online do not even have the basics of sulfur reduction, NOx reduction, baghouses for mercury, the things that we have already been doing for the last two decades.

Mr. MENEZES. Well, I will be happy to report when I return after my trip next week.

Thank you.

Senator MANCHIN. Thank you.

Senator GARDNER. Thank you, Senator Manchin.

Senator Cassidy.

Senator CASSIDY. Senator Manchin, you asked why do we still import?

One, we cannot get natural gas from where it is produced up to New England. And so, periodically they will import natural gas because the Governor of New York will not allow pipelines to deliver low-cost, clean-burning, natural gas to replace fuel oil in Manhattan or to supply gas for cold winters in New England. So I do think that is something to consider.

Senator MANCHIN. The only thing I would say on importing from the standpoint can we import from—if we are going to import, can we import from the United States?

Senator CASSIDY. Got it.

Senator MANCHIN. We have a lot of gas.

Senator CASSIDY. Yes.

Senator MANCHIN. We are trying to get the pipeline.

Senator CASSIDY. Pipeline is cheaper.

Senator MANCHIN. We are trying.

Senator CASSIDY. I am going to speak to the SPR reform bill, Senate bill 3618.

We know that Congress established the SPR after the oil embargos of 1970. But now we use it for something besides energy reserve, we use it to preserve natural disaster protection, encourage a stable economy and rightly or wrongly to pay for legislation that sometimes has nothing to do with energy.

It is now mandated about 290 million barrels from the SPR will be sold over the next decade or so. So the legislation we have proposed would authorize DOE to lease up to 200 million barrels of storage capacity. Now we think this is important because one, it will help keep the SPR in good working order, saving taxpayers money by ensuring costs for upgrades are included in the lease agreement. And successfully doing so could attract investment into approving facility operations to be responsive to commercial needs.

It will not increase the use of fossil fuels; rather it allows fossil fuels that are going to be used to be stored. And if you will, it exemplifies the original motto of the EPA. If you know that little circle of Reduce, Reuse, Recycle, we are going to reuse and recycle capacity that otherwise would not be used. The carbon footprint will be lower because energy will not be used to create new caverns; rather, we will just reuse and recycle and reduce the need for new capacity with this bill. That said, Mr. Menezes, does the Department support this bill?

Mr. MENEZES. The Department supports the goals of the bill and supports what the bill is attempting to do.

The fact—you and Chairman Barton outlaid the fact that the reason for the SPR might not be as great. It was designed for strategic reasons. We now have ample supply, if you will, for our domestic use. Although, as Senator Manchin mentioned, we do import some for reasons that you talked about.

For us to be able to now put into our own economy, if you will, our—any oil that's stored there and it can be done in a way that continues to allow the caverns to function for the purposes that they were designed, you know, we would not object to that goal.

Senator CASSIDY. Now, foreign governments have the capacity to have the ability, under current law, to lease that space.

Mr. MENEZES. That's correct.

Senator CASSIDY. Do we know of any foreign governments that are interested in doing so?

Mr. MENEZES. I'm not sure that we know that they are, but your point is a good one. So if, you know, members of OECD that have an obligation to store oil, they can use our SPR, if they wish, to lease capacity.

Senator CASSIDY. So conceptually, we are really doing it just for the commercial space which we already allow for other countries.

Mr. MENEZES. That it was designed for——

Senator CASSIDY. Which is to lease the space.

Mr. MENEZES. Correct.

Senator CASSIDY. I understand there will be technical difficulties.

Mr. MENEZES. Right.

Senator CASSIDY. And commercial space, you draw it more rapidly than you do under the current arrangements.

There have been salt dome cave-ins in Louisiana. I am concerned about this. But I gather there are also technical solutions to this issue?

Mr. MENEZES. Yeah, Sandia has been doing some modeling on it, and thank you for raising that question. We are well aware of the potential technical challenges. I mean, we use water right now to have the oil, to get it out of the caverns. We would probably need to—and then that corrodes some of the walls because of the salt domes and water. So we would need a brine solution, if you will, so you wouldn't have the interaction with the water.

Senator CASSIDY. And that technology exists because it is already done by——

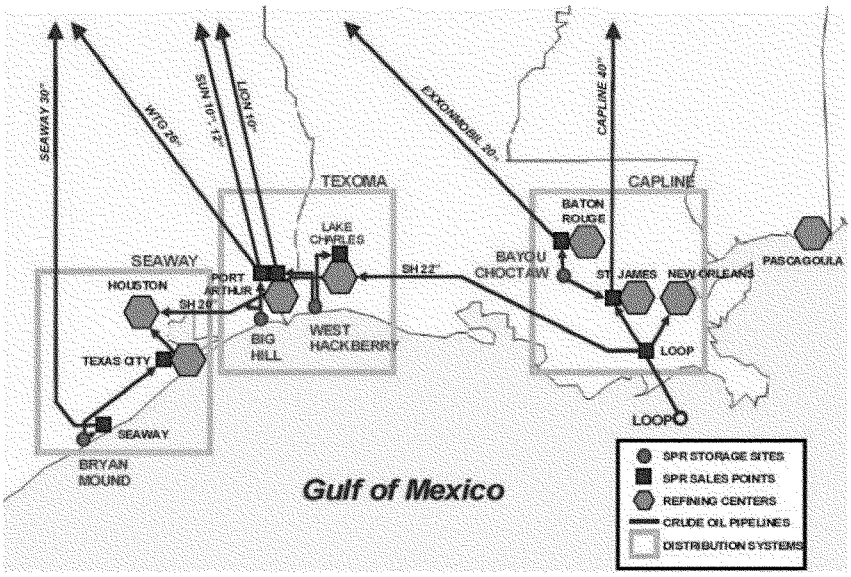
Mr. MENEZES. The technology exists. The question is, we need to modernize some of the facilities because they are, in one case, you know, aging facilities.

So we're modernizing them, then we have plans to spend about $1 billion, over $1 billion, for that.

Senator CASSIDY. Just to make the point that this SPR is already located where the refineries are——

[Senator Cassidy points at chart.]

Figure 1. Strategic Petroleum Reserve



Mr. MENEZES. Right.

Senator CASSIDY. ——that produce the refined products for the rest of the country and, indeed, parts of the world. So it is strategically located, hence the name, SPR, but also the modernization could be paid for by the revenue from this commercial lease. Correct?

Mr. MENEZES. I think that's the way that Congress has set it up.

Senator CASSIDY. That is the way the bill is written.

So we need $1 billion. We could use the revenue from the leasing to pay for this upgrade that would ensure long-term viability and environmental soundness.

I ask my colleagues for support, and I yield back.

Senator GARDNER. Thank you, Senator Cassidy.

Senator Smith.

Senator SMITH. Thank you very much, Chair Gardner and Ranking Member Manchin and also Under Secretary Menezes. Thank you so much for being here today.

I am very pleased to have the opportunity to discuss the bill that I introduced, the Advanced Grid Storage Act of 2018. I want to thank several of my colleagues on this Committee for co-sponsoring this bill, including Senators Heinrich, Hirono, Cortez Masto, Stabenow, King and Duckworth, and I look forward to talking with others of my colleagues about this bill and getting you interested in what we are doing here.

So, you know, Minnesota is blessed with excellent wind and solar energy resources and more and more of that intermittent resources are coming into our electric grid, storage is a valuable tool, though not the only tool, for smoothing over periods when the wind is not blowing or the sun is not shining.

I would note that a couple of weeks ago, I think it was, we had a very interesting discussion at this Committee around the importance of blackstarts, another example of where energy storage is so important to our country and to, actually, our security.

So what my bill would do would be to encourage research into new and promising storage technologies and it would also help states and tribes and local governments and utilities have the information that they need to most successfully utilize this energy storage.

Also, really importantly, my bill would support initial field deployments of storage technologies that perform well in the lab and this is an important step forward.

I would like to point out as my colleague, Senator Murkowski, was pointing out that this is also an issue of economic competitiveness and the United States will either lead or we will follow when it comes to new technologies around energy storage. It will be either us in the forefront or it will be China in the forefront, and I am very interested in having us be in the forefront.

So, Mr. Menezes, I want to thank you for your testimony which acknowledges, as I heard you, that my bill is consistent with the current priorities of the Department of Energy. I look forward to continuing to work with you on this bill because I think that it could help to pull together some disparate parts of what the Department of Energy is doing so that that works more efficiently, ef-

fectively, and we can get this technology—not only develop it but then deploy it out into the world.

Mr. MENEZES. Well, thank you for your comments.

You and I talked about this briefly, but the true breakthrough technology is in storage and it's just not limited to batteries——

Senator SMITH. Exactly.

Mr. MENEZES. ——although they will play a key part.

As we've talked about, storage has many different component parts of it. Your bill identifies all of those and it looks, it's visionary in that it creates the opportunity for even future ways that we can store.

We do—it's a top priority of the Department, it is dependent on resources, but currently we're spending about $300 million across the Department on all types of storage. As I had mentioned, a significant portion is on EVs but, again, if that technology can translate over into our energy system, you know, that's well.

Senator SMITH. And as you said, as you and I said when we were speaking earlier, my bill would help to, kind of, pull together many of the existing strategies so that they can work well together and make them more efficient. I think that that is an important goal and also the importance of getting this new technology dispersed out so that we can all benefit from it.

Mr. MENEZES. Right.

Senator SMITH. Yes.

Thank you. Thank you very much.

Mr. MENEZES. Thank you.

Senator SMITH. I want to also just mention, Chair Gardner, that my colleague, Senator Shaheen, is not on this Committee, but I would like to speak in support of her bill, Investing in State Energy Act. What her bill would do is to ensure timely release of DOE funds for the State Energy Programs and the Weatherization Assistance Programs. Both of these programs are so important to many of our states, including Minnesota.

I have heard some things that give me great concern from my state about delays in the release of these funds by the Department of Energy over the past two years. Senator Shaheen's legislation would require DOE to distribute these funds within 60 days of them being appropriated by Congress and that, seems to me, a really simple and commonsense formula that would prevent unnecessary delays. That is why I am supporting it, and I urge my colleagues to take a look at Senator Shaheen's bill as well.

Thank you very much.

Senator GARDNER. Thank you, Senator Smith.

Senator Portman.

Senator PORTMAN. Thank you, and I really appreciate you being here, Mr. Menezes.

We love seeing Joe Barton again, former Chairman of the Committee on the House side, my colleague, and I am glad he is still focused on the energy issues. To Senator Gardner, this is a great opportunity for us to talk about some smaller bills but also the broader strategic advantages we now have as a country and how we take advantage of that.

In Ohio, as you know, we are looking at the possibility now of expanding infrastructure more which is our key to get the Marcel-

lus find and the Utica find to really reach its full potential, both in terms of wet gas and natural gas, but also some oil in Utica.

I want to talk to you about an energy efficiency measure that we have before the Committee, and it is called S. 1089. It is legislation that I am authoring with Senator Shaheen. We have worked on a lot of energy efficiency bills over the years, as you know, in fact we are working on putting together our new version of Portman-Shaheen right now with the hopes that we can get the Administration's support and get the support of the Congress.

This is a small one, but a really important one. It has to do with what we think of as motor oil or machine oil, and it is a requirement that the Department of Energy, working with EPA and OMB, update a 2006 report on the energy and environmental benefits of re-refining used lubricating oil. It also requires DOE to provide recommendations on how to collect used oil and promote sustainable reuse. A lot has happened since 2006 in this area, and we think it is critical to update it and there are huge environmental benefits.

Lubricating oil that has been used, as you know, can be re-refined and reused, really almost indefinitely, and it is often not something that happens. This can happen because of the newer technologies we have, the processes we have, and we can upgrade that oil into higher grades over and over again.

This refining process using used oil as a feedstock is a lot more energy efficient, of course, than using crude oil as the feedstock. If you think about that, it uses a lot less energy, needs only about 20 percent of the energy, as an example, that you would need if you start with crude oil. It is not only more energy efficient, it also helps protect the environment because, again, you are using the same oil again and again. Think of the motor oil or machine oil you might have in your garage and, unfortunately, many times when people are at the point of putting new oil in their car or a lawnmower or other vehicle, they dispose of it and sometimes improperly. In fact, your 2006 report says that 350 million gallons of used oil every year is disposed of improperly.

That is really concerning because EPA has also said that 1 gallon of this 350 million gallons of used motor oil can contaminate up to 1 million gallons of fresh water. So it needs to be collected as opposed to burning it or in some instances, again, improperly disposing of it which can contaminate groundwater and drinking water.

The 2006 report also identified that refining results in less greenhouse gases and heavy metal emissions compared to burning used oil as fuel. Therefore, collecting it, obviously, has huge environmental benefits and this legislation will help identify the ways to increase the collection of that used oil and the feedstock for re-refining.

Today, the Federal Government, state governments and commercial entities all use re-refined oil in their vehicle fleets which is a good thing. And with the increase in performance in emission standards, auto manufacturers are now requiring the highest quality of base oil to be used in their vehicles. This kind of oil, which is called Group III oils, is highly efficient and helps meet vehicle performance standards and emissions.

I will say that we do lag behind other countries in terms of our re-refining of this oil. The used oil that we re-refine is a relatively small amount compared to what Europe is doing. As an example, they have about three times as much oil re-refining capacity as the United States. Only about 12 percent of our used oil is re-refined. As a result, we have had to rely on foreign sources for new, and this highly-efficient Group III, oil that is required by the auto manufacturers.

I think this creates a national security concern. Only 71 percent of the world's Group III oil—I am sorry, 71 percent of it is now coming from not the United States, but coming from either the Middle East or China or Korea.

Under Secretary Menezes, let me just ask you about it. Do you agree with me that there is a potential national security concern with such a heavy reliance on countries such as China and the Middle East for these highest quality oils which automakers are now requiring?

Mr. MENEZES. Yes, sir.

As we've talked about how the world has changed where we have become a global leader in oil and natural gas production, we also see where China has become a provider of many of the products that we typically would have been producing here.

So to the extent that we can identify ways that we can increase our domestic production of any of these types of products and get us off of the reliance of exports, it would certainly enhance our national security.

Senator PORTMAN. Well, thank you. Re-refining, of course, would do that.

Do you agree that the U.S. should be a leader in building out our own re-refining capacities?

Mr. MENEZES. Yes.

Senator PORTMAN. This 2006 report we talked about identifies a lot of challenges and opportunities but, again, it is over a decade old and this updated report will help us identify ways to use this used oil, use it more sustainably and help industry grow, create more jobs.

A final question, do you believe it is important for the Department of Energy to update this report?

Mr. MENEZES. Well, since we thought it was important back in 2005 when it went into the Energy Policy Act and the Department was fairly quick, I think, in turning around a study, but I checked and it appears that the 2006 study was, you know, the last study that the Department formed. I think that it's likely to reach some of the same conclusions, although in the discussion of the national security, I don't believe that that was a consideration in the past. So, to be sure, you know, the information is dated—it's 2006.

Senator PORTMAN. I appreciate your strong endorsement of updating it and appreciate my colleagues supporting the legislation.

Thank you.

Senator GARDNER. Thank you.

Senator King.

Senator KING. Thank you, Mr. Chairman.

Thank you for joining us this morning.

S. 3495, limits the Department of Energy's review of natural gas export, LNG export, applications to 45 days. Do you think that is realistic, that your Department can complete the review in 45 days?

Mr. MENEZES. So on the LNG export, you know, we look at it for authority to export. We are not the agency to actually have to put together the NEPA analysis on the facility itself that's being built.

On our review, we have been doing this now for several years, you know, going back to the past Administration when we put in place a mechanism to determine the economic impact on it as well as the competitive impact on it and the other issues that we look at. So we are much more now fully informed than when we began the process, you know, back in 2014.

So to that extent, on those, there are particular issues where we have done studies, we put them out for public comment and so on the issue, for example, of the impact of availability on price, on any kind of economic condition, we probably don't have to go through much of a very detailed analysis on that because we have been doing the analysis, and it's not——

Senator KING. Do you do an analysis of the impact on domestic gas prices for each of these applications?

Mr. MENEZES. We do.

On gasoline prices?

Senator KING. No, natural gas prices.

Mr. MENEZES. Natural gas.

Senator KING. We are talking about exporting natural gas.

Mr. MENEZES. Right. Yes, we do it on pricing, and we do it on availability of supply.

Senator KING. You do do an economic analysis of the effect on domestic gas prices?

Mr. MENEZES. Right. We recently completed a study and we posted the findings, I think we published them in the Federal Register in July. And my recollection is it shows that were all of the amounts that are pending to be exported of natural gas and if you assume a high demand internationally where a lot of this, of course, will go—I think the numbers run out to 2054 or so—that it will have, the impact will not be significant on pricing to where it would make that big of a difference, ultimately, on prices or availability.

Senator KING. I want to review that data.

I want to go on record as being very skeptical of that. I do not see how you can significantly increase demand, in effect, by exporting and not affect domestic prices. We cannot repeal the law of supply and demand.

Mr. MENEZES. No.

Senator KING. But——

Mr. MENEZES. I'm happy to come by and show you the report and the comments.

Senator KING. I would appreciate that. Let's follow up on that.

Mr. MENEZES. And I think, by the way, I think we're still reviewing comments on it but so——

Senator KING. But you believe that 45 days is sufficient to do the necessary analysis?

Mr. MENEZES. Well, again, I don't know if 45 days, itself, but the fact is we shouldn't be creating any unnecessary delays on things that we have great familiarity with——

Senator KING. I would agree with that, but this still is an important consideration whether this project is in the national interest that certainly involves effect on domestic prices, its effect on supply. So are you supporting this bill?

Mr. MENEZES. Sometimes what causes delays, you know, we rely on the applicants to get us information.

Senator KING. Right.

Mr. MENEZES. Right?

And so, while they may, you know, I can't say this for all cases, but it really is incumbent on the applicants. And these applicants are very sophisticated. They know what our standards are. They know what our requirements are. And so, to the extent that applicants can have the information that we can review, you know, file, if you will, timely then that, of course, allows us to do our job that much more efficiently.

The delays sometimes result in not only agency review but in communicating with the applicants to ensure that they get the information to us that we need to——

Senator KING. Well, perhaps we could follow up with a visit to go over this data and talk about this issue of analysis on effect on price.

Mr. MENEZES. Absolutely.

Senator KING. Thank you.

I just want to commend to you, S. 3656, just recently introduced by myself and Senator Ernst, that asks the Department of Energy to help us, particularly with the Veteran's Administration and the Department of Defense, in terms of big data analysis of medical personnel.

I just came from a hearing in Armed Services—the medical system in the military has 9.4 million people in it and to the extent that we can analyze that data and use it to improve health care for veterans and active duty service people, I think that would be a great benefit. I hope you will look favorably on that bill.

Mr. MENEZES. Yes, sir.

As you know, veterans' health has been a number one priority of Secretary Perry. He, himself, has volunteered to participate in some of the programs that we have ongoing. We do think that we can help address some of the unique health issues that veterans face.

With our large computing abilities, we're working very well with the Veteran's Affairs. We're relying on their expertise on this to ensure the proper use collection of data, the storage of the data, the keeping of the data and the privacy concerns addressed. So it's an exciting opportunity. Secretary Perry is particularly pleased with the progress that we have been making in working with the Veteran's Affairs.

Senator KING. Thank you. We look forward to your support of S. 3656. I appreciate it.

Thank you, sir.

Mr. MENEZES. Thank you.

Senator KING. Thank you, Mr. Chairman.

Senator GARDNER. Thank you.

Senator Duckworth.

Senator DUCKWORTH. Thank you, Mr. Chairman.

Mr. Menezes, welcome back to the Hill, your old stomping grounds.

I would like to discuss the DOE and NRC Whistleblower Protection Act.

This three sentence, good government bill may not be too long but it is very clear. It simply recognizes that under the Atomic Energy Act and a subsequent Energy Reorganization Act, the law provides employees of the Department of Energy with the same whistleblower protection rights that the law also gives to employees who work for DOE contractors and subcontractors.

Basically, we seek to define who a "person" is. It simply was not fully defined in the previous legislation.

Now, one may believe, as I do, that this will simply clarify what is already obvious, what a "person" is, that when Congress added DOE as a covered employer under a short provision in the Energy Policy Act of 2005, creatively titled, Whistleblower Protection, Congress intended to provide DOE employees with enforceable whistleblower protections. And I am not alone in this view. The Department of Labor (DOL) argued this view during administrative judicial proceedings.

In 2007, the Department of Energy even assured the Government Accountability Office (GAO) that DOE was aware of the 2005 law and would comply with it. In that same GAO report, it noted that the NRC was already complying with the law.

In fact, if you go online and open the Code of Federal Regulations today, you can download for yourself the DOL fact sheet that explains how DOE employees are protected by Section 211 of the ERA.

Mr. Chairman, I would like to request unanimous consent to enter into the record, the GAO report,——

Senator GARDNER. Without objection.

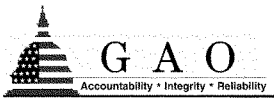
Senator DUCKWORTH. ——the CFR publication and Section 629 of the Energy Policy Act of 2005.

Senator GARDNER. Without objection for all three.

[Laughter.]

Senator DUCKWORTH. Alright, thank you, very generous.

[The information referred to follows:]



Comptroller General
of the United States

United States Government Accountability Office
Washington, DC 20548

B-309928

December 20, 2007

The Honorable John Conyers, Jr.
Chairman, Committee on the Judiciary
United States House of Representatives

The Honorable Robert C. Byrd
Chairman, Committee on Appropriations
United States Senate

Subject: *Presidential Signing Statements—Agency Implementation of Ten Provisions of Law*

This letter responds to your request that we examine how agencies have executed ten provisions of law to which the President took exception in signing statements.[1] We contacted nine agencies responsible for implementing the ten provisions to determine how the agencies were carrying out the provisions. One of the ten provisions applies to two different agencies, and two agencies were responsible for implementing two different provisions. Accordingly, we examined agency implementation in eleven instances.

We found that, in six of the eleven instances we examined, the responsible agencies—the Department of Defense (DOD), the Office of the Director of National Intelligence, the Special Inspector General for Iraq Reconstruction, the Institute of Education Sciences, and the Nuclear Regulatory Commission (NRC)—reported either that they had taken actions to implement the provisions as written or that they had experienced no interference in carrying out their responsibilities as required by law. In two instances, the provisions—to be implemented by the Department of the Interior (Interior) and the Department of Veterans Affairs (VA)—were not triggered. In the remaining three instances, we found that the Department of Energy (DOE) and

[1] For information on presidential signing statements generally and those accompanying the fiscal year 2006 appropriations acts and how the federal courts have treated signing statements in their published opinions, see B-308603, June 18, 2007.

the Federal Emergency Management Agency (FEMA) had not yet implemented the provisions for which they are responsible, although in all three instances each agency indicated that it was planning to implement the provision.

Although we found that three provisions have not yet been implemented, we cannot conclude that agency noncompliance was the result of the President's signing statements.

BACKGROUND

You asked us to examine ten provisions to which the President took exception in signing statements. These provisions are listed below, arranged by the basis on which the President objected.[2]

Related to the Fifth Amendment

The Due Process Clause of the Fifth Amendment prohibits the federal government from depriving any person of life, liberty, or property without due process of law.[3] In the signing statements, the President stated that the executive branch shall construe the provisions in the acts relating to race, ethnicity, gender, and state residency "in a manner consistent with the requirements of the Due Process Clause of the Fifth Amendment."[4] The President objected to the following provisions on this basis:

> Section 623 of the Department of Homeland Security Appropriations Act, 2007, which requires FEMA to create a graduate-level homeland security education program and to take steps to ensure diversity in the student body. Pub. L. No. 109-295, 120 Stat. 1355, 1418 (Oct. 4, 2006).
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> Section 697 of the Department of Homeland Security Appropriations Act, 2007, which requires FEMA to create a registry of contractors willing to perform debris removal, distribution of supplies, reconstruction, and other disaster or emergency relief activities. Pub. L. No. 109-295, 120 Stat. 1355, 1461 (Oct. 4, 2006).
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> Section 8048 of the Department of Defense Appropriations Act, 2007, which requires DOD contractors in Hawaii and Alaska to hire residents of those states. Pub. L. No. 109-289, 120 Stat. 1257, 1284 (Sept. 29, 2006).

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[2] Our June 18, 2007 opinion, B-308603, discussed in detail most of these bases of presidential objection or concern found in the signing statements at issue here.

[3] U.S. Const. amend. V.

[4] *See, e.g., Statement on Signing the Department of Homeland Security Appropriations Act, 2007*, 42 Weekly Comp. Pres. Doc. 1742 (Oct. 9, 2006).

> Section 1011(a) of the Intelligence Reform and Terrorism Prevention Act of 2004, which requires the Director of National Intelligence to ensure that the personnel of the intelligence community are sufficiently diverse for purposes of collection and analysis of intelligence. Pub. L. No. 108-458, 118 Stat. 3638, 3644 (Dec. 17, 2004).

Related to the Theory of the Unitary Executive

The second basis for the President's objections rests on the theory of the unitary executive. Under this theory, the President, as head of the executive branch, may control employees and officers of the executive branch without outside interference. This theory is rooted in Article II of the Constitution, which grants the President the executive power and instructs the President to "take Care that the Laws be faithfully executed."[5] The theory of the unitary executive holds that these responsibilities necessarily vest in the President the power to control executive branch employees and officers free of interference from the other government branches.[6] The President objected to the following provisions on this basis:

> Section 629 of the Energy Policy Act of 2005, which grants additional whistleblower protections to DOE and NRC employees and to NRC contractors. Pub. L. No. 109-58, 119 Stat. 594, 785 (Aug. 8, 2005).
>
> Section 186 of the Education Sciences Reform Act of 2002, which created the Institute of Education Sciences and provides for the office to carry out its mission free of interference from the Secretary of Education or any other office of the Department of Education. Pub. L. No. 107-279, 116 Stat. 1940, 1973 (Nov. 5, 2002).
>
> Section 108 of the Veterans Benefits Improvement Act of 2004, which provides that VA may conduct a 3-year pilot program of training for VA employees to become claims adjudicators. Pub. L. No. 108-454, 118 Stat. 3598, 3604 (Dec. 10, 2004).

Related to the Commander-in-Chief Power

The President's third basis of objection asserts congressional interference with his power as Commander-in-Chief.[7] The President is the head of the Armed Forces, and

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[5] U.S. Const. art. II, § 3.

[6] Letter Opinion for the General Counsel, Department of Health and Human Services, *Authority of Agency Officials to Prohibit Employees from Providing Information to Congress,* OLC Opinion, May 21, 2004, *available at* www.usdoj.gov/olc/crsmemoresponsese.htm (last visited December 12, 2007).

[7] U.S. Const. art. II, § 2, cl. 1.

these objections claim interference with this role on the part of Congress. The President objected to the following provisions on this basis.[8]

> Section 1205 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, which requires DOD to issue guidance on how DOD shall manage contractor personnel supporting deployed forces, and to submit a report to the Armed Services committees regarding the guidance. Pub. L. No. 108-375, 118 Stat. 1811, 2083 (Oct. 28, 2004).
>
> Title III of the Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, 2004, which created the Special Inspector General for Iraq Reconstruction and provides for the office to be free from interference in conducting its investigations from officials of the Coalition Provisional Authority, DOD, the Department of State or the United States Agency for International Development. Pub. L. No. 108-106, 117 Stat. 1209, 1234 (Nov. 6, 2003).

Related to the Appointments Clause

Another basis for the President's objections in his signing statements is that one provision interferes with his authority under the Constitution's Appointments Clause, which requires officers of the United States to be appointed by the President, the courts, or executive department heads.[9] In his signing statement, the President says that such provisions may not disqualify from consideration for appointment individuals best suited to fill a particular office, unless the office will perform "functions that are advisory only."[10] The President objected to the following provision on this basis:

> Section 4 of the Rio Grande Natural Area Act, which creates the Rio Grande Natural Area Commission. Pub. L. No. 109-337, 120 Stat. 1777, 1777–78 (Oct. 12, 2006).

We inquired as to how the responsible agencies were implementing these provisions in light of the President's signing statements.[11] We contacted nine agencies: DOD,

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[8] The President also objected to these provisions under the theory of the unitary executive.

[9] U.S. Const. art II, § 2, cl. 2.

[10] *Statement on Signing the Rio Grande Natural Area Act*, 42 Weekly Comp. Pres. Doc. 1815 (Oct. 16, 2006).

[11] For a complete description of the scope and methodology used for this opinion, see the scope and methodology of our first opinion on presidential signing statements, B-308603, June 18, 2007.

Interior, VA, DOE, the Office of the Director of National Intelligence, NRC, the Special Inspector General for Iraq Reconstruction, FEMA, and the Institute of Education Sciences.

RESULTS

Two provisions, to which the President objected on Commander-in-Chief and unitary executive grounds, respectively, restricted certain types of interference with the activities of the two entities: the Special Inspector General for Iraq Reconstruction and the Institute of Education Sciences. The Office of the Special Inspector General for Iraq Reconstruction reported that it has experienced no interference in the conduct of its activities from any officers of the Coalition Provisional Authority, DOD, the Department of State, or the United States Agency for International Development. Similarly, the Director of the Institute of Education Sciences stated that no Department of Education officials have sought to comment on or disapprove publication of the Institute's research.

In four instances, we found that agencies have taken actions to implement the relevant provisions. The President objected to two of these provisions on the basis of the Fifth Amendment; to one provision on the basis of the Commander-in-Chief power; and the last provision on the basis of the theory of the unitary executive. For the two provisions to which the President objected on the basis of the Fifth Amendment, we found that the Office of the Director of National Intelligence has taken steps to ensure that the personnel of the intelligence community are sufficiently diverse for purposes of the collection and analysis of intelligence. We also found that DOD has issued regulations requiring each contract awarded in Alaska and Hawaii to include a provision requiring the contractor to employ residents of those states. Regarding the provision to which the President objected on Commander-in-Chief grounds, DOD issued guidance on how DOD will manage contractor personnel supporting deployed forces. Concerning the provision to which the President objected based on the theory of the unitary executive, NRC has notified its employees of additional whistleblower protections they enjoy and has included a clause in its contracts requiring that its contractors notify their employees that the employees enjoy the same protections. While NRC has implemented the relevant provision, it did so more than 2 years after the provision was enacted.

Two provisions were not triggered. The President objected to these provisions on the basis of the Appointments Clause and the theory of the unitary executive, respectively. In the first instance, Interior has not yet appointed members to a commission, so the provisions regarding the qualifications and duties of the commission members have not yet been triggered. In the other, VA decided not to develop a pilot program, so the portion of the provision governing the reporting on the results of the pilot program and making recommendations was not triggered.

Two agencies have not implemented three provisions we examined. The first is DOE. The Energy Policy Act of 2005 extended additional whistleblower protections to DOE employees and requires that DOE post information about the new protections in DOE

facilities. Pub. L. No. 109-58, § 629. The President objected to this provision under the theory of the unitary executive. DOE has not yet posted such information for its employees. DOE's Web site and posters in DOE facilities do advise employees of their whistleblower rights under the Whistleblower Protection Act of 1989 but do not mention the additional protections now afforded DOE employees. DOE says that its Web site and posters "should be updated with references to" the new whistleblower protection provisions, but did not say when the materials would be updated.

FEMA was responsible for implementing the remaining two provisions, both of which the President objected to on Fifth Amendment grounds. One provision requires FEMA to create a graduate-level homeland security education program and to take reasonable steps to ensure diversity in the program's student body. Pub. L. No. 109-295, § 623. FEMA created the program but has not yet taken measures to ensure diversity within the program. Instead, FEMA states that it currently ensures diversity within the student body by following existing laws prohibiting discrimination. FEMA says that the Department of Homeland Security's Office of the Chief Learning Officer and the Training Leaders Council[12] are in the process of developing guidelines to support diversity.

FEMA also was required to create a registry of contractors willing to perform debris removal, distribution of supplies, reconstruction, and other disaster or emergency relief services. Pub. L. No. 109-295, § 697. The registry must include for each contractor the name, location, area served, type of services provided, and bonding level. FEMA has not created this registry. FEMA states that an existing government-wide registry already contains all of the required information except the areas served and the bonding levels of the contractors. FEMA plans to add this information to the existing registry in the future.

In this review, we did not assess the merits of the President's objections, nor did we examine the constitutionality of the provisions to which the President objected. A complete summary of our findings with regard to each of the ten provisions appears as an enclosure to this letter. We hope you find this information useful. Should you

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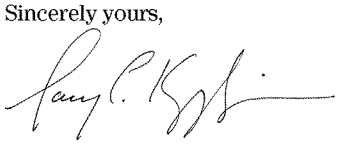
[12] The Training Leaders Council consists of senior training leaders from each of the Department of Homeland Security's components as well as representatives from several department-level headquarters staff and support organizations. GAO, *Department of Homeland Security, Strategic Management of Training Important for Successful Transformation,* GAO-05-888 (Washington, D.C.: Sept. 2005), at 15-16.

have any questions, please contact Susan A. Poling, Managing Associate General Counsel, at 202-512-2667.

Sincerely yours,



Gary L. Kepplinger
General Counsel

Enclosure

Enclosure

AGENCY ACTIONS

The following summary of agency action regarding the ten provisions we examined is arranged by category of the President's objection. Although we found that two agencies have not yet implemented provisions, we cannot conclude that agency noncompliance was the result of the President's signing statements. In this review, we did not assess the merits of the President's objections, nor did we examine the constitutionality of the provisions to which the President objected. We also have not evaluated the effectiveness of the agency actions and programs described in this summary.

PROVISIONS RELATED TO THE FIFTH AMENDMENT

Section 623 of the Department of Homeland Security Appropriations Act, 2007—Federal Emergency Management Agency

This provision instructed the Federal Emergency Management Agency (FEMA) to create a graduate-level homeland security education program. Pub. L. No. 109-295, § 623, 120 Stat. 1355, 1418 (Oct. 4, 2006). In relevant part, the provision directed the Administrator to take "reasonable steps to ensure that the student body represents racial, gender, and ethnic diversity." *Id.*

Upon signing the act, the President stated, "The executive branch shall construe provisions of the Act relating to race, ethnicity, and gender, such as section[] 623 . . . of the Act, in a manner consistent with the requirements of the Due Process Clause of the Fifth Amendment." *Statement on Signing the Department of Homeland Security Appropriations Act, 2007*, 42 Weekly Comp. Pres. Doc. 1742 (Oct. 9, 2006).

According to FEMA, the Homeland Security Academy, managed by the Department of Homeland Security (DHS) Chief Learning Officer, was established in response to section 623. According to FEMA, students for the program are currently chosen on the basis of five weighted criteria: academic credentials, a self-assessment essay, experience narratives, communication skills, and letters of recommendation. FEMA has not developed mechanisms designed to ensure diversity in the student body.

Instead, FEMA says that diversity is ensured in this program by adhering to existing prohibitions of discrimination by the federal government. As cited by FEMA, these instruct agencies to provide training without regard to race, creed, color, national origin, sex, or other factors unrelated to the need for training.[13] FEMA states that these existing prohibitions of government discrimination ensure the diversity called for by section 623. FEMA says it does not have information about the current racial, gender, or ethnic makeup of the student body.

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[13] 5 U.S.C. § 2301(b); 5 C.F.R. § 410.302(a)(1); Exec. Order No. 11,348, *Providing for the Further Training of Government Employees*, 32 Fed. Reg. 6335 (Apr. 20, 1967).

FEMA states that the DHS Training Leaders Council and the Office of the Chief Learning Officer are developing guidelines that will support racial, gender, and ethnic diversity of the student body and of the candidate selection panels. However, FEMA has not provided us with these guidelines and has not provided a date when they may become effective. Based on the foregoing, we conclude that FEMA has not yet taken "reasonable steps" to ensure diversity as required by this provision.

Section 697 of the Department of Homeland Security Appropriations Act, 2007—FEMA

Section 697 requires FEMA to create a registry of contractors willing to perform debris removal, distribution of supplies, reconstruction, and other disaster or emergency relief activities. Pub. L. No. 109-295, § 697(b)(1), 120 Stat. 1355, 1461 (Oct. 4, 2006). The provision requires that the registry include for each contractor the name, location, area served, type of good or service provided, and bonding level. *Id.* § 697(b)(2)(A)–(E). The registry is also to include whether the contractor is a small business concern, a small business concern owned and controlled by socially or economically disadvantaged individuals, a small business concern owned and controlled by women, or a small business concerned owned and controlled by service-disabled veterans. *Id.* § 697(b)(F).

Upon signing the act, the President stated, "The executive branch shall construe provisions of the Act relating to race, ethnicity, and gender, such as section[] 697 . . . of the Act, in a manner consistent with the requirement of the Due Process Clause of the Fifth Amendment to the Constitution." *Statement on Signing the Department of Homeland Security Appropriations Act, 2007*, 42 Weekly Comp. Pres. Doc. 1742 (Oct. 9, 2006).

FEMA does not yet have a registry as required by this statute. FEMA states that it intends to fulfill the requirements of this provision by working with the DHS Office of the Chief Procurement Officer and the Office of Federal Procurement Policy to modify the Central Contracting Registry (CCR), which already exists. The CCR already contains information about whether the contractors are small business concerns and whether they are owned and controlled by socially or economically disadvantaged individuals, by women, or by service-disabled veterans. According to FEMA, the CCR will satisfy the requirements of section 697 once information regarding the areas served by and bonding levels of contractors are added. FEMA says it is "working to modify" the CCR, but gave no date as to when this modification would be complete. Thus, FEMA has not yet implemented this provision.

Section 8048 of the Department of Defense Appropriations Act, 2007—Department of Defense

Section 8048 provides that each contract the Department of Defense (DOD) awards for construction or services performed "in a State . . . which is not contiguous with another State and has an unemployment rate in excess of the national average rate" shall include a provision requiring the contractor to employ, for the purpose of

performing that portion of the contract in the particular state, individuals who are residents of those states. Pub. L. No. 109-289, § 8048, 120 Stat. 1257, 1284 (Sept. 29, 2006). The Secretary of Defense may waive this requirement on a case-by-case basis in the interest of national security. *Id.*

The President said in his signing statement that the "executive branch shall construe provisions of the Act relating to race, ethnicity, gender, and *State residency*, such as [section 8048], in a manner consistent with the requirement to afford equal protection of the laws under the Due Process Clause of the Constitution's Fifth Amendment." *Statement on Signing the Department of Defense Appropriations Act,* 42 Weekly Comp. Pres. Doc. 1703 (Oct. 9, 2006) (emphasis added).

This is a recurring provision in the DOD authorization acts. It is implemented in the Defense Acquisition Regulations System (DFARS) at section 252.222-7000, which requires that each contract DOD awards in a state contemplated by section 8048 contain a clause providing that the contractor will employ individuals who are residents of the state as called for by section 8048. The regulation has been in effect since August 2000.

DOD states that the number of contracts covered by section 8048 and its predecessors likely exceeds 100,000. DOD says it has no means available to electronically search the contracts to determine whether each contains the clause called for by section 8048. DOD says a manual search of such a large volume of contracts would be impractical. DOD states that it has been unable to identify any waivers by the Secretary of Defense of the requirement of section 8048. Based on the foregoing, we conclude that DOD has implemented section 8048.

Section 1011(a) of the Intelligence Reform and Terrorism Prevention Act of 2004—Office of the Director of National Intelligence

Section 1011(a) amended the National Security Act of 1947 by striking sections 102–104 of that Act and adding numerous new provisions, including section 102A(f)(3)(A)(iv). Intelligence Reform and Terrorism Prevention Act of 2004, Pub. L. No. 108-458, 118 Stat. 3638 (Dec. 17, 2004). Section 102A(f)(3)(A)(iv) provides that the Director of National Intelligence shall "ensure that the personnel of the intelligence community are sufficiently diverse for purposes of the collection and analysis of intelligence through the recruitment and training of women, minorities, and individuals with diverse ethnic, cultural, and linguistic backgrounds."

In his signing statement for the Act, the President stated that the executive branch would "construe provisions of the Act that relate to race, ethnicity, or gender in a manner consistent with the requirement that the Federal Government afford equal protection of the laws under the Due Process Clause of the Fifth Amendment to the Constitution." *Statement on Signing the Intelligence Reform and Terrorism Prevention Act of 2004*, 40 Weekly Comp. Pres. Doc. 2993 (Dec. 27, 2004).

According to the Office of the Director of National Intelligence, it has several initiatives in place meant to ensure a sufficiently diverse workforce within the intelligence community for the purposes of collection and analysis of information. These efforts have included the "Treat Diversity as a Strategic Mission Imperative" initiative focusing on the recruitment, employment, and retention of women, minorities, and heritage community members. Part of the Director's Heritage Recruitment and Retention Strategy is a requirements-driven approach to recruiting individuals with heritage community languages or cultural, regional, or ethnic knowledge. The Office of the Director of National Intelligence also administers a scholarship program with emphasis on students from diverse backgrounds, with awardees receiving a full-time position in the intelligence community upon graduation from college. Based on the foregoing we conclude that the Office of the Director of National Intelligence has taken actions to implement this provision.

PROVISIONS RELATED TO THE THEORY OF THE UNITARY EXECUTIVE

Section 629 of the Energy Policy Act of 2005—Department of Energy and Nuclear Regulatory Commission

This provision amended section 5851 of title 42 of the United States Code to extend certain whistleblower protections to employees of the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC), as well as employees of NRC contractors and subcontractors.[14] Pub. L. No. 109-58, § 629, 119 Stat. 594, 785 (Aug. 8, 2005). Section 5851 provides that no employer covered by the statute may discharge or otherwise discriminate against an employee who notifies an employer of an alleged violation of the Atomic Energy Act of 1954 or the Energy Reorganization Act of 1974, refuses to engage in a practice made illegal by either of those acts, testifies before a federal or state proceeding regarding any provision of those acts, commences or causes to commence a proceeding for the administration of enforcement of any requirement imposed under those acts, or participates in such a proceeding. 42 U.S.C. § 5851(a)(1). Section 5851 also requires that all employers covered by the statute prominently post information about the statute in their facilities. 42 U.S.C. § 5851(i). Any employee who believes that he or she has been discriminated against in violation of the statute may file a complaint with the Department of Labor (DOL). 42 U.S.C. § 5851(b)(1). After DOL receives such a complaint, it notifies the agencies. *Id.*

In his signing statement the President said that the "executive branch shall construe [section 629], as [it] relate[s] to dissemination of official information by employees of the Department of Energy and the Nuclear Regulatory Commission, in a manner consistent with the President's constitutional authority to supervise the unitary executive branch." *Statement on Signing the Energy Policy Act of 2005,* 41 Weekly Comp. Pres. Doc. 1267 (Aug. 15, 2005).

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[14] Employees of DOE contractors were already covered by section 5851.

Although the law was enacted in August 2005, DOE says that is has not yet notified its employees that they are covered by the whistleblower protections of section 5851. DOE's Web site and posters in DOE facilities advise employees of their whistleblower rights under the Whistleblower Protection Act of 1989 but do not mention the additional protections afforded by section 5851.[15] DOE acknowledges that its Web site and posters "should be updated with references to the provisions of section [5851]," but did not state when it plans to effect such an update.

NRC told us it has notified its employees that they are covered by section 5851. However, NRC says that it did not provide its employees with this information until September 2007, more than 2 years after passage of section 629. NRC says it posted information in its facilities in January and February 2007 regarding some of the whistleblower protections enjoyed by NRC employees. According to NRC, staff responsible for these postings believed the postings informed NRC employees of their new rights under section 5851. On August 10, 2007, DOL promulgated regulations that included an example of a posting which would satisfy the statutory requirement.[16] NRC says its legal staff examined its postings in September 2007 after receiving our inquiry regarding NRC's implementation of section 629. The legal staff determined that its postings did not, in fact, inform NRC employees of their new rights under section 5851. According to NRC, it promptly revised the postings to conform to the example in DOL's regulations.

NRC also issued an internal memorandum on July 13, 2006 stating that all contracts executed by NRC must include a clause informing contractors that they are covered by section 5851, and instructing contractors to inform their employees of the protections of section 5851. This memorandum also provides for modification of existing contracts to include this clause.

According to NRC, it has not received any whistleblower complaints from DOL since passage of the Energy Policy Act. DOE reports that DOL has notified DOE of six complaints since passage of the Energy Policy Act. None of the six complaints have resulted in a finding of discrimination by DOE but DOE settled one case and two are still being appealed.

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[15] The Whistleblower Protection Act forbids retaliation by an agency against an employee who discloses information that the employee believes shows a violation of any law, rule or regulation or shows gross mismanagement, fraud, waste, or abuse. 5 U.S.C. § 2302. Individuals may file complaints under the act with the Merit Systems Protection Board or the Office of Special Counsel. 5 U.S.C. § 7701; 5 U.S.C. §§ 1211–1215. Section 5851, as discussed above, protects employees with regard to the Atomic Energy Act and Energy Reorganization Act and covers actions outside the scope of the Whistleblower Protection Act.

[16] 29 C.F.R. pt. 24, app. A; 72 Fed. Reg. 44,963 (Aug. 10, 2007).

We conclude that NRC has implemented section 629, albeit in an untimely fashion, and DOE has not implemented section 629.

Section 186 of the Education Sciences Reform Act of 2002—Institute of Education Sciences

The Education Sciences Reform Act of 2002 established the Institute of Education Sciences. Pub. L. No. 107-279, § 111, 116 Stat. 1940, 1944 (Nov. 5, 2002). The Institute's mission "is to provide national leadership in expanding fundamental knowledge and understanding of education from early childhood through post-secondary study." *Id.* To carry out this mission, the Institute compiles statistics, develops products, and conducts research and evaluation in the educational arena. *Id.*

Section 186(a) of the Education Sciences Reform Act provides the Director of the Institute the power to conduct and publish research "as needed to carry out the priorities of the Institute without the approval of the Secretary [of Education] or any other office of the Department [of Education]." Section 186(b) also requires the Institute to provide its publications in advance to the Department of Education and submit the publications to rigorous peer review.

In his signing statement, the President said:

> "The executive branch shall construe [section 186] in a manner consistent with the President's constitutional authority to supervise the unitary executive branch . . . . In addition, the Director of the Institute of Education Sciences shall implement section 186(a) of the Act subject to the supervision and direction of the Secretary of Education."

Statement on Signing Legislation to Provide for Improvement of Federal Education Research, Statistics, Evaluation, Information, and Dissemination, and for Other Purposes, 38 Weekly Comp. Pres. Doc. 1995 (Nov. 11, 2002).

According to the Director, he "has not sought the approval of the Secretary [of Education] or other officials with respect to conducting particular research projects or with respect to publishing any item." The Director has sought the Secretary of Education's approval of broad programs through the annual budget process. Nevertheless, neither the Secretary nor any other Department of Education official has sought to approve or disapprove an Institute item prior to publication, according to the Director. Nor has the Secretary or any other Department official sought to edit or change an item prior to its publication. Consistent with section 186(b), the Institute provides its publications in advance to the Department, but advance copies "are in final form and not subject to editing or revisions as a result of comments by the Secretary or other officials in the Department." Based on the foregoing, we conclude that no interference prohibited by this provision has occurred.

Enclosure

Section 108 of the Veterans Benefits Improvement Act of 2004—Department of Veterans Affairs

Section 108 provides that the Secretary of Veterans Affairs (VA) "*may* conduct" a 3-year pilot program of on-the-job training for VA employees to become qualified claims adjudicators for compensation, dependency and indemnity compensation, and pension. Pub. L. No. 108-454, § 108, 118 Stat. 3598, 3604 (Dec. 10, 2004) (emphasis added). Section 108 also required the Secretary, within 3 years of the program's establishment, to submit an initial report to Congress assessing the program's usefulness in recruiting and retaining VA personnel and the program's value as a training program. Within 18 months of submitting the initial report, the Secretary was to submit a final report to Congress, including recommendations with respect to continuation of the pilot program and expansion of the types of claims VA employees should be trained to adjudicate.

The President said in his signing statement that section 108—

> "purports to require the Secretary of Veterans Affairs to make a recommendation to the Congress on whether to continue a specified pilot project beyond its statutory expiration date, which would require enactment of legislation. . . . The executive branch shall implement [section 108] in a manner consistent with the President's constitutional authority to supervise the unitary executive branch and to recommend for the consideration of the Congress such measures as the President judges necessary and expedient."

Statement on Singing the Veterans Benefits Improvement Act of 2004, 40 Weekly Comp. Pres. Doc. 2933 (Dec. 13, 2004).

Section 108 provides the Secretary of VA with discretion to conduct the pilot program; it does not mandate the program. VA states that it has no plans to conduct the pilot program. Therefore, the provisions of this Act addressed in the accompanying signing statement were not triggered.

PROVISIONS RELATED TO THE COMMANDER-IN-CHIEF POWER

Section 1205 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005—DOD

Section 1205 requires the Secretary of Defense to issue guidance on how DOD shall manage contractor personnel who support deployed forces. Pub. L. No. 108-375, § 1205, 118 Stat. 1811, 2083 (Oct. 28, 2004). The guidance was to address 10 specific issues, as identified in section 1205(b). The Secretary of Defense also was to submit a report on the guidance to the congressional Armed Services committees.

The President noted in his signing statement that the "executive branch shall construe . . . [section 1205] . . . in a manner consistent with the President's

constitutional authority as Commander in Chief and to supervise the unitary executive branch." *Statement on Signing the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005,* 40 Weekly Comp. Pres. Doc. 2673-74 (Nov. 1, 2004).

DOD issued Instruction 3020.41 on October 3, 2005, almost a year after the in response to section 1205. Instruction 3020.41 addresses 9 of the 10 specific issues listed in section 1205(b). DOD addressed the tenth issue in Table E4.T1 of DOD Instruction 7730.64, issued on December 11, 2004. On January 23, 2006, DOD submitted a report to the congressional Armed Services committees regarding this guidance, as directed by section 1205. We conclude that DOD has implemented this provision.

Title III of the Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, 2004—Special Inspector General for Iraq Reconstruction

Title III of the Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, 2004, created an Inspector General of the Coalition Provisional Authority. Pub. L. No. 108-106, title III, 117 Stat. 1209, 1234 (Nov. 6, 2003). Section 3001(e)(2) of the Act states, "Neither the head of the Coalition Provisional Authority, any other officer of the Coalition Provisional Authority, nor any other officer of the Department of Defense, the Department of State, or the United States Agency for International Development shall prevent or prohibit the Inspector General from initiating, carrying out, or completing any audit or investigation, or from issuing any subpoena during the course of any audit or investigation."

The Presidential signing statement addressing the Act states that title III of the Act will be construed in "a manner consistent with the President's constitutional authorities to conduct the Nation's foreign affairs, to supervise the unitary executive branch, and as Commander in Chief of the Armed Forces." *Statement on Signing the Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, 2004*, 39 Weekly Comp. Pres. Doc. 1549 (Nov. 10, 2003). Specifically, the signing statement directs the Inspector General to refrain from "initiating, carrying out, or completing an audit or investigation, or from issuing a subpoena, which requires access to sensitive operation plans, intelligence matters, counterintelligence matters, ongoing criminal investigations, by other administrative units of the Department of Defense related to national security, or other matters the disclosure of which would constitute a serious threat to national security. The Secretary of Defense may make exceptions to the foregoing direction in the public interest." *Id.*

According to the Office of the Special Inspector General for Iraq Reconstruction, which is the successor to the Inspector General of the Coalition Provisional Authority, no party within the federal government has prevented or attempted to prevent the Special Inspector General from initiating, carrying out, or completing an

audit or investigation or from issuing a subpoena. The Office stated that it has not been denied access to any information on the basis that it related to "sensitive operation plans, intelligence matters, counterintelligence matters, ongoing criminal investigations by other DOD administrative units related to national security, or other matters the disclosure of which would constitute a serious threat to national security." Nor has it refrained from any investigation on the basis of the signing statement or the grounds cited therein. The Office advised us that, as an investigative agency, it has withheld actions on the request of other law enforcement agencies to avoid interference in other law enforcement agencies' investigations. Based on the foregoing, we conclude that no interference prohibited by this provision has occurred.

PROVISION RELATED TO THE APPOINTMENTS CLAUSE

Section 4 of the Rio Grande Natural Area Act—Department of the Interior

The Rio Grande Natural Area Act established the Rio Grande Natural Area (Natural Area) and the Rio Grande Natural Area Commission (Commission). Pub. L. No. 109-337, §§ 3–4, 120 Stat. 1777, 1777–78 (Oct. 12, 2006). The Commission is to advise the Secretary of the Interior (Secretary) with respect to the Natural Area and to prepare a management plan relating to nonfederal land in the Natural Area. *Id.* §§ 3(b)(2), 6(b)(2)(A). This management plan is to be submitted to the Secretary, who then may approve or disapprove of the plan. *Id.* § 6(b)(2)(B)(i). If the Secretary disapproves it, he is to notify the Commission of the reasons for disapproval and allow the Commission an opportunity to make revisions. *Id.* § 6(b)(2)(B)(ii). The Commission also has the power to call hearings, enter into cooperative agreements, and assist the Secretary in implementing the management plan. *Id.* § 5. Commission meetings are to be held quarterly, to be open to the public, and are to be announced by published notice in advance. *Id.* § 4(g). The Commission is to prepare its management plan for nonfederal lands by October 12, 2010. *Id.* § 6(a).

The Act directed the Secretary to appoint the nine Commission members, each of whom is to have certain qualifications. *Id.* § 4(c). One member is to represent the Colorado State Director of the Bureau of Land Management. *Id.* § 4(c)(1). One member is to be the manager of the Alamosa National Wildlife Refuge, *ex officio*.[17] *Id.* § 4(c)(2). Three members are to be appointed based on the recommendation of the Governor of Colorado, of whom one member would represent each of the following: the Colorado Division of Wildlife, the Colorado Division of Water Resources, and the Rio Grande Water Conservation District.[18] *Id.* § 4(c)(3). The

[17] This term means "by virtue or because of an office." *Black's Law Dictionary* 616 (8th ed. 2004). Whichever individual filling the post of manager of the Alamosa Wildlife Refuge is thus automatically a member of the commission.

[18] The Rio Grande Water Conservation District is a governmental entity created by the Colorado General Assembly to manage water resources in Colorado's San Luis Valley (. . . continued)

remaining four members are to represent the general public, be citizens of the local region of the Natural Area, and to "have knowledge and experience in the fields of interest relating to the preservation, restoration, and use of the Natural Area." *Id.* § 4(c)(4).

Upon signing this act, the President noted in his signing statement that the—

> "Act limits the qualifications of the pool of persons from whom the Secretary may select appointees to the Commission in a manner that rules out a large portion of those persons best qualified by experience and knowledge to fill the positions, which the Appointments Clause of the Constitution does not permit if the appointees exercise significant governmental authority. To faithfully execute the Act to the maximum extent consistent with the Appointments Clause, the executive branch shall construe the provisions of the Act specifying functions for the Commission as specifying functions that are advisory only."

Statement on Signing the Rio Grande Natural Area Act, 42 Weekly Comp. Pres. Doc. 1815 (Oct. 16, 2006).

According to the Department of the Interior (Interior), the Secretary has not yet appointed any of the nine members of the Commission. On September 20, 2007, the Rio Grande Water Conservation District forwarded to the Secretary the names and qualifications of six individuals for the four positions on the Commission representing the general public. The Governor of Colorado has not yet submitted any recommendations for the State of Colorado's three appointments to the Commission. Interior states that one position will be filled by an employee of the Colorado Office of the Bureau of Land Management and one position will be filled by the manager of the Alamosa National Wildlife Refuge, *ex officio*. Interior notes that the Rio Grande Water Conservation District has advised Interior that it has had difficulty finding volunteers to serve as unpaid members of the Commission. Since the Commission, as yet unformed, has had no meetings and has taken no actions, it is premature to determine whether the Commission will take on functions that are advisory only. Therefore, the provisions of this Act addressed in the accompanying signing statement have not yet been triggered.

Rio Grande Water Conservation District, *History, available at* www.rgwcd.org/Pages/History.htm (last visited Dec. 12, 2007).

Your Rights under the Energy Reorganization Act

The Energy Reorganization Act (ERA), makes it illegal to discharge or otherwise retaliate against an employee because the employee or any person acting at an employee's request engages in protected activity.

Employers covered by the ERA are:

- The Nuclear Regulatory Commission (NRC)
- A contractor or subcontractor of the NRC
- A licensee of the NRC or an agreement state, and the licensee's contractors and subcontractors
- An applicant for a license, and the applicant's contractors and subcontractors
- The Department of Energy (DOE)
- A contractor or subcontractor of the DOE under the Atomic Energy Act (AEA)

You are engaged in protected activity when you:

- Notify your employer of an alleged violation of the ERA or the AEA
- Refuse to engage in any practice made unlawful by the ERA or the AEA
- Testify before congress or at any federal or state proceeding regarding any provision or proposed provision of the ERA or the AEA
- Commence or cause to be commenced a proceeding under the ERA, or a proceeding for the administration or enforcement of any requirement imposed under the ERA
- Testify or are about to testify in any such proceeding
- Assist or participate in such a proceeding or in any other action to carry out the purposes of the ERA or the AEA

Employers may not retaliate against you for engaging in protected activity by:

- Intimidating
- Threatening
- Restraining
- Coercing
- Blacklisting
- Firing
- or in any other manner retaliating against you

Filing a complaint: You may file a complaint ***within 180 days*** of the retaliatory action. A complaint ***may be filed orally or in writing***. If you are not able to file the complaint in English, OSHA will accept the complaint in any language. The date of the postmark, facsimile transmittal, e-mail communication, telephone call, hand-delivery, delivery to a third-party commercial carrier, or in-person filing at an OSHA office will be considered the date of filing. The complaint may be filed at or sent to the nearest local office of the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, or the Office of the Assistant Secretary, OSHA, U.S. Department of Labor, Washington, D.C. 20210.

If DOL has not issued a final decision within one year of the filing of the complaint, you have the right to file the complaint in district court for *de novo* review, so long as the delay is not due to your bad faith.

For additional information: Contact OSHA (listed in telephone directories), or see the agency's web site at: www.whistleblowers.gov.

Employers are required to display this poster where employees can readily see it.

SEC. 629. WHISTLEBLOWER PROTECTION.

(a) *Definition of Employer*.--Section 211(a)(2) of the Energy Reorganization Act of 1974 (42 U.S.C. 5851(a)(2)) is amended--

(1) in subparagraph (C), by striking "and" at the end;

(2) in subparagraph (D), by striking the period at the end and inserting a semicolon; and

(3) by adding at the end the following:

"(E) a contractor or subcontractor of the Commission;

"(F) the Commission; and

"(G) the Department of Energy.".

(b) *De Novo Review*.--Subsection (b) of such section 211 is amended by adding at the end the following new paragraph:

"(4) If the Secretary has not issued a final decision within 1 year after the filing of a complaint under paragraph (1), and there is no showing that such delay is due to the bad faith of the person seeking relief under this paragraph, such person may bring an action at law or equity for de novo review in the appropriate district court of the United States, which shall have jurisdiction over such an action without regard to the amount in controversy.".

Section 632. Whistleblower protection

Section 632 expands the definition of employer under section 211(a)(2) of the Energy Reorganization Act (ERA) to include all contractor and subcontractor employees of the NRC.

Any such employees that experience an act of discrimination related to activities covered under 211(a)(1) of the ERA may file a complaint with the Secretary of Labor. This section also provides whistleblowers with the opportunity to bring the complaint directly to Federal district court if the Secretary of Labor has failed to issue a final order within 540 days from the date the complaint is filed.

Senator DUCKWORTH. I think that if we are all being honest, we will recognize that, of course, Congress meant to provide DOE employees with enforceable whistleblower protections, and that any other reading of Section 629 leads to an absurd result. That absurd result would require one to believe that Congress secretly chose not to define the term "person" in Section 629. I suppose, potentially, in the hope that many years later and many dollars spent later, DOE whistleblowers would discover during litigation that surprise, the protections Congress gave you in 2005 can never be enforced.

Does anyone really believe Congress meant that? Does anyone really think that such a ridiculous reading results in a just result for brave DOE whistleblowers? And the answer should be clear.

I hope we can move beyond the wonky discussions to focus on what really matters: DOE employees deserve the same whistleblower protections that are provided to employees of DOE contractors and subcontractors. These dedicated civil servants deserve these protections because the American people deserve a nuclear industry that operates at the safest possible levels. And coming from a state with 13 nuclear reactors, the most of any other state, this is something I am deeply concerned about.

To achieve this, DOE personnel must have confidence that they can communicate with Congress and blow the whistle on specific energy law violations without suffering retaliation or loss of a job.

Mr. Chairman, I would request unanimous consent that an endorsement letter from the Make it Safe Coalition, a whistleblower advocacy organization, be submitted into the hearing record. Their letter explains the public safety importance of DOE whistleblowers and the cost of not fixing this legal loophole now.

Senator GARDNER. Without objection.

Senator DUCKWORTH. Thank you.

[The information referred to follows:]

August 08, 2018

Senator Tammy Duckworth
United States Senate
524 Hart Senate Office Building
Washington, DC 20510

Dear Senator Duckworth:

The undersigned organizations represent the Steering Committee of the Make It Safe Coalition (MISC), a nonpartisan support coalition for whistleblowers and whistleblower advocates. We are writing to applaud your introduction of the Department of Energy and Nuclear Regulatory Commission Whistleblower Protection Act of 2018 (S.2968), and to thank you for your leadership concerning whistleblower protections for employees of these agencies.

As you know, the Energy Reorganization Act of 2005 doesn't include the Department of Energy (DoE) and Nuclear Regulatory Commission (NRC) in its definition of "person" in Section 629, interfering with the ability of whistleblowers to prevail in complaints against the agencies. This omission was likely a technical oversight, but could profoundly limit enforcement of the Act's whistleblower protections. Your legislation would fix that loophole.

Both the Department of Energy and the Nuclear Regulatory Commission play an essential role in ensuring the safety of America's sources of energy. Limiting their employees' right to blow the whistle could have catastrophic effects on not only the employees who work in often hazardous conditions, but on everyone residing in the United States.

Two case studies highlighted by the Government Accountability Project exemplify the importance of whistleblower disclosures in these agencies:

- Engineer Walt Tamosaitis blew the whistle on technical flaws at the nuclear waste treatment plant at the Department of Energy, successfully halting operations. Had Mr. Tamosaitis not disclosed the problems, America could have seen a nuclear disaster comparable to that in Fukushima, Japan.

- Engineer and Risk Analyst Larry Criscione blew the whistle after the Nuclear Regulatory Commission failed to act when he disclosed that nearly a quarter of America's nuclear power plants couldn't withstand flooding, risking plant meltdown on a massive scale should any of the surrounding dams break.

These are just two cases of many where whistleblowers' bravery prevented unspeakable tragedy. We rely on whistleblowers to reveal these issues but rely first on Congress and federal agencies to implement laws and regulations that protect safe disclosures. Thank you for acting quickly to close this loophole that could prevent whistleblowers at the DoE and NRC from coming forward with potentially catastrophic problems.

Sincerely,

Government Accountability Project
Project On Government Oversight
Public Citizen
Taxpayers Protection Alliance

Senator DUCKWORTH. Thank you, Mr. Chairman. I hope we can move swiftly to clarify this important law by passing S. 2968.

Mr. Menezes, if you have any comments on this issue, I would welcome them.

Mr. MENEZES. First of all, thank you very much for your description and the reasons why the bill is necessary. I learned an awful lot listening to it right now.

I had met with your staff earlier and asked a question, you know, why is this bill necessary? And again, she, like many here in the room, was amending provisions of the EPACT of 2005 and so Sam Fowler and I are going to get together. We talked specifically about it. We recall this provision and, indeed, it's something that we need to look at.

I want to reassure you that whistleblower protection from retaliation and the value that they bring in helping the Department oversee, if you will, and operate all of our labs, all of our contractors, the Department itself—this is a top commitment of us to ensure their protection.

If you will, let me get with Sam Fowler so that we can go through this. I talked to your staff earlier. It seems to be that the word "persons" was probably, you know, overlooked, if you will and let us get together and see if we can work things out on that. We have no opposition to the bill itself, as you know, and so I would like to get together with your staff.

Thank you very much.

Senator DUCKWORTH. Thank you.

Thank you, Mr. Chairman.

Senator GARDNER. Thank you, Senator Duckworth.

If there are no further questions, we are going to wrap this Committee hearing up. I have some questions for the record from Senator Hoeven that I will enter into the record and ask that you reply to them as soon as possible.

Questions for the record are due tomorrow by close of business. Other submissions for the record are due within 10 business days.

I would ask that you reply to Senator Hoeven's questions and any other questions that may be submitted as quickly as possible.

With the thanks of this Committee, Mr. Menezes, thank you very much——

Mr. MENEZES. Thank you.

Senator GARDNER. ——for your support, and to the members participating today, thank you.

This Committee hearing is adjourned.

[Whereupon, at 11:08 a.m. the hearing was adjourned.]

APPENDIX MATERIAL SUBMITTED

U.S SENATE COMMITTEE ON ENERGY AND NATURAL RESOUCES
SUBCOMMITEE ON ENERGY
Questions for the Record Submitted to the Honorable Under Secretary of Science Mark Menezes
Hearing: Pending Legislation
November 29, 2018

QUESTIONS FROM SENATOR JOE MANCHIN

Q1. The FUEL Act builds on a roadmap which would accelerate the development of transformational technologies that can deliver cost-effective operation, efficiency, and better environmental performance.

Do you agree that is needed?

A1. The Office of Fossil Energy is currently advancing transformative science and innovative technologies that enable the reliable, efficient, affordable, and environmentally sound use of fossil fuels, and looks forward to working with Congress to build on and achieve these critical goals.

Q2. If the FUEL Act is passed, will you commit to working with me to ensure implementation of this legislation?

A2. Should the FUEL Act be enacted, the Office of Fossil Energy will work with Congress to implement this legislation.

Q3. The U.S. is far too dependent on other nations – specifically China – for our supply of rare earth elements. This is an ongoing and increasingly concerning national security threat. Section 7 of my bill – the FUEL Act – would establish a program to further develop advanced separation technologies for the extraction and recovery of rare earth elements from coal and coal byproducts. This work is already going at the National Energy Technology Lab in Morgantown as you know. Once commercialized, these processes could be a critical means of standing up a domestic market for rare earth elements. We have included funding for R&D into the separation technologies that extract rare earth elements from coal and coal byproducts for a couple of years now. This committee also approved my bill, the Rare Earth Element Advanced Coal Technologies Act, which ensures our national labs are able to continue to work towards the commercialization of these promising advanced separation technologies. These provisions in the FUEL Act do the same thing.

Can you please comment on the status of the work at DOE and NETL regarding these advanced separation technologies?

A3. The DOE-NETL program has made considerable progress with both internal R&D efforts and external projects since 2014. The program has taken a multilateral approach of characterizing new sources, improving conventional mineral processes for these coal-

derived sources, and developing transformative ways of separating and purifying out valuable rare earth elements (REEs) and minerals.

Building on the 2017 report to Congress, DOE is conducting a detailed characterization of REE-enriched coal basins such as central Appalachia. Additional characterization work in other coal basins, especially in the western states, have proven that although REEs are present in smaller quantities, they exist embedded in a different mineral form that might be easier to extract. The University of North Dakota identified that approximately 80 to 95 percent of the REE content in lignite coals is organically associated (easier to extract) as opposed to rigid mineral forms typically found in older/higher-rank coals in Appalachia. Therefore, we must continue to perform uniform sampling across all regional sources for unbiased results to effectively inform future projects and research direction.

The characterization work into coal byproducts, such as fly ash and acid mine drainage, is also encouraging. West Virginia University achieved nearly 100 percent recovery of REEs from coal acid mine drainage (AMD) sludge. Generating a potential revenue stream while addressing legacy wastes is an innovative method of shifting the economic business case of REEs from coal and may lower the economic threshold for a viable project. Potential future projects and characterization studies would greatly benefit from expanding the scope of the program from "rare earth elements and minerals" to "rare earth elements and critical minerals" to include the Department of Interior's recently published list of 35 critical minerals. Current techno-economic analyses indicate low market prices combined with the volatility associated with the predominantly Chinese REE supply chains make project economics difficult. Expanding the scope of coal-derived projects to assess other valuable critical minerals can diversify the revenue sources and ensure we extract any potential commodities concentrated during processing.

The DOE-NETL program has also progressed in the focus area of improving mineral processing. Physical Sciences Inc. (PSI), the University of Kentucky, the University of

Wyoming, and others achieved >30 wt% (300,000 ppm) mixed REE pre-concentrates from coal-based materials. The incremental insights from the suite of these projects improve the technical feasibility of REE extraction, lower the environmental impacts of tested processes, and optimize project economics. These are necessary steps for the fully integrated REE program to support a successful commercial domestic industry and help establish consumers and manufacturers down the lifecycle chain. The transformative technology focus area has yielded accomplishments as well. NETL developed fiber optic sensor development for detection at the parts per million (ppm) levels of REEs in liquid samples and recovered REEs from liquid sources using novel amine and organo-clay sorbents.

In addition, the expertise gained through this program enabled the Office of Fossil Energy to provide an unconventional perspective during the development of the Federal strategic response to EO13817 to mitigate U.S. dependency on foreign critical minerals. DOE consistently promotes holistic life chain solutions for dependency issues including diversifying new domestic resources like coal byproducts, building domestic recycling capabilities, and on-shoring refining and manufacturing.

Q4. Is there anything else that Congress can be doing to support these efforts?

A4. Codifying regulatory certainty under the New Source Review (NSR) program would reduce project costs by reducing the amount of time to develop these projects and mitigate against uneven enforcement and threat of litigation. This certainly would provide more incentive for both the private and public sector to participate.

Q5. I was excited to reintroduce the All-of-the-Above Federal Building Conservation Act of 2018 with Senator Hoeven. This bill repeals an out of date provision – Section 433 of the Energy Security and Independence Act – which would have phased out and banned the use of fossil fuels in federal buildings. That ban is nearly impossible to implement. For example, DOE – in its proposed rule – admitted that you cannot simultaneously use energy efficient technologies like combined heat and power (CHP) for a building while also complying with a mandate that no fossil fuel generated energy be utilized in that building. That's one of many reasons why our bill repeals this provision. It replaces it

with provisions that strengthen existing energy efficiency laws for federal buildings and provide federal building managers with more flexibility to reduce energy usage.

Can you confirm that the Department of Energy has never issued a final regulation implementing the fossil fuel ban in Section 433 and if not, why not?

A5. The Department of Energy (DOE) confirms that it has not issued a final rule implementing the fossil fuel-generated reduction requirements for new Federal buildings and major renovations to Federal buildings in section 433 of the Energy Independence and Security Act of 2007 (42 U.S.C. § 6834(a)(3)(D)(i)(I)-(II))[1] 10 CFR Parts 433 and 435, Fossil Fuel-Generated Energy Consumption Reduction for New Federal Buildings and Major Renovations of Federal Buildings.

The Energy Conservation and Production Act (ECPA), as amended by the Energy Independence and Security Act (EISA) of 2007(42 U.S.C. § 6834(a)(3)(D)(i)(I)-(II)), requires DOE to establish revised performance building design standards to reduce fossil fuel consumption in the design of those new Federal buildings and Federal buildings undergoing major renovations to which the Administrator of General Services is required to transmit a prospectus to Congress under section 3307 of title 40, in the case of public buildings (as defined in section 3301 of title 40), or for those projects of at least $2,500,000 in costs adjusted annually for inflation for other buildings.

On October 15, 2010, DOE issued a Notice of Proposed Rulemaking[2] (NOPR) to establish regulations implementing updated efficiency requirements of the ECPA building design standards for Federal buildings to reduce the need of fossil fuel-generated energy. In response to the NOPR, DOE received comments expressing concern encouraging DOE to re-examine the proposed regulations. From those comments, DOE identified additional areas for clarification and consideration that would benefit from further public comment. As such, on October 14, 2014, DOE issued a Supplemental

[1] 42 USC 6834: Federal building energy efficiency standards
[2] https://www.regulations.gov/document?D=EERE-2010-BT-STD-0031-0001

Notice of Proposed Rulemaking[3] (2014 SNOPR). In response to the 2014 SNOPR, DOE again received a number of comments expressing concern and encouraging DOE to re-examine the proposed regulations.

Q6. Does the Department have near term plans to do so?

A6. The Department of Energy is striving to meet its legal obligations to issue regulations.

[3] https://www.regulations.gov/document?D=EERE-2010-BT-STD-0031-0034

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QUESTIONS FROM SENATOR MARTIN HEINRICH

Q1. As you know, URENCO USA's plant in Eunice, New Mexico, is the nation's only operating uranium enrichment facility for commercial nuclear power plants. While the plant currently delivers material at a maximum enrichment of 5% U235, its advanced gas centrifuge design is currently capable of producing at the full span of high-assay enrichments up to 20% without further development or testing. Only an amended NRC license would be required to support a new enrichment module for high assay enrichment. Within, URENCO indicates it could construct, commission and start-up such a module in about 24 months

Do you agree URENCO USA is a viable option to provide near-term domestic enrichment services for future advanced reactor designs, including enrichment levels up to 20%? Is it DOE's policy that our country's private sector should have priority for enrichment services for the commercial nuclear power industry?

A1. Melissa C. Mann, President of URENCO USA, Inc., testified before the U.S. House Committee on Energy and Commerce Subcommittee on Energy on May 22, 2018 that "if detailed design, site, permitting and contractor selection were undertaken during the NRC review process, we could construct, commission and start-up such a module within 24 months of NRC licensing." Based on her statement, we would agree that URENCO USA could be a viable option to provide enrichment services up to 20% U-235 for commercial nuclear power.

Q2. Installation of rooftop solar for homes and businesses is a fast growing industry. In New Mexico there are over 30 solar installers and developers, and many of these solar companies are small businesses. One of the industry's largest remaining hurdles is the inconsistent permitting process across each of the states and local communities. According to industry, permitting a project can add as much as $1 per watt to the installation cost. Do you see a role for DOE and the national labs in helping industry and local governments streamline and standardize the basic permitting process for rooftop solar?

A2. The Department of Energy's SolSmart program (http://www.solsmart.org) is a technical-assistance program enhancing designation of local governments. Through this program, local governments are eligible to receive no-cost technical assistance from a team of 20 national experts, made up of members of industry, non-profits, local governments along with National Renewable Energy Laboratory researchers (examples of the advisors can

be found here: https://www.solsmart.org/how-we-help/advisor-profiles), to evaluate existing processes and help apply industry-leading best practices to streamline rooftop solar permitting processes. There are 103 solar companies in New Mexico employing nearly 3,000 people. At present, the cities of Albuquerque, Las Cruces, Roswell and Santa Fe are working with SolSmart to complete the designation process.

The DOE Solar Energy Technologies Office's Balance of Systems Soft Cost Reduction program convenes stakeholders, provides analytical support to relevant actors (in the case of SolSmart support is provided to local governments), and conducts training to address challenges associated with non-hardware costs of solar, which include those associated with the standardization of planning, permitting, and installation tools and methodologies.

Q3. The Western Area Power Administration's TIP program is a powerful tool to support, develop and upgrade our electrical transmission system. The borrowing authority Congress entrusted to WAPA encourages private investment in electrical infrastructure and provide benefits to electrical power customers. The TIP is vital to getting remote wind resources to markets throughout the west. What is the Department's current thinking regarding how TIP fits into its priorities?

A3. To further achieve fiscal discipline and reduce taxpayer risk, the Administration proposes to repeal the Western Area Power Administration's borrowing authority administered by the TIP program, which finances the construction of electricity transmission projects. Investments in transmission assets are best carried out by the private sector where there are appropriate market and regulatory incentives. The vast majority of the Nation's electricity needs are met through for-profit investor-owned utilities. Federal financing of transmission assets places unnecessary risk on taxpayers and results in an inefficient allocation of economic resources.

Q4. As wind and solar power supply more and more of our electric power, seasonal swings in production become a bigger obstacle to widespread deployment. A low- or no-carbon electricity system of the future will need a way to dispatch clean energy on demand, even when renewable sources aren't producing at their peaks. Current energy storage systems with a few hours of battery power can help on a given day, but cost-effective energy

storage for weeks or months has yet to arrive at scale (other than pumped-hydro storage). By making renewable energy fully dispatchable throughout the year, solar and wind could reliably replace many of the mid-range and baseload power plants that currently burn fossil fuels to supply the grid.

What are your thoughts on the prospects and future role of long-term or seasonal energy storage and what research and development work does the department plan in this area?

A4. As more and more variable solar and wind are put onto the grid, the Department is working to facilitate that transition by developing more holistic approaches to energy storage that provide alternative solutions in addition to seasonal storage. For instance, the Department's Office of Electricity (OE) is pursuing the advancement of megawatt-scale storage capable of supporting bulk and distribution power systems. In conjunction with fellow DOE offices and our national laboratories, OE is investigating and integrating latest technologies to develop a strategic approach to rapidly develop megawatt-scale storage, which provides added resilience and control capabilities.

On September 18, 2018, the Department announced the selection of 10 projects as part of a new Advanced Research Projects Agency-Energy program, Duration Addition to electricitY Storage (DAYS). DAYS project teams will develop innovative storage systems that can provide reliable, affordable power to the electric grid for durations of up to 100 hours—opening new opportunities for long-lasting backup power and greater integration of intermittent, renewable energy sources. DAYS awardees aim to understand what tomorrow's grid-scale storage could be, and work to develop the technologies that get us there.

Finally, the Department's Office of Energy Efficiency and Renewable Energy (EERE), in consultation with OE through the Grid Modernization Initiative, has initiated a new $90 million activity called "Beyond Batteries." This effort integrates more dispatchable generation, controllable loads and energy storage so that the grid is more flexible and can balance supply and demand at all times, even with high renewable penetration. We anticipate that the energy storage component using this approach would not need to be as

large as traditional "seasonal" storage if other generation is readily dispatchable and loads can be controlled upward or downward.

EERE also supports continued innovation in pumped storage hydropower, with a particular focus on closed-loop configurations (i.e., those that do not need an ongoing connection to natural water bodies). These configurations include designs that dramatically reduce capital costs and deployment timeframes or allow faster and more flexible response to grid requirements and variable renewable generation.

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QUESTIONS FROM SENATOR JOHN HOEVEN

Q1. Ranking Member Manchin and I introduced the All-of-the-Above Federal Building Energy Conservation Act with the goal of strengthening existing federal energy efficiency policies. This legislation does so by repealing the fossil-fuel generated energy ban in Section 433 of the Energy Independence and Security Act of 2007 (EISA) and ensuring stronger federal efficiency policy standards with its replacement. Will you speak to how this legislation could decrease the amount of U.S. energy consumed by our federal buildings?

A1 Given its complexity, the Department continues to review this bill. In general, expanding support for Federal agencies to continue to focus on energy efficiency and implementing energy efficiency conservation measures can decrease the amount of energy consumed in federal buildings.

In 2017, the Federal Government used 915 trillion Btu of site-delivered energy at a cost of $15.6 billion[4]. Energy used in federal buildings and facilities represents about 38 percent of the total energy use of the Federal Government, with vehicles and equipment energy use accounting for the other 62 percent. However, potential opportunities still exist for further energy cost reduction and energy conservation. In their annual reported findings from comprehensive evaluations conducted under Section 432 of the Energy Independence and Security Act of 2007 (EISA 432) (42 U.S.C. 8253(f)), Federal agencies have identified almost $9 billion in potential investment in cost-effective efficiency and conservation measures (ECMs)5.

Q2. The Energy Information Administration estimates that commercial and residential buildings account for 38 percent of all energy used in this country in 2017 with the Federal Government being the largest single consumer in the U.S. This is something we ought to address with the deployment of numerous efficiency technologies available to us. Why is there a backlog of energy efficiency technologies and programs that have yet to be utilized?

[4] Table A-4 and Table A-2 http://ctsedwweb.ee.doe.gov/Annual/Report/Report.aspx.
[5] https://ctsedwweb.ee.doe.gov/CTSDataAnalysis/Reports/PublicAgencyReport_ComprehensiveEvaluationFindings.aspx

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A2. During fiscal year (FY) 2018, 10 federal agencies made a record investment of more than $800 million using the DOE IDIQ ESPC to pursue 23 energy efficiency and water conservation projects. Fiscal year 2018 was a record year for the Federal government deploying successful projects that integrated a wide range of energy conservation measures covering combined heat and power, microgrids, and battery storage; including replacing aged equipment with highly efficient equipment. These projects are expected to achieve more than 2.3 trillion Btu in annual energy savings, equivalent to the annual energy use of 25,000 average US households.

The DOE Federal Energy Management Program (FEMP) plays an important role in educating agencies about the use of performance contracting that use upfront private sector funding to make these types of investments. FEMP offers development services for performance contracts—including energy savings performance contracts (ESPCs) and utility energy service contracts (UESCs)—to help agencies leverage their funds to implement more comprehensive energy and water efficiency projects. FEMP is well positioned to continue to work with all federal agencies to optimize Federal energy and environmental performance, reduce waste, and cut costs.

Since FEMP's inception of the DOE IDIQ ESPC in 1998, more than 400 projects have been awarded. About $6 billion has been invested in federal energy efficiency and renewable energy improvements. These improvements have resulted in about 550 trillion Btu in life cycle energy savings and more than $13.7 billion in cumulative energy cost savings for the federal government.

Q3. Further, are there provisions in the Energy Independence and Security Act of 2007 (EISA) that have precluded the implementation of these efficiency programs? How have those policies hampered innovation and improvements in efficiency?

A3. Federal agencies have a number of programs, resources, and tools available to them to assist in advancing and implementing energy efficiency across their portfolio. The Federal Energy Management Program (FEMP) works with its stakeholders to enable

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Federal agencies to meet their energy efficiency related goals by identifying affordable solutions, facilitating public-private partnerships, and providing an array of resources and best practices. FEMP provides agencies with information and resources to help them develop strategic programs and plans to successfully reduce federal energy and water use. These resources include energy modeling and design software, building lifecycle costs (BLCC) programs, energy escalation rate calculators (EERC), cost effectiveness planning and auditing tools, covered product energy and cost-savings calculators, rainwater and alternative water sources maps, awarded ESPC project level data sets, low standby power product list, project case study and training course databases and many other tools and resources created by the U.S. Department of Energy and other federal organizations.

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QUESTIONS FROM SENATOR TINA SMITH

Q1. Foundations at the National Institutes of Health, the Centers for Disease Control, and the U.S. Department of Agriculture have all demonstrated that they can raise tens of millions of private sector dollars towards cutting-edge research and innovation. The legislation from my colleagues Senator Coons and Graham (S. 2257, IMPACT for Energy Act) would establish a similar foundation for the Department. Have you looked at these successful models for innovating and their potential benefit for the energy research and development mission?

A1. The Department of Energy is committed to spurring discovery and innovation at our National Labs, and ensuring that the United Statesretains its preeminent place in scientific research and technology commercialization in an increasingly competitive world. DOE recognizes the need for an increased role for the private sector to fund later-stage research, development, and commercialization of energy technologies by fostering collaboration between National Labs, universities and companies, and the need for innovative funding models to accelerate and ease technology development and commercialization of cutting edge research and innovation.

Over the last two years, DOE has considered the use of foundations by other Departments and laboratories, including the foundation at the National Institutes of Health. Additionally, individual laboratories have also considered these models.

Testimony of Mr. Phillip Retallick
Senior Vice President for Regulatory Affairs, Clean Harbors Inc.
Submitted for the Record
In support of S. 1089/H.R. 1733
Committee on Energy and Natural Resources
November 29, 2018
10:00 a.m.

I am Phil Retallick, Senior Vice President of Regulatory Affairs for Clean Harbors, Inc., which is the largest environmental services company in the United States and the parent of several subsidiary companies which currently operate a total of five used oil refineries in the Unites States and Canada. I am also speaking on behalf of the leadership of Vertex Energy of Houston, Texas and Avista Oil in Peachtree, Georgia. Together these companies and subsidiaries collect and re-refine close to 275 million gallons per year into high quality lubricating products used to meet manufactures specifications in all types of automobiles and trucks and heavy machinery.

We are providing testimony today in support of bipartisan legislation introduced by Senators Rob Portman (R-OH) and Jean Shaheen (D-NH) calling for a restudy of the energy conservation benefits of increasing collection and reuse of high quality lubricants using recycled motor oil as a feedstock and the development and expansion of federal policies to encourage greater reuse of this valuable energy resource.

Re-refining used lubricating oil generates significant energy and environmental benefits and has been deemed by federal agencies and national research laboratories as the highest and best use of this valuable commodity.[1] Re-refined oil meets American Petroleum Institute performance classifications, has been deemed suitable for use by major manufacturers of gas and diesel engines, and is used successfully by government, commercial and local transit fleets, among others.[2] In addition, re-refined oil is price competitive and widely available in the U.S., particularly for large fleets. The practice helps generate good paying domestic jobs in the collection and transport of used oil and the manufacture of re-fined base oils.

The federal government has led the way in the recycling of used oil and purchase of re-refined oil.[3] Federal customers include the Department of Defense, United States Postal Service, and National Park Service, among many others. Environmental Protection Agency guidelines recommend federal agencies procure lubricants containing at least 25 percent re-refined oil if it meets agency specifications and is available in the marketplace at a competitive cost. Additional support for such policies can be found in Executive Orders issued by Republican and Democratic administrations.[4]

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[1] Lawrence Livermore National Laboratory report "Improving Used Oil Recycling in California" (2008) p. 1; Department of Energy report "Used Oil Re- refining Study to Address Energy Policy Act of 2005 Section 1838" (2006) p. 15.

[2] DLA Program Manual

[3] Used Oil Recycling Act of 1980; Resource Conservation and Recovery Act, Sec. 6002

[4] EO 13423; EO 13514

American cars, trucks, and machinery require top quality lubricants which are typically the most highly refined products made from crude oil. Starting this year, vehicle manufactures require higher quality lubricants (Group III) than the Group II lubricants than were required previously to meet warranty specifications. The U.S. has relied primarily on imports of Group III oils to meet domestic demand. Commercial estimates are that over 71 percent of all Group III oils come from just three areas, the Middle East, South Korea and China, with substantial production also in Singapore, Malaysia and Indonesia. However, there is a growing group of domestic innovators who are working to promote domestic production of Group III lubricants manufactured using recycled motor oil.

It only takes one gallon of recycled used oil to manufacture the same amount of lubricants that would require a full barrel (42 gallons) of crude oil to produce because most of the barrel of crude oil is unsuitable for manufacturing high quality lubricants. Re-refiners, on the other hand, are using previously refined lubricants as the feedstock for their finished products and can manufacture high quality lubricants using much smaller quantities of used oil as feedstock. Recycling in this way saves a great deal of energy and significantly reduces emissions associated with refining crude oil.

Contrary to what many assume, used oil makes an ideal feedstock for high quality lubricants because it is higher quality than crude oil and new re-refining techniques can achieve higher levels of purity to meet demanding engine specifications. Furthermore, as the country moves toward greater use of Group III oils, this feedstock will continue to improve in quality allowing re-refiners to make increasingly more of this highest quality lubricating oil. Despite the unambiguous benefits of re-refining used oil, the United States lags well behind other developed nations in the amount of used oil that is re-refined and is importing over 90 percent of the top-quality Group III lubricants needed to meet new car warranties. Further, this industry provides for a network of collection agents providing good paying jobs in all parts of the country as well as the personnel required to operate our refineries.

S. 1083 aims to save energy and protect the environment in connection with how we use and reuse lubricating oil. Specifically, the bill would update a 2006 joint Department of Energy and Environmental Protection Agency study of the energy and sustainability benefits of recycling used oil, as well as requiring the agencies to develop a set of policy options that improve sustainability practices with respect to this valuable resource. The study would require coordination with industry and other stakeholders and would be completed within one year. The bill is identical to a bipartisan House bill (H.R. 1733) which passed the House with no opposition in December of last year.

We respectfully ask that you act yet this year to favorably report out the House or Senate bill and allow it to be taken up by the full Senate. Favorable action on this bill would be a positive step towards energy independence, a cleaner environment, and good paying jobs back home.

S. 3495, THE "LNG PERMITTING CERTAINTY AND TRANSPARENCY ACT"

COMMENTS FOR THE RECORD
OF THE
INDUSTRIAL ENERGY CONSUMERS OF AMERICA

BEFORE THE
SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

NOVEMBER 29, 2018

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SUMMARY

IECA opposes S. 3495, the "LNG Permitting Certainty and Transparency Act."

a. **S. 3495 is not needed.**

DOE has never delayed or declined to approve an application to export LNG to a NFTA country.

b. **DOE has already approved LNG export volumes to NFTA countries equal to 30 percent of U.S. demand for periods of 20-30 years, substantially increasing consumer and economy-wide risks.**

DOE has already given final approval to export volumes to NFTA countries of 21.35 Bcf/day, an equivalent of about 30 percent of 2017 U.S. demand. Volumes of this magnitude cannot possibly be in the public interest as required by the Natural Gas Act (NGA).

DOE should not approve volumes that could connect the U.S. low price of natural gas to international markets, including the global high $12.00 MMBtu Asian global LNG trade price. If that happens, domestic consumers will no longer benefit from our natural gas resources. This is not a hypothetical scenario: It happened in Australia. Australian consumers are suffering the consequences of excessive LNG exports by paying the Asian LNG net back price despite Australia's abundant supplies.

c. **In considering approvals of LNG export applications, DOE has not considered whether there is adequate pipeline capacity at peak demand.**

Today's existing U.S. demand and exports have consumed essentially all of the pipeline capacity. As a result, today, manufacturers are paying regional pipeline transportation rates that are three to four times higher than normal. At peak demand, insufficient pipeline capacity threatens natural gas power generation reliability.

<u>DOE should not approve, nor let existing approved LNG export applications move forward, without conducting a national study to determine if the U.S. has the pipeline capacity to deliver at peak demand today and when the new LNG export terminals become operational in the coming months</u>.

d. **Judicial Review: IECA supports this section because it gives consumers like IECA the ability to legally challenge DOE's approval of an LNG application.**

COMMENTS

1. **If the DOE approves excessive volumes of LNG exports, manufacturers could lose competitive advantage and trillions of dollars of manufacturing assets would be put at risk.**

The manufacturing sector accounts for 12.6 million high-paying jobs. According to the U.S. Bureau of Labor Statistics (BLS) the entire oil and gas industry employs only 374,000 jobs. And, LNG export terminals, once constructed, employ only hundreds of people. You could double the number of wells drilled and employment does not go up measurably. But if natural gas prices rise, it could threaten millions of good-paying manufacturing jobs.

Giving our global competitors, especially state owned enterprises (SOEs), too much access to U.S. low cost natural gas is a failed public policy. It is on the basis of low-cost natural gas that the manufacturing sector is growing again. Low cost energy becomes even more important as wages rise. Rising wage costs was highlighted by a recent corporate announcement as justification for plant closures. When wages increase, low cost energy becomes even more critical in our ability to compete.

2. **The Natural Gas Act (NGA) requires that shipments to NFTA countries must not be inconsistent with the public interest. A U.S. Government Accountability Office (GAO) report[1] makes clear that neither Congress nor the DOE has ever defined the "public interest." DOE is using guidelines developed in 1984 for LNG imports to inform LNG export public interest decisions.**

Page 11 of the GAO report states:

> In passing the NGA, Congress did not define "public interest;" however, in 1984, the DOE developed policy guidelines establishing criteria that the agency uses to evaluate applications for natural gas imports. The guidelines stipulate that, among other things, the market, not the government, should determine the price and other contract terms of imported natural gas. In 1999, DOE began applying these guidelines to natural gas exports.

In 1984, LNG imports were needed and they reduced risks for domestic consumers and manufacturers. Imports of LNG were in the public interest. LNG exports increase risk and especially market-determined LNG export levels by increasing consumer prices and reliability risks. Therefore, criteria used for decision-making in 1984 on LNG imports are inconsistent with what Congress had intended under the NGA, and should not be used to inform decision-making on LNG exports.

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[1] "Federal Approval Process for Liquefied Natural Gas Exports," U.S. Government Accountability Office (GAO), September 2014.

There is an explicit intent of Congress, in their asserting the requirement that LNG exports to NFTA countries must not be inconsistent with the public interest. And importantly, one can only assume they were referring to cumulative LNG export volumes because incremental volumes are too small to measure impacts to the domestic price of natural gas. This is a reasonable assumption. When Congress passed the NGA and included the above-mentioned public interest provision, there is no mention of markets as a predicate for determining levels of exports.

The U.S. Supreme Court has stated that "in order to give content and meaning to the words 'public interest' as used in the Federal Power and Natural Gas Acts, it is necessary to look to the purposes for which the Acts were adopted. In the case of the Power and Gas Acts it is clear that the principal purpose of those Acts was to encourage the orderly development of plentiful supplies of electricity and natural gas at reasonable prices."[2] Furthermore, the Court also stated that the "primary aim" of the NGA is "to protect consumers against exploitation at the hands of natural gas companies."[3] Excessive LNG exports exploit U.S. consumers when low domestic prices rise due to high global LNG demand and thus violate the instruction of the U.S. Supreme Court.

To this point, the DOE report entitled "Microeconomic Impacts of LNG Exports from the United States" illustrates how natural gas companies exploit U.S. consumers by exporting LNG. You will note from Figure 1 below that the only entities that benefit from LNG exports are producers and exporters of natural gas. Everyone else is negatively impacted. The public loses. Natural gas costs increase, wages decrease, capital investment decreases, especially in manufacturing, and there is a reduction in indirect economic income.

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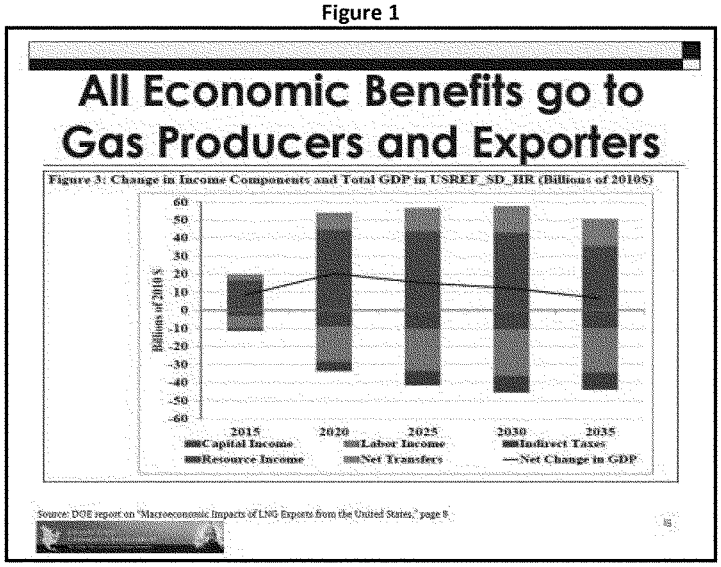
[2] NAACP v. Fed. Power Comm'n, 425 U.S. 662, 669-70 (1976).
[3] FPC v. Hope Gas Co., 320 U. S. 591, 610 (1944).

Figure 1



U.S. consumers are benefiting by a U.S. natural gas market whereby domestic demand versus domestic supply is resulting is low relative natural gas prices. U.S. consumers are benefiting from our vast natural gas resources.

Why markets cannot and should not be used to justify levels of specific LNG export applications volumes like this one or cumulative volumes of LNG exports is illustrated today with U.S. crude oil and gasoline prices. Because the U.S. crude oil price is connected to the global market, U.S. gasoline prices are at the highest levels in over four years. Global demand from other countries are dictating demand and price versus the U.S. supply and demand. The net result is that the U.S. consumer is NOT benefiting from our vast crude oil resources. This can and will happen to natural gas if our low natural gas prices are connected to the high price of global LNG markets. It is it for this reason that connecting the low U.S. price of natural gas to the high global market price is NOT in the public interest.

What happened to Australia is a recent and sobering example that using markets to determine levels of LNG exports is not in the public interest. Australia has vast natural gas resources. Historically the consumer prices have been around $3.00 MMBtu. Now, because of LNG exports, the Australian consumer pays the Asian LNG net back price. This means that the Australian consumer pays the high Asian LNG price less transportation and liquefaction costs, which has resulted in Australian domestic consumer prices at $8, $9 and $10 MMBtu.

In fact, the Australian Competition and Consumer Commission started publication of LNG netback prices in order to boost price transparency.[4] The story highlights that the Australian consumer net back prices have increased from 7.27 Gj in 2017 to 10.69 Gj YTD 2018, a 47 percent increase. In approving LNG export terminals, the Australian government let markets determine the volume of exports. A disastrous impact to their consumers and manufacturing sector as jobs continue to decrease.

The DOE study entitled, "Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports"[5] illustrates that LNG exports would substantially increase U.S. natural prices. Page 54 of the reports states that "for all the reference supply scenarios in the more likely range, natural gas prices could be from $5.00 to $6.50 per MMBtu in 2040. These mid-range scenarios have a combined probability of 47%." This is the highest probability the study gave any scenario. Since today's Henry Hub price is roughly $3.00 MMBtu, the study confirms that natural gas prices could more than double causing domestic natural gas prices to rise to a level which would harm energy-dependent manufacturers and every homeowner. Consumers do not have an alternative. This is clearly not in the public interest.

There is all pain and no gain for consumers. The DOE report confirms that market determined U.S. LNG exports will connect U.S. prices to higher global LNG prices. The DOE report says that LNG exports will reduce the price that Asian countries pay and increase U.S. prices and eventually our prices will reach parity with Asia. At that point, the U.S. will have lost its competitive advantage. The report is explicit in highlighting the economic damage to especially manufacturing companies who are large users of natural gas. Importantly, manufacturers will have lost their competitive advantage, with very serious long-term implications for a viable manufacturing sector, jobs, and investment.

IECA urges the DOE to conduct a rulemaking to define the public interest for LNG exports to NFTA countries before giving consideration to this and future application to export. The DOE should not give final approval to any LNG export application without having established the definition and evaluated the cumulative impact to the public interest. LNG volumes that connect low U.S. natural gas prices to high global LNG prices long term cannot possibly be in the public interest.

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[4] Australian Competition and Consumer Commission started publication of LNG netback prices in order to boost transparency. October, 2018. LNG World News https://www.lngworldnews.com/australian-watchdog-starts-lng-netback-price-publication/?utm_source=emark&utm_medium=email&utm_campaign=daily-update-lng-world-news-2018-10-05&uid=55872

[5] "Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Export," U.S. Department of Energy (DOE), June 7, 2018, https://www.energy.gov/sites/prod/files/2018/06/f52/Macroeconomic%20LNG%20Export%20Study%2020018.pdf.

3. Violation of the Data Quality Act

DOE economic evaluations of LNG export public interest considerations must not violate the Data Quality Act (DQA). Other than the first EIA report, all DOE LNG export studies have used proprietary economic modeling whose results cannot be duplicated by others, a violation of the DQA (see appendix).

4. DOE has not addressed vital short- and long-term risks to consumers and the economy that are core issues in considering whether an LNG export application is consistent with the public interest.

a. DOE failed to consider pipeline and storage capacity risk constraints (and at peak demand), and their cost and reliability impact.

DOE failed to consider existing and future limitations in natural gas pipeline and storage infrastructure capacity and maximum deliverability capacity needed to supply the U.S. market at peak demand and export LNG. All DOE reports assume that pipeline and storage capacity will be adequate despite the fact that constraints already exist and the ability to build-out new capacity is threatened by multiple legal and public opposition headwinds.

The Henry Hub basis differential is an example. There are at least five pipelines with about 9 Bcf/day of capacity moving gas from Marcellus toward the Gulf, but only 2 Bcf/day has pipeline capacity to actually get the gas to LNG export terminals in Louisiana and Texas. This means that when a Gulf coast LNG export terminal starts up, the demand will drive up the HH basis price for consumers in the region. A direct cause and effect.

Today, gas marketers and industrial companies have difficulty securing capacity on pipelines because gas producers have locked in firm capacity and there is no excess capacity for manufacturing companies. We cannot grow our facilities without increased pipeline capacity.

The cost impacts of natural gas pipeline and storage peak demand limits are stunning as we saw from January 1 to January 8, 2018. Winter demand prompted severe gas and electricity price spikes in PJM at an estimated cost of $10 billion. The 2014 Polar Vortex estimated cost was $49 billion. Any one of these types of events greatly exceeds any net economic benefit from exporting LNG. During the time frame of January 1 to January 8, 2018, 58.6 percent of total ISO gas fired electricity capacity was idle because of inadequate pipeline capacity. Nearly 45,000 MW of gas-fired capacity was idle in three NE ISOs.

b. **DOE's failure to consider infrastructure pipeline deliverability and storage limitations is inconsistent with the President Trump's concern for reliability and resiliency of the electric grid.**

Approving more applications to export is putting the cart before the horse. The DOE's electricity office is doing the right thing by examining vulnerability of the pipeline infrastructure. Studies are underway that will confirm what everyone already knows, which is that there are existing pipeline capacity problems.

c. **DOE's failure to consider that LNG export consumers are fundamentally countries who have the ability to buy LNG from the U.S. at any price, even during winter peak demand, to keep their countries operating, results in higher marginal prices for consumers.**

LNG buyers are basically countries. Either state-owned enterprises (SOEs) and/or government-controlled utilities with automatic cost pass through. It is troubling that the largest LNG consuming countries have winter when we do which means that their highest demand is when we have our highest demand.

d. **Failure to address cumulative demand versus natural gas resources.**

A comparison of the U.S. Energy Information Administration's (EIA) AEO 2018 cumulative demand through 2050 to EIA's estimates of technically recoverable natural gas resources in the lower 48 shows that this demand would consume 69 percent of all resources. And, EIA has LNG exports peaking at only 14.5 Bcf/day. A very conservative forecast. While over time resources have been increasing, forecasted demand is out-stripping new resources. IECA did the same analysis using EIA AEO 2017 demand. That analysis concluded that 57 percent of all resources would be consumed. We anticipate that AEO 2019 will show substantially higher and faster consumption of available resources.

e. **Failure to consider the uncertain nature of technically recoverable resources. Caution is warranted by DOE to not overcommit.**

It is also important to keep in mind that *technically available* resources do not mean that they are *economical* to produce. To this point, the natural gas industry's Potential Gas Committee's most recent report of July 2017 states that 58 percent of all natural gas resources are classified as either possible (new fields) or speculative (frontier fields), which adds more uncertainty that these resources may not produce low-cost natural gas. All DOE LNG export reports assume that all of this natural gas is economical to produce when no one really knows because no one has ever drilled a well in these new or frontier fields.

f. **Failure to consider future political decisions to limit acreage available for drilling or regulations on water or hydraulic fracturing that increase costs that must be recovered in higher prices of natural gas.**

We have Presidential elections every four years which can change everything. As we have seen with some past Administrations, there were regulatory actions to limit access to federal lands for drilling and regulations to control drilling processes that increase the cost of production. A new Administration could inflict all of these and more, thereby increasing natural gas costs and prices. States have and will continue to take action to limit drilling. Caution is warranted.

g. **Failure to consider that the majority of producers of natural gas do not have a positive cash flow business.**

Even with relatively higher crude oil prices for the first half of 2018, only 3 of 33 oil and gas companies posted positive cash flow. This is not sustainable long-term. Wall Street is concerned about the indebtedness of producers. Investors demand certain ROE's to continue to invest or lend money for drilling more wells. The fact that interest rates are also increasing puts further pressure on costs. Combined, this means that the price of natural gas must rise. DOE LNG studies do not address this fundamental issue.

h. **Foreign consumers of U.S. LNG exports are receiving the benefits of using our infrastructure that is paid for by U.S. consumers, without paying for it. Their use of it increases our costs.**

LNG exports use of U.S. infrastructure increasing the costs to all U.S. consumers. DOE has failed to consider these costs.

APPENDIX

IECA letter on Data Quality Act to the DOE

July 27, 2018

Mr. Max Everett
Chief Information Officer (CIO)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC, 20585

Re: Data Quality Act Request for Correction: U.S. Department of Energy (DOE) Study on Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports, Docket No. 2018-12621

Dear Mr. Everett:

The Industrial Energy Consumers of America (IECA) requests a correction of the U.S. Department of Energy's (DOE) study on "Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports," docket no. 2018-12621. The study uses a proprietary and non-reproducible economic model which violates the Data Quality Act (DQA). IECA seeks other important DQA corrections as well.

The DQA passed through Congress in Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554, HR 5658)[6] and mandates that agencies ensure "maximizing the quality, objectivity, utility, and integrity of information (included statistical information) disseminated by Federal agencies" to the public.

The DOE's "Final Report to the Office of Management and Budget on Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Department of Energy"[7] sets specific guidelines that must be met for the quality of information to be distributed to the public. Under the DOE guidelines, the study qualifies as "influential," meaning that it may result in an annual effect on the economy of $100 million or more.

The DQA guidelines, some of which are provided below, provide specific and important definitions. The study fails to meet these DQA standards.

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[6] Treasury and General Government Appropriations Act for Fiscal Year 2001(Public Law 106-554) https://www.fws.gov/informationquality/section515.html
[7] https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-DOE-67FR62446OMBquality.pdf

- "Reproducibility: means the capability of being substantially reproduced, subject to an accepted degree of imprecision, and with respect to analytical results, "capable of being substantially reproduced" means that independent analysis of the original or supporting data using identical methods would generate similar analytical results, subject to an acceptable degree of imprecision or error."

  DOE's own guidelines say, "At minimum, DOE Elements should assure reproducibility for those kinds of original and supporting data according to "commonly accepted scientific, financial, or statistical standards."

- "Objectivity: means the information is presented in an accurate, clear, complete, and unbiased manner and the substance of the information is accurate, reliable, and unbiased. The guidelines require formal, independent, external peer review."

- "Integrity: means the information has been secured and protected from unauthorized access or revision, to ensure that the information is not compromised through corruption or falsification."

1. The DOE study uses a NERA proprietary economic model.

Third party economists have concluded that the results of the study are not reproducible, a requirement of the DQA. For this reason, a correction is necessary. A correction meaning that the study cannot be used for its intended purpose. Or, it must be redone with a non-proprietary economic model.

2. IECA seeks proof of paperwork and DOE decisions that the owner of the model, the peer review panel participants and study contributors fully complied with the DQA.

IECA believes that possibly every one of the individuals/entities involved have or will receive financial benefits from the natural gas and LNG export related industries, with the exception of John Staub of the EIA, and would not be independent in their views. A correction is necessary to comply with DOE DQA guidelines of objectivity and integrity.

IECA requests the documents that were required to be filed by study participants.
The DQA guidelines state that "peer reviewers be expected to disclose to agencies prior technical/policy positions they may have taken on the issues at hand, (c) per reviewers be expected to disclose to agencies their sources of personal and institutional funding (private and public sector), and (d) peer reviews be conducted in an open and rigorous manner."

If you have any questions, please contact me directly at 202-223-1661 or via email at pcicio@ieca-us.org.

Sincerely,

Paul N. Cicio
President

The guidelines, some of which are provided below, provide specific and important definitions. The study fails to meet DQA standards.

- "Reproducibility: means the capability of being substantially reproduced, subject to an accepted degree of imprecision, and with respect to analytical results, "capable of being substantially reproduced" means that independent analysis of the original or supporting data using identical methods would generate similar analytical results, subject to an acceptable degree of imprecision or error."

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