U.S. Senate Committee on Energy and Natural Resources
January 27, 2021 Hearing
The Nomination of the Honorable Jennifer M. Granholm to be Secretary of Energy
Responses to Questions for the Record submitted to the Honorable Jennifer M. Granholm

Questions from Chairman Lisa Murkowski

Question 1: If confirmed, will you ensure that the implementation of the provisions in the Energy Act is a priority for the Department of Energy?

Answer 1: Yes.

Question 2: In your view, what are the most important provisions in the Energy Act?

Answer 2: Many provisions of the Energy Act of 2020 will give the Department additional flexibility to push innovation in critical areas for emissions reduction and energy security but several areas stand out to me as particularly ripe for major advances in the next four years: energy storage technology, including the critical minerals supply chain, and advancing carbon capture to be widely applicable in industrial settings. The advanced nuclear, next generation hydro, and energy efficiency provisions are also going to yield game-changing advances in the years ahead.

Question 3: Many Alaska Natives live in rural areas where it is common to spend up to half of one's disposable income on energy expenses, largely for diesel to power generators. DOE is able to provide financial support to help those communities transition away from diesel. In the Energy Act, I authored a provision to give DOE greater flexibility in adjusting matching requirements for that support, and to ensure that all tribal entities – including Alaska Native Corporations – are eligible for all funding opportunities. If confirmed, will you commit to following the law and ensuring that all tribal entities and Alaska Native Corporations are eligible for grants and financial support?

Answer 3: Yes, if confirmed as Secretary, I commit to ensuring that tribal entities will be afforded the opportunity to receive grants and financial support opportunities when eligible consistent with the law.

Question 4: Can you also commit to using the new authority to adjust matching requirements, when appropriate?

Answer 4: Yes, if confirmed as Secretary I will work toward implementing the recent requirements when appropriate as set forth in Section 8013 of EPAct 2020.

Question 5: Can you discuss the importance of minerals in meeting the clean energy and climate goals that the Biden administration has set?

Answer 5: I believe a reliable supply of minerals is critical to achieving our clean energy and climate goals. Whether it is through technology development in our National Laboratories or through the responsible development of our mineral resources, the United States can seize the opportunity to maintain a competitive advantage in producing batteries and other technologies that will enable us to advance renewable energy, and other industries supported by critical minerals.

Question 6: How can DOE support greater domestic production and processing of critical minerals, and make us more competitive with Asian and European markets?

Answer 6: I believe DOE can continue to support responsible domestic production and processing of critical materials, and assist in supporting methods that make increased production and processing more sustainable. If confirmed as Secretary, I look forward to learning more about the ongoing efforts in both the Office of Fossil Energy and ARPA-E to investigate new approaches to mining that will increase the efficiency of extraction with minimal waste, while simultaneously using the waste as a feedstock for mineralizing CO2, which could serve as a feedstock to building materials.

Question 7: Will you ensure that critical mineral projects remain eligible under the loan guarantee program and continue funding for the new Office of Mineral Sustainability? Would you consider using some of the $40 billion in unobligated loan authority to strengthen mineral supply chains, especially for the minerals that are essential to clan energy technologies?

Answer 7: Critical Mineral projects are eligible for loan guarantees under the Title XVII Innovative Technologies Loan Guarantee Program and the Advanced Technology Vehicles Manufacturing Program. If confirmed as Secretary, I will encourage applications from potential projects that meet the applicable statutory and regulatory criteria involving the production, manufacture, recycling, processing, recovery, or reuse of Critical Minerals and other minerals to advance clean energy and advanced vehicle manufacturing technologies.

Question 8: Given the role that U.S. oil exports play in increasing energy access in the developing world, supporting international energy security, and strengthening U.S. foreign policy, what are your views on the oil export ban and domestic oil and gas production?

Answer 8: Yes. I understand that in December 2015, Congress repealed the previously enacted ban on the export of crude oil produced in the United States. While it is my understanding that the Department

of Commerce has authority over the approvals of oil exports, I will get further briefed on the issue. If confirmed, I look forward to discussing this with you further.

Question 9: Geothermal energy is a clean, baseload renewable resource that has the potential to provide reliable energy throughout Alaska. In 2018, DOE established the FORGE research site in Utah as an R&D facility and test center for enhanced geothermal systems. I was able to author language to codify and expand DOE's geothermal work through the Energy Act. How will you ensure the continued success of FORGE and a demonstration program for enhanced geothermal systems?

Answer 9: It is my understanding that the FORGE team is expected to begin drilling this year the second test wellbore on the Milford site, which will be the second well ever drilled for geothermal with a long, near-horizontal leg, similar to those drilled in oil and gas. I am enthusiastic about the opportunity that geothermal offers, like hydro- and nuclear power, to provide emissions free baseload power to the grid. If confirmed as Secretary, I will work with my Office of Energy Efficiency and Renewable Energy to continue to move forward with this important project.

Question 10: We provided new flexibility, eligibility expansions, and transparency for the Title 17 loan program through the Energy Act. This will allow the Department to finance more large-scale projects, like Alaska's Makushin geothermal project, and distribute funds through state-level entities to finance smaller projects. How will you approach DOE's loan programs, and how will you approach the Title 17 program, compared to the Advanced Technology Vehicles Manufacturing program?

Answer 10: I am encouraged by opportunities provided in the Energy Act of 2020, and if confirmed as Secretary, will work to implement those new flexibilities, implement eligibility expansion and improve transparency. I will also pursue oversight and full implementation of the Title XVII Innovative Technologies Loan Guarantee Program and the Advanced Technology Vehicles Manufacturing program and will review how the two programs approach loan underwriting to better utilize the available loan authorities.

Question 11: I have long been an advocate for maintaining a robust Strategic Petroleum Reserve, and have defended it from being used to pay for unrelated spending. What are your views of the Strategic Petroleum Reserve? When and how should the SPR be drawn down?

Answer 11: I understand the Congress has mandated a number of sales from the Strategic Petroleum Reserve (SPR) as budget offsets for unrelated legislation. While that is Congress' discretion, I believe it

is important to look at the intent and historical record of the SPR when considering non-emergency sales of oil from the SPR. Significant draw down has only taken place in the case of emergencies – with only three taking place over the last decade, the most significant being the 30 million bbl in the "Arab Spring" of 2011. The other two events were in 1991 (Iraq, 17M bbl) and 2005 (Hurricane Katrina, 11M). The SPR is robust and maintained for purposes of this kind. If confirmed as Secretary, I will follow the law as enacted by Congress as it relates to the SPR, but also note that Congress created the SPR to be a secure and effective emergency response tool, and if confirmed I would ensure that remains the case.

Question 12: What is the Energy Secretary's responsibility to Congress on the notification of sales from the Strategic Petroleum Reserves?

Answer 12: It is my understanding that it has been DOE's long-standing policy and practice to notify Congress in advance of any proposed sale or drawdown from the Strategic Petroleum Reserve. If confirmed it would be my intent to follow that precedent.

Question 13: If confirmed, would you be willing to delay mandated sales from the Strategic Petroleum Reserves based on market conditions?

Answer 13: If confirmed as Secretary, I believe that it is important to be strategic about implementing the sales from the SPR that were mandated by Congress. Those sales should include consideration of market conditions to the extent such considerations are applicable under the constraints imposed by Congress. In the emergency conditions for which the SPR was created, there is flexibility for such considerations in making drawdowns from the SPR.

Question 14: I was able to get my Nuclear Energy Leadership Act over the finish line last year, which supports the development of advanced reactors and small modular reactors, and has the potential to provide long term, reliable, and sustainable energy in rural Alaska. I understand there have been significant technological developments in the nuclear field, especially since some of the plants were built in your home state of Michigan. How do you think advanced nuclear fits into a climate change mitigation strategy?

Answer 14: I believe advanced nuclear energy is an important and promising technology that we should pursue. If confirmed as Secretary I look forward to working with you to advance emission-free technologies, including forms of advanced nuclear technology.

Question 15: Can you commit to appearing before the Senate Committee on Indian Affairs, if requested, and to sending your budget team over to meet with us when the President submits his budget requests to Congress?

Answer 15: Yes.

Question 16: The Weatherization Assistance Program and State Energy Program are particularly important for communities with high energy costs. In my home state of Alaska, rural communities pay three to five times the rate of electricity in areas connected to the main electric grid. Will you continue funding for these programs and distributing payments for the Weatherization Assistance Program and State Energy Program in a timely manner?

Answer 16: If confirmed, I will be a strong supporter of the Weatherization Assistance Program and the State Energy Program.

Question 17: The Energy Act authorizes multiple new demonstration projects, including for nuclear, carbon capture, geothermal, energy storage, hydropower, and fusion. How will you prioritize these projects to move them towards commercialization, especially with the deadlines that are now in statute, and how will you work with the private sector to accelerate the deployment of the new technologies?

Answer 17: In accordance with the statutory language, the Department will immediately proceed to identify potential demonstration projects to accelerate commercial adoption. Prioritization of new demonstration projects will be supported and informed by the output of earlier stage R&D activities and analysis to identify candidate technologies and projects. Private sector engagement throughout the process will ensure that the demonstration projects address the existing sources of risk that may be impediments to technology adoption and maximize the impact the demonstration project will have on accelerating commercial adoption.

Question 18: If confirmed, will you consider reestablishing the federal advisory committees as standalone, chartered subcommittees, as previously structured?

Answer 18: If confirmed, I will have to learn more about how and why the subcommittees were separately chartered. I will review the Federal Advisory Committee Act and the advisory committees established in the Department.

Question 19: What are your views on pre-commercial methane hydrate research and seismic testing?

Answer 19: I believe the Department has an important role to play in continuing to pursue the necessary research to better understand and characterize methane hydrates.

Question 20: If you are confirmed as Secretary, will you recognize and instruct the Department to promote hydropower, including hydropower in Alaska, as a clean, renewable resource, particularly within orders and initiatives the administration advances to address climate change?

Answer 20: Yes. I agree that hydropower is a critical part of our energy future, both as a source of clean, renewable energy and as a highly flexible resource that can help us advance other renewables like wind and solar. At the same time, it is essential that hydropower is developed and operated in a way that supports healthy rivers and the communities that depend on them. If confirmed as Secretary, I will support the Department's hydropower program efforts, including the newly announced Energy Transitions Initiative Partnership Program that will work directly with a number of communities in Alaska, and the continued development of new technologies and approaches that ensure hydropower facilities are environmentally sustainable and resilient to climate change.

Question 21: My Energy Act, which was included as Division Z of the recent year-end Appropriations bill, contains provisions that allow the Secretary of Energy to make hydropower incentives available to a broader range of entities, including in rural and tribal communities and within islanded utility systems. As Secretary, will you recognize rural utilities' ability and requests to participate in this program? Will you recognize and provide all appropriate consideration for utilities in Alaska that may apply as part of joint ventures with Alaska Native Corporations chartered under the Alaska Native Claims Settlement Act?

Answer 21: It is my understanding that DOE is working to expand the eligibility criteria of the hydropower incentive to incorporate Division Z of the Energy Act. If confirmed as Secretary, I will recognize and provide all appropriate consideration for utilities in Alaska to apply as part of joint ventures with Alaska Native Corporations chartered under the Alaska Native Claims Settlement Act.

Question 22 Back home in Alaska, we have many opportunities to develop our abundant hydropower resources, and those projects could reduce or eliminate the use of costly diesel fuel in small communities that are not connected to a larger grid. In fact, hydropower is often the best and only way to eliminate current diesel use. If you are confirmed as Secretary, will you work with me, the State of Alaska, and entities throughout our state to improve the feasibility and economics of Alaska hydropower in remote communities through grants, technical assistance, and more?

Answer 22: Yes.

Question 23: Originally authorized in 2000 under Public Law 106-511, the Northern Transmission Line of the Southeast Intertie provide for a high-voltage transmission line to connect Skagway, Haines, and Juneau. The project would deliver renewable energy to these communities, enable new hydropower developments, and bring economic opportunities to Southeast Alaska. Will you support this project and other projects that seek to modernize Alaska's microgrids and electric grid?

Answer 23: Yes.

Questions from Senator Joe Manchin III

Question 1: NETL is unique among the labs in that it is the only government owned, government operated lab. As a result it lacks some of the flexibility that some of other labs enjoy, such as control over its own hiring. And right now I understand that there are more than 30 vacancies awaiting Secretarial approval to fill at NETL.

a. Will you turn your attention to approving the hires needed at NETL?

Answer 1a: Yes.

b. Will you work with me to ensure NETL has the authority over its human resources needed to put it on level footing with the other 16 Labs?

Answer 1b: Yes. I understand that as a government-owned, government-operated (GOGO) national laboratory NETL faces certain challenges that their peers at government-owned, contractor-operated (GOCO) do not have to face. If confirmed as Secretary, I look forward to working with you to ensure a more level footing for NETL within the confines of the law.

Question 2: In 2016, the Department of Energy produced the very first U.S Energy Employment Report as a way to provide a more complete definition and quantification of energy employment across the U.S. economy. The FY 2020 appropriations process provided funding to the DOE's Office of Policy to complete an annual U.S. Energy Employment Report. Funding for this directive was also provided in the last omnibus bill. I want to make sure the report with the employment data from 2020 doesn't fall through the cracks.

a. Can I have your assurance that you will look into this and make sure DOE carries out this important annual directive, starting with 2020?

Answer 2a: Yes, I value the information contained in the USEER very highly and think that it is critical to set a baseline so that we can understand the jobs challenges and opportunities and

shape policy accordingly. I also understand that it is a useful resource for industry. If I am confirmed as Secretary, I will work to ensure that the Department will compile and deliver the 2021 USEER (containing data from calendar year 2020) on schedule.

Question 3: I understand that the new Working Group on Coal and Power Plant Communities and Economic Revitalization will be co-chaired by the National Climate Advisor and the Director of the National Economic Council but will include Department of Energy. I think it's very important that DOE has a seat at this table because work in traditional energy jobs is more than a livelihood, it's a part of the culture in places like Appalachia and many skills possessed by traditional energy workers are readily transferrable to other energy-related jobs and those in manufacturing.

a. Can I have your assurance that the DOE will be an active and vocal member of the working group with this understanding in mind and that you will keep me and my staff updated on this important effort to coordinate investments and other efforts to assist coal, oil and natural gas, and power plant communities like many in West Virginia?

Answer 3a: Yes.

Question 4: As you discussed in today's hearing, prioritizing the cybersecurity of our energy systems is of great importance.

a. Do you expect to maintain a separate office focused on cyber as the CESER Office has been?

Answer 4a: Yes.

Questions from Senator John Barrasso

Question 1: Technology neutrality should be an important principle to guide funding decisions. It is my understanding that the Department of Energy's (DOE) Loan Programs Office (LPO) has issued a loan guarantee to only one fossil fuel project, a carbon capture project in Lake Charles, Louisiana. On the other hand, LPO has issued guarantees worth nearly $13 billion in renewable energy projects. Do you commit to treating fossil fuel and nuclear project applicants fairly?

Answer 1: For the Title XVII Innovative Technologies Loan Guarantee Program, Congress authorized loan guarantee authority to deploy a wide variety of new and innovative technologies that avoid, reduce, sequester, or utilize greenhouse gases and other pollutants. This includes Carbon Capture technology deployed at scale. I understand there are a number of factors that go into providing loans, including strong applications from the private sector, which is outside of DOE's control. If confirmed as Secretary,

I would welcome applicants for loan guarantees for carbon management technologies, and commit to being responsive to all applicants to that program that meet these criteria and ensure they receive prompt and equitable consideration.

Question 2: The Unites States has "re-joined" the Paris climate agreement. The agreement has not been confirmed by the Senate. Without being ratified, is the Paris Agreement legally binding in any way, including as a legal basis for regulation?

Answer 2: I understand that on January 20, 2021, President Biden signed the instrument to rejoin the Paris Agreement, which will take effect 30 days later. As a United States government level instrument, if confirmed, I will look to the State Department and the Department of Justice concerning the legal force and effect of the instrument.

Question 3: Do you agree the Trans-Alaska Pipeline System is an asset of great importance to our national and energy security?

Answer 3: Yes, I believe the Trans-Alaska Pipeline System has strategic value to the United States.

Question 4: According to the Global Energy Institute's authoritative energy security indexes, the United States is more energy secure than at any time since 1970 and has the best energy security of 25 of the largest energy consuming countries in the world. This has been a bipartisan goal for decades. The group cites greater domestic oil and gas production from hydraulic fracturing in shale formations as the primary reason for the improvement in energy security. On balance, has hydraulic fracturing been a good thing or a bad thing for U.S. energy security?

Answer 4: The technologies of hydraulic fracturing and horizontal drilling that were pioneered in part by the Department of Energy decades ago have certainly contributed to the nation's energy security. Similarly, the innovations that the Department has worked on since with its partners in the private sector have continued to increase that security even further by diversifying our energy sources. If confirmed, I will drive the Department to pursue the research that will further this goal while also making our nation more secure by mitigating the threats of the climate crisis.

Question 5: Pipeline certification is already mired in controversy and litigation, causing significant delays. How would you suggest the certification process could be improved such that there is a future for natural gas transportation, production, and financing? Energy producing states such as Wyoming, Alaska, West Virginia and New Mexico and energy consuming states, such as those in New England, rely on the pipelines to enable

product to get to market. How should the Biden Administration and FERC proceed on pipeline certifications to enable reliable and low-cost energy supply to continue?

Answer 5: DOE plays an important role in natural gas infrastructure, along with FERC and PHMSA. For example, DOE engages in natural gas technologies R&D to enhance pipeline reliability, integrity, and operational flexibility, and to ensure infrastructure security. The certification and permitting processes are important to understanding environmental and economic impacts. If confirmed as Secretary, I will work to ensure that DOE's work helps inform its Federal partners on important issues around certification processes, cost, methane leakage, and other economic and environmental impacts.

Question 6: Isn't keeping American energy costs low critical to our economic success? If confirmed, will you commit to working to foster an environment where natural gas and oil markets remain stable and affordable?

Answer 6: If confirmed as Secretary, I will work to ensure that energy costs are low across the country and foster a market that is fair to all energy sources.

Question 7: The COVID-19 pandemic has clearly had a significant effect on the international economy and specifically, oil markets. As Secretary, what steps would you take to help to stabilize oil markets?

Answer 7: If confirmed as Secretary, I will consult with other agencies across government to ensure that impacts to the energy sector from the COVID-19 crisis are mitigated and energy markets are built back to be more resilient.

Question 8: In May 2014, you appeared to celebrate on Twitter when Stanford University divested coal investments from their endowment. As Secretary, will you encourage other investment funds to stop investing in American energy?

Answer 8: I do not believe it to be the role of the Secretary of Energy to comment on the investments of private institutions, and if confirmed, I do not intend to.

Question 9: Model building energy codes across the country establish baseline standards for building energy efficiency. DOE does not write these codes, but it can be an effective participant in their development by providing technical assistance to analyze energy savings. Over the last few years, however, DOE has increasingly advocated for a prescriptive approach that favors certain products and technologies and pursued aggressive and expensive requirements. Can you explain what you think DOE's role related to model energy codes should be?

Answer 9: It is my understanding that the Department is directed by the Energy Conservation and Production Act (ECPA), as amended, to provide technical assistance supporting the development by code-development bodies of model building energy code updates, as well as state implementation of building energy codes (42 USC 6836 and 6833). In recent years, the building industry, with DOE's support, has focused increasingly on compliance options that allow greater flexibility and trade-offs among consumer-friendly solutions, known as *performance*-based codes. If confirmed as Secretary, I will work to ensure DOE maintains its technical assistance role, supporting the industry in its ongoing shift toward performance-based compliance options.

Question 10: Building energy codes can limit choice and increase costs for consumers. Building energy codes legislation could pave the way for a federal building code which would erode the cooperative framework that currently exists in the codes process and permit cities to adopt codes that far exceed the model codes—otherwise known as stretch or reach codes. Stretch codes are currently being used to eliminate natural gas in some cities. Please explain the administration's position on stretch energy codes and your plan to ensure that energy choice is preserved.

Answer 10: I understand that building energy codes have a good track record of helping newer technologies and practices be incorporated into new homes and buildings and major retrofits in ways that save consumers money, increase local jobs, and avoid pollution. If confirmed as Secretary, I am committed to a DOE that provides state and local jurisdictions with robust cost and benefit information on their building energy code options as they consider their choices, as directed by the congressional requirements described above.

Question 11: Battery production seemed to be a priority during your gubernatorial terms. What have you learned from your experience with battery production in Michigan that you will take with you, if confirmed? What will you do to enable DOE on your watch to be more successful in this area than Michigan has been?

Answer 11: Battery production and supply must correspond to the demand for EV or energy storage batteries. Ten years ago, the auto industry was poised to make a change to embrace the EV but had not made the transition, and the emerging industry went through some upheaval as supply outpaced demand. Nevertheless, early investments paid off well in Michigan – today approximately one third of all US battery production is in Michigan and the auto industry is promoting EV purchases far more than they

were a decade ago, which creates demand in the U.S. and globally. Just this week, GM announced that it would be aiming for a zero emissions fleet by 2035, putting Michigan and other U.S. battery manufacturers in an advantageous position in the supply chain. While R&D has helped drive down the price of batteries by 89% in the past decade, I would also prioritize R&D to continue to reduce the cost of energy storage, both for vehicles and the electric system.

Question 12: While you were governor, the Michigan Economic Growth Authority approved billions of dollars in tax credits for 434 projects. A May 15, 2014 analysis by the Mackinac Center for Public Policy found that only 10, or 2.3 percent, of those projects were successful in meeting their job creation promises. In your view, why did these projects underperform their job creation expectations?

Answer 12: When projects were announced, the Michigan Economic Growth Authority (MEGA) credit offered a 10–15 year window to create jobs. The report cited was conducted in 2014, so the full extent of the job creation of projects incentivized in 2009 during the Great Recession was incomplete. It is unclear how that report defined failures. To the extent that they measured companies that only partially met their job creation goals as failures, I disagree with that assessment. In stimulating job growth in a recession, as well as spurring on new industries, some projects must be expected to fail, but in the case of MEGA investments, the vast majority of the projects themselves were not failures.

Question 13: Do you consider "cash for clunkers" a successful model for economic recovery that should be replicated in response to economic conditions resulting from the COVID-19 pandemic?

Answer 13: Cash for Clunkers created demand for fuel efficient vehicles and was very helpful to both automakers and struggling Americans as we pulled out of the Great Recession. A similar economic tool could create demand for American electric vehicles and EV batteries as we try to emerge from the COVID-19 recession.

Question 14: Increasing use of renewable energy and batteries pose significant challenges regarding disposal, including, for example, disposal of toxic chemicals. What role do you see DOE playing to address these issues?

Answer 14: It is my understanding the DOE Office of Energy Efficiency and Renewable Energy focuses on battery recycling, disposal, and reduction of critical materials through the Lithium-Ion Battery Recycling Prize and our ReCell Lithium Battery Recycling R&D Center. If confirmed as

Secretary, I look forward to reviewing the center's efforts, as well as the Department's Lithium-Ion Battery Recycling Prize, which is focused on developing and demonstrating processes that, when scaled, have the potential to profitably capture 90% of all discarded or spent lithium-based batteries (LIBs) in the United States and re-introduce key materials into the U.S. supply chain.

Question 15: I cited a December 29, 2020 USA Today article at your confirmation hearing. I explained how the article alleged that, as governor, you directed hundreds of millions in taxpayer dollars to battery, solar, and other "green" energy companies that failed to deliver on their job-creation promises. I highlighted one example – A123 Systems, and asked why we should have confidence that, if confirmed, you will be able to invest taxpayer dollars wisely? You responded as follows: "First, that article is incorrect. In Michigan, we have something called the Michigan Economic Growth Authority that offers tax credits to firms that promise to build, to create a certain number of jobs... But if they don't, they don't get the funds. And so in Michigan, because of the way the tax credit is structured, we don't pay out if firms don't deliver." Is it your position that no Michigan taxpayer dollars were lost in connection with any investment made in or payments made to A123 Systems by any authority of the State of Michigan?

Answer 15: The question was about a variety of clean energy companies and used A123 as the representative example. In stimulating job growth in a recession, as well as spurring on new industries, some projects must be expected to fail, but the experience of both MEGA and the DOE loan program show that such investment pays off in the long run. Michigan's MEGA program still saw a positive return ($2.30 for every dollar invested) for Michigan's taxpayers, just as the DOE's Loan Program Office has seen a positive return of $500 million for US taxpayers in fees and interest from the borrowers in spite of losses on some specific guarantees. And that doesn't include the economic benefit of those projects to their local economies and through tax receipts. I believe we should be responsibly betting on American technology and American companies, even if on occasion one may not succeed. If confirmed I will press hard to employ such programs that have a proven track record of economic success.

Question 16: The vast majority of critical defense facilities are supplied power by the civilian electric grid. Your policies will have a direct effect on the reliability and resilience of the grid. How will you ensure our most critical national security assets have reliable power and are resilient in the current cyber and physical threat landscape?

Answer 16: If confirmed as Secretary, I will review the DOE Office of Cybersecurity, Energy Security and Emergency Response for additional cybersecurity monitoring tools and threat information sharing.

It is my understanding that the Office of Electricity is implementing a Defense Critical Electric Infrastructure strategy and program that is focused on strengthening the reliability and resilience of the nation's energy infrastructure, to include a public-private national security capability focused on cyber and physical threats affecting critical defense facilities. The Department is also investing heavily in microgrid technologies that can be used to isolate and self-power discreet areas such as defense facilities in case of attack or natural disaster affecting the power grid. Additionally, the DOE Office of Electricity is collaborating with eight National Laboratories and relevant stakeholders to develop an integrated North American Energy Resilience Model (NAERM) to conduct the systematic identification of threats to the nation's energy infrastructure, the development of market approaches for resilience investments to reduce exposure to these threats, and enhanced situational awareness and sophisticated analytics to minimize the impact of threats and increase resilience as they evolve in real time.

Question 17: Cybersecurity experts agree that the internet connectivity of many clean energy technologies increase the threat landscape and likelihood for attacks against energy infrastructure. Has the administration outlined an energy cybersecurity plan to accompany this massive build out in vulnerable clean energy technologies? More broadly, do you commit to persisting and improving upon DOE's role as the leader for electric sector cybersecurity? How will you ensure DOE's leadership when working with the Department of Homeland Security?

Answer 17: If confirmed as Secretary, I look forward to improving upon DOE's role as the leading agency for electric sector cybersecurity. It is my understanding that DOE is working to help the energy sector adapt to the changing nature of cybersecurity risk. Specifically, in the past year, DOE initiated an update, in collaboration with DHS, of the list of energy sector critical infrastructure where a cybersecurity incident could reasonably result in catastrophic regional or national effects on public health or safety, economic security, or national security, pursuant to Section 9 of Executive Order (E.O.) 13636, *Improving Critical Infrastructure Cybersecurity).*[1] Also, in the past year, DOE's CESER partnered with the National Renewable Energy Laboratory (NREL) to stand up a Cybersecurity Wind Consortium to partner with industry to increase the cybersecurity of the US wind fleet.

[1] Available at, https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/executive-order-improving-critical-infrastructure-cybersecurity.

Question 18: The Senate depends on the EIA for reliable, non-partisan energy data and forecasts. If you are confirmed, will you pledge to ensure that EIA will not be subject to political pressures to tip the scales in favor of the president's policy preferences?

Answer 18: Yes. If confirmed as Secretary, I intended to protect EIA's autonomy as outlined in the DOE Organization Act of 1977.

Question 19: The President has endorsed the goal of net "0" emissions by 2050. If confirmed, will you work with the Committee to get EIA to model this goal as a side case to the Annual Energy Outlook 2021?

Answer 19: If confirmed as Secretary, I will follow the DOE Organizational Act of 1977. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government. EIA's statistical and analytical products must remain free from political influence. EIA has and will, subject to available time and resources, take requests from Congress, the Secretary of Energy and other parts of the federal government to analyze various policies or scenarios. I encourage Members of Congress to express their interests directly to EIA.

Question 20: The President's Inauguration Day directive to agency and department heads instructs them to "identify ways to modernize and improve the regulatory review process" to promote "policies that reflect new developments in scientific and economic understanding, fully accounts for regulatory benefits that are difficult or impossible to quantify, and does not have harmful anti-regulatory or deregulatory effects"? If confirmed, how will you "fully account" for alleged benefits that are "impossible to quantify"?

Answer 20: If confirmed, I will carry out President Biden's commitment to make policy decisions rooted in the best available science. This includes the regulatory process. One critical step in ensuring benefits are captured in regulatory analyses includes updating the social costs of greenhouse gasses. I understand that the Executive Order reestablished the Interagency Working Group on the Social Cost of Greenhouse Gases, and if confirmed, I would ensure that DOE brings its technical expertise to bear in the process to update the values for these gases. Additionally, if confirmed, I would ensure that all regulatory action taken by the department uses these scientifically based economic inputs and all other reasonable technical and scientific review practices to make all rulemaking analyses as accurate as possible.

Question 21: Do you support continued use of natural gas for space heating, water heating, cooking, and clothes drying purposes?

Answer 21: It is my understanding that the Department of Energy does not determine what fuels are to be used in the nation's buildings. Congress has authorized the Department to assess the updated building codes resulting from three-year improvement cycles and to see if these updated codes improve energy efficiency over the prior code as well as to provide technical assistance to state and local jurisdictions as they seek to update their building energy codes. If confirmed, I will see that DOE fulfills its responsibilities.

Question 22: What is your view on local bans that attempt to curtail natural gas use in residential and commercial buildings?

Answer 22: If confirmed, my goal will be to assist states and local governments with the technical assistance to better inform their decision-making, not to predetermine what those decisions will be, as directed by Congress.

Question 23: Do you believe the United States should continue to play a leading role in the export of liquefied natural gas to our trading partners in Europe, Asia, and elsewhere?

Answer 23: I believe U.S. LNG exports can have an important role to play in reducing international consumption of fuels that have greater contribution to greenhouse gas emissions. If confirmed as Secretary, I also look forward to working with U.S. industry in ways to reduce emissions associated with this commodity.

Question 24: Do you believe that advanced nuclear technologies can become a significant contributor to a low-carbon energy future?

Answer 24: Yes.

Question 25: Please describe to the committee the importance of secure and reliable supply chains to our nation's energy security. Can you describe how supply chain vulnerabilities have the potential to impact access to affordable energy and economic recovery goals?

Answer 25: As the recent COVID-19 pandemic has clearly illustrated, supply chain vulnerabilities impact all sectors of the economy – including our nation's energy security. For clean energy

technologies, supply chain vulnerabilities of critical minerals and materials threaten the ability of the U.S. to manufacture and deploy these technologies domestically. If confirmed as Secretary, I will review DOE's strategy for addressing critical minerals and materials --- diversifying supply, developing substitutes, and improving reuse and recycling --- and will ensure that DOE will leverage its expertise and capabilities to work with industry, interagency partners, and international allies to address these vulnerabilities.

Question 26: Do you agree that we need to ensure electricity markets properly value the security and resiliency provided by existing baseload capacity?

Answer 26: Security, resiliency, reliability, affordability, and clean energy are key goals for the grid. The ability of generation capacity to respond when called upon is one of many important attributes of performance that should be valued in the markets.

Question 27: Do you agree with IEA that carbon capture, utilization, and storage (CCUS) technologies are essential to meaningfully reducing carbon dioxide from the atmosphere? Will you ensure that emerging technologies like carbon capture receive the adequate funding necessary to advance towards commercialization, particularly when compared to technologies that are already well-established in the market? How can DOE advance CCUS technologies at a faster pace? How will DOE leverage existing CCUS research and demonstrations ongoing in the private sector, at universities, and at other institutions around the country? Other countries have made serious commitments to CCUS. They understand its real potential for reducing greenhouse gas emissions. How will you work with other countries to share lessons learned, and to collectively advance global greenhouse gas emissions through CCUS technologies? Will you commit to making carbon removal a top priority for your agency and provide necessary resources to launch and fund CCUS programs?

Answer 27: I agree that point source carbon capture and carbon removal technologies are essential. It is my understanding that the DOE Office of Fossil Energy and ARPA-E have innovative programs built around these important areas, and have begun supporting direct air capture for the first time last year. If confirmed as Secretary, I look forward to working with you and other Members of Congress, industry and other stakeholders to support the implementation of the new programs and authorizations around CCUS from the *Energy Act of 2020*. To increase the pace, we need increased deployment, and if confirmed, I will work to ensure that DOE will work with stakeholders in the U.S. and around the world to do so.

Question 28: Nuclear energy is the largest source of clean energy in the United States. Any realistic clean energy future will necessarily require us to sustain and expand the use of nuclear energy. How will you prioritize the role of nuclear energy technologies?

Answer 28: Nuclear energy provides more than 55% of our clean energy and nearly 30% globally, and it is critical to sustain this share of energy use to meet our carbon reduction goals. If confirmed as Secretary, I will work with the Department to continue to support the research, development, and demonstration of technologies to preserve our existing fleet, deploy advanced reactor technologies, and expand nuclear energy to markets beyond electricity to meet our carbon reduction goals in the United States and globally.

Question 29: What specific actions will you take to ensure the U.S. regains its global leadership in nuclear energy?

Answer 29: Many countries are looking at nuclear energy to meet their growing energy needs and are interested in technologies developed in the United States. If confirmed as Secretary, I will support the whole-of-government approach and work with my counterparts across the Interagency and with Congress to empower the U.S. nuclear industry to develop, demonstrate, and export American-made nuclear technology.

Question 30: The Nuclear Waste Policy Act (NWPA) directs DOE to site, construct, and operate a geologic repository for high-level waste at Yucca Mountain. DOE has failed to fulfil its statutory obligation to move forward with the repository. How will you ensure DOE compliance with the NWPA?

Answer 30: I support examining the recommendations from the "Blue Ribbon Commission on America's Nuclear Future", which recommended seeking a consent-based approach to siting our nation's spent nuclear fuel and high-level radioactive waste. If confirmed, I look forward to working with you and other Members of Congress to make progress towards that goal.

Question 31: It is my understanding that DOE's Loan Program Office (LPO) sometimes utilizes appropriated dollars to pay for the credit subsidy costs of loan guarantees, which is the long-term amount the guarantee will cost the federal government. Should taxpayer funds pay credit subsidy costs for LPO projects? What is your position on increasing appropriations to cover the credit subsidy costs of loan guarantees?

Answer 31: In the past, Congress determined it was necessary to appropriate credit subsidy amounts for Advanced Technology Vehicles Manufacturing (ATVM) loans, Tribal Energy Loan Guarantees, and loans for certain renewable energy technologies that qualified for the 2009 American Reinvestment and Recovery Act (the 1705 program). It is my understanding that there is currently $2.4 billion remaining in appropriated credit subsidy for ATVM, $8.5 million for the Tribal Energy Loan Guarantee Program, and $160 million available for renewable energy projects. If confirmed as Secretary, I will review these programs in order to identify potential improvements.

Question 32: DOE recently issued guidance for the LPO, clarifying that the office will encourage applications from potential projects involving the production, manufacturing, and processing of critical minerals, such as uranium. Do you commit to reviewing these potential project applications with the same urgency DOE reviews renewable project applications?

Answer 32: Yes. If confirmed as Secretary, I commit that the Department will be responsive to all applicants under the loan and loan guarantee programs administered by it and will ensure that all applications receive prompt and equitable consideration. Projects under the loan guarantee and loan programs administered by the Department are considered on their merits and must meet all of the eligibility requirements in order to be considered for a loan guarantee or loan.

Question 33: The Experimental Program to Stimulate Competitive Research ("EPSCoR") is a program within the DOE's Office of Science. This program is designed to improve energy- related research in 24 largely rural states, including the state of Wyoming. DOE needs to continue to build basic research capacity in EPSCoR States. If confirmed, would you support increasing funding for the EPSCoR program?

Answer 33: If confirmed as Secretary, I look forward to learning more about the EPSCoR program and the role it plays in aiding energy-related research. I look forward to working with you and your staff on this issue.

Question 34: What is your experience and relationship with Wyoming? I appreciate your commitment to visit Wyoming. Will you make your senior staff available to meet with my senior staff to discuss how DOE can collaborate with Wyoming to advance mutual priorities?

Answer 34: I have been to Wyoming several times on trips to visit our magnificent National Parks there, and look forward to visiting Wyoming again. If confirmed, I will ensure that the Department is available to discuss the many opportunities to collaborate with Wyoming.

Question 35: Multiple nuclear reactors have closed over the past few years. How do you see the future of nuclear energy unfolding in the United States and internationally? What will be DOE's contribution to the future of nuclear power during your tenure?

Answer 35: If confirmed as Secretary, I will support robust research, development, and demonstration of advanced nuclear energy technology and seek to advance DOE's work to commercialize this technology to build and empower American jobs. The Department's Advanced Reactor Demonstration Program (ARDP) will speed the demonstration of a variety of U.S. advanced reactor designs to build a portfolio of new reactors. I will support the whole-of-government approach and work with my counterparts across the Governmental Interagency to empower the U.S. national laboratories, universities, and U.S. nuclear industry to develop, demonstrate, and export American-made nuclear technology.

Question 36: Will you work to ensure that DOE is equipped with adequate funding to continue researching and developing advanced nuclear reactor designs?

Answer 36: Yes.

Question 37: Are you committed to ensuring that DOE is proactive in making energy and scientific data available to the public, consistent with laws protecting privacy and confidential business information?

Answer 37: Yes.

Question 38: DOE is a science-focused agency, and there are several advisory boards and councils that provide the Secretary with advice and scientific recommendations. Will you continue to extend the charters of these advisory boards and councils? What are your priorities for advisory boards and councils?

Answer 38: If confirmed as Secretary, I look forward to more closely reviewing the Department's advisory boards and councils and making recommendations based on that review.

Question 39: How do you define "place-based" workforce efforts as you alluded to them during your confirmation hearing?

Answer 39: To me, a "place-based strategy" is one in which the economic development program respects and builds upon the local, unique qualities and input of a community, instead of imposing a one-size-fits-all solution on a diverse country with a heterogeneous problem set.

Question 40: Do you commit that you will not only maintain disclosure and conflict of interest policies for our nation's premier research organizations, and that you commit to identify new policies that can further protect the American people's investment in new technologies, whether they are in energy, science, or national defense?

Answer 40: Yes.

Question 41: Energy supply chains are becoming increasingly reliant on Chinese-manufactured goods, particularly, for example, components for solar and wind energy. How will the new administration address the issue of energy security threats that can arise from Chinese components?

Answer 41: The increasing complexity of supply chains, coupled with the reduced visibility that comes from proliferating subcomponent suppliers, is an attractive opportunity for adversaries to insert malicious code and hardware during manufacture. The President's Executive Order Made in America will support the rebuilding of domestic manufacturing. It is my understanding that DOE is supporting supply chain risk assessments to address security threats. If confirmed as Secretary, I will review the Department's work in this area to ensure DOE is adequately addressing the issue of potential energy security threats.

Question 42: Do you acknowledge the importance of both merchant and small refineries as part of our nation's critical infrastructure, and pledge to play an active role in the administration to ensure that high Renewable Identification Numbers (RINs) prices will not jeopardize their viability?

Answer 42: Refineries are important to our economic and national security. The DOE's Energy Information Administration (EIA) provides transparent and detailed annual fuel supply and consumption data to the EPA for its analysis of the RINS market.

Question 43: EIA data consistently show a lack of correlation between ethanol blend rates and the price of RINs, which demonstrates that there are significant structural problems with the Renewable Fuel Standard (RFS) program. Will you commit to using EIA data when advising the Administrator of the Environmental Protection Agency on the RFS program?

Answer 43: If confirmed as Secretary, I commit to working with EPA and EIA to determine the best path forward on the RFS.

Question 44: Does the Public Financial Disclosure Report (Form 278e) that you signed electronically on December 22, 2020 accurately reflect, for the period covered by the Report, all fees or payments of more than $5000 that you or any company or firm with which you have been affiliated (e.g., Granholm Mulhern Associates) received from any source for services you performed for that source? If not, please amend or supplement your Form 278e.

Answer 44: Yes.

Question 45: Does your response to Question 14 on the Statement for Completion by Presidential Nominees to the Committee on Energy and Natural Resources (Committee Questionnaire) that you submitted accurately reflect, for the five-year period covered by the Committee Questionnaire, all fees or payments of more than $5000 that you or any company or firm with which you have been affiliated (e.g., Granholm Mulhern Associates) received from any source for services you performed for that source that are not listed on your Public Disclosure Report? If not, please amend the Committee Questionnaire.

Answer 45: I have listed all sources of fees or payments of more than $5,000 for my services from January 1, 2018 through December 22, 2020 on my Form OGE-278e. My initial response to Question 14 included all sources of fees and payments for my services from January 1, 2016 through December 31, 2017 that did not extend past December 31, 2017. For clarity, I have amended my response to Question 14, attached, to consolidate all information from calendar years 2016, 2017, and 2018. Information for calendar years 2019 and 2020 is on Part 4 of the Form OGE-278e.

Question 46: With respect to your affiliation with and financial interest in Proterra Inc., please confirm in narrative form the practical limitations that the Committee can expect your ethics agreement to impose upon you, especially as those limitations may bear on DOE's programs that promote or otherwise impact or potentially impact electric transportation, including, for example, the Advanced Technology Vehicles Manufacturing (ATVM) Program. For example, can the Committee assume that you will recuse yourself from matters involving the ATVM Program at least until you can carry out the divestment that you have pledged to make of your interests in Proterra? Should I infer, that you will recuse yourself as appropriate from matters involving electric transportation at least until such time as you divest your interests in Proterra?

Answer 46: If confirmed, I will recuse myself from all particular matters that to my knowledge have a direct and predictable effect on the financial interests of Proterra until I have completed the divestiture.

Question 47: In your financial disclosure form you list being a co-chair and advisor of American Bridge Foundation which lists on its website that its goal is to "find what Republicans are hiding and make sure voters hear about it." It also highlights that its research "inundated Republicans with negative news stories" and that the Foundation will be "laser focused on taking back all facets of our government." Will you recuse yourself from this position?

Answer 47: I have already resigned my position from this organization. If confirmed, I will recuse myself from all particular matters involving specific parties in which the American Bridge Foundation is a party or represents a party for two years from the date of my appointment, as required by regulation and the Biden-Harris Administration Ethics Pledge.

Question 48: You have disclosed that you are currently a Member of the Board of Proterra, Inc., a company that is active in the fields of electric transportation and electric storage. In the last week, Proterra has announced its intention to become publicly listed through a merger with ArcLight Clean Transition Corp. (ArcLight), a special purpose acquisition company (SPAC). It is expected that the company will be valued at $1.6 billion. Please describe your involvement in the announced merger. Assuming the merger is completed, will you recuse yourself from DOE activities that may bear on or involve ArcLight? To what extent, if any, did President Biden's intention to nominate you as Secretary of Energy impact your participation as a member of Proterra's Board, including its announced merger with ArcLight? Was your nomination discussed at any board meeting or with any members associated with Proterra?

Answer 48: If confirmed, I will recuse myself from all particular matters involving specific parties in which ArcLight is a party or represents a party for two years from the date of my appointment, as required by regulation and the Biden-Harris Administration Ethics Pledge. In December, after being nominated, I informed the General Counsel and President of Proterra that I would resign if confirmed.

Question 49: With respect to Techtonic Inc., you disclosed that you were a member of the Board of Directors through November 2020. Do you have or, if you are confirmed, expect to have any continuing involvement with Techtronic? What steps will you take to avoid the appearance of any conflict of interest with Techtronic?

Answer 49: No. If confirmed, I will recuse myself from all particular matters involving specific parties in which Techtonic is a party or represents a party for two years from the date of my appointment, as required by regulation and the Biden-Harris Administration Ethics Pledge.

Question 50: With respect to the California Institute for Energy and Environment (CIEE), you disclosed that you have been a Senior Research Fellow. Do you expect to have any continuing involvement with CIEE? What steps will you take to avoid the appearance of any conflict of interest with CIEE?

Answer 50: No. If confirmed, I will recuse myself from all particular matters involving specific parties in which CIEE, a part of the University of California, is a party or represents a party for one year from my confirmation, as required by regulation.

Question 51: With respect to the U.S. Global Leadership Coalition, you disclosed that you received an $18,000 honorarium in 2019. What was the basis for this honorarium? If you delivered a speech, please provide a copy or link.

Answer 51: A panel discussion with Sen. Rick Santorum entitled "State Leaders Summit: Foreign Policy and Politics." I do not have a transcript, but the video is available here: https://www.c-span.org/video/?461801-3/state-leaders-summit-foreign-policy-politics#

Question 52: With respect to the American Public Transportation Association, you disclosed that you received an $18,014 honorarium in 2019. What was the basis for this honorarium? If you delivered a speech, please provide a copy or a link.

Answer 52: A speech to the American Public Transportation Association. There does not appear to be a video or transcript, and because I usually speak extemporaneously, I do not have prepared remarks. Here is a link to the slides I used as a basis for my remarks: https://prezi.com/xxfszhlqgju1/transit-speech/?token=91d884317c50022387bc6baf243438c4136f2c40c55868812ffdf84c5602090a.

Question 53: With respect to the American Hospital Association, you disclosed that you received a $20,000 honorarium in 2019. What was the basis for this honorarium? If you delivered a speech, please provide a copy or link.

Answer 53: A bipartisan panel discussion for the American Hospital Association. There does not appear to be a video or transcript, and because I usually speak extemporaneously, I do not have prepared remarks.

Question 54: With respect to the Hood Hargett Breakfast Club, you disclosed that you received an $18,400 honorarium in 2019. What was the basis for this honorarium? If you delivered a speech, please provide a copy or a link.

Answer 54: A speech to the Hood Hargett Breakfast Club. There does not appear to be a video or transcript, and because I usually speak extemporaneously, I do not have prepared remarks. Here are the

slides I used as the basis for my remarks: https://prezi.com/zsoyaqtykfvl/8-1-19-are-you-willing-to-relinquish-the-wheel/?token=e3dd6f41ce8c19b704eef3c6b1b6d79ffb6762f2dfcde292a6cd5b78f39c2a31

Question 55: With respect to the FPA NorCal Conference, you disclosed that you received a $12,000 honorarium in 2020. What was the basis for this honorarium? If you delivered a speech, please provide a copy or a link.

Answer 55: A speech to the FPA NorCal Conference. There does not appear to be a video or transcript, and because I usually speak extemporaneously, I do not have prepared remarks. Here are the slides I used as the basis for my remarks: https://prezi.com/ewrlwqjzwyih/copy-of-fpa-norcal-conference/?token=435f1e21499a480ff79366e73955126af357e6689c4c3468b2182709ef6f38f3

Question 56: With respect to UBS Group, you disclosed that you received an $18,000 honorarium in 2020 from the UBS Election Watch. What was the basis for this honorarium? If you delivered a speech, please provide a copy or a link.

Answer 56: A panel discussion and Q&A with Rep. Paul Ryan at a UBS conference. There does not appear to be a video or transcript, and because I usually speak extemporaneously, I do not have prepared remarks. Here is some information about the event here: https://www.ubs.com/global/en/wealth-management/marketnews/home/article.1502831.html.

Question 57: With respect to Chatham University, you disclosed that you received an $18,000 honorarium in 2020. What was the basis for this honorarium? If you delivered a speech, please provide a copy or a link.

Answer 57: A panel discussion and Q&A with Gov. Susanna Martinez at Chatham University. There does not appear to be a video or transcript, and because I usually speak extemporaneously, I do not have prepared remarks. Here is some information about the event: https://www.chatham.edu/pcwp/education/hillman/.

Question 58: With respect to the JF Maddox Foundation, you disclosed that you received an $18,000 honorarium in 2020. What was the basis for this honorarium? If you delivered a speech, please provide a copy or a link.

Answer 58: A panel discussion and Q&A with Karl Rove at the JF Maddox Foundation. There does not appear to be a video or transcript, and because I usually speak extemporaneously, I do not have prepared remarks. Here is some information about the event here: https://www.jfmaddox.org/lectures/distinguished-lecture-series/.

Question 59: Please provide a copy or a link to the following speeches that you disclosed on your Committee Questionnaire: American Institute of Architects (2016); Munk Foundation (2016); Tonkin Manes Law Firm (2016); Williams College (2017); SEB (2017); and Consumers Energy (2016).

Answer 59:

- The American institute of Architects (2016): Video of the speech available here: https://vimeo.com/162730951
- The Munk Foundation (2016): Debate with Rep. Newt Gingrich, Laura Ingram, and Robert Reich. Video available here: https://www.facebook.com/munkdebates/videos/munk-debate-on-the-us-election/1291593174186516/
- Torkin Manes Law Firm (2016): Q&A with a moderator. There does not appear to be a video or a transcript.
- Williams College (2017) I was part of a bipartisan panel with Former Senator Scott Brown. Video available here: https://www.youtube.com/watch?v=D8zDLS6hxFA
- SEB (2017): There does not appear to be a video or transcript of the speech, but here find a link to the speech but here is a link to the slides I used as the basis of my remarks: https://prezi.com/zyimstsmo-cp/silicon-valley-automation-us-politics/?token=1724987852669c628e5289e21178b5ea8c0826d0e1a93b33ec992123bd7f9df2
- Consumers Energy (2016): this was a speech to employees. There does not appear to be a video or transcript, and because I usually speak extemporaneously, I do not have prepared remarks.

Questions from Senator Ron Wyden

Question 1: Oregon State University is currently working with D-O-E's Water Power Technologies Office to construct a wave energy testing facility off the coast of Newport, Oregon to help industry develop commercially-viable marine energy technology. The Omnibus included my bill, the Marine Energy Research and Development Act, to pave the way for further development of Marine Energy at D-O-E. To date, there has

been strong leadership at the Water Power Technologies Office for marine energy and Oregon State's project specifically.

Can we count on your support for additional marine energy investments in the future?

> **Answer 1**: I am a strong proponent of marine energy as a potential emissions-free energy source. If confirmed as Secretary, I look forward to learning more about the Department's efforts in this area and to working with you and your office on this issue.

Question 2: As I mentioned in the hearing, billions of dollars have been spent at Hanford on building technology to turn highly toxic nuclear waste into solid material that can be stored safely, but not a single ounce of waste has been treated yet. The ongoing failures to address the issues have put workers health and safety at significant risk.

How would you increase transparency with respect to worker safety so that we don't have to rely solely on whistleblowers for information?

> **Answer 2**: While the Department should foster an environment where whistleblowers are free from the threat of retaliation, I agree with you that we should not solely rely on whistleblowers for information. That's why if confirmed as Secretary, I will continue, and improve upon, efforts to strengthen programs such as the Department's Employee Concerns Program and the Office of the Ombudsman, among other potential options.

Question 3: Just last month, DOE was among the agencies that confirmed that they were breached as part of a hacking campaign, which the intelligence community has attributed to hackers that were "likely Russian in origin." I am conducting an investigation to find out why the billions of dollars the government has spent on cybersecurity didn't prevent this hack.

Will you commit to making sure that the department fully briefs my staff on this and other cybersecurity matters?

> **Answer 3**: Yes.

Question 4: Energy efficiency is viewed by many as the 'first fuel', the most cost-effective approach to reduce societal carbon emissions. At the same time there is a strong push to electrify everything that can connect to an electric grid where the electrons are generated from renewable sources. Information and communications technology (ICT) and digital technologies generally can play a significant role in advancing both efficiency and electrification.

What role do you see DOE's Research, Development, Demonstration and Deployment (RDD&D) programs playing in helping advance innovation and market penetration of energy efficiency and power conservation technologies?

Answer 4: DOE's Research, Development, Demonstration and Deployment (RDD&D) programs, which include emerging technologies like AI, Quantum Information Science, and High-Performance Computing, are crucial for US competitiveness. These technologies rely on continual advances in scientific R&D. The Department of Energy plays a critical role in this ecosystem given its management of the national labs. If confirmed as Secretary, I will review these RDD&D programs and consider potential improvements based upon those review so that they can continue to help ensure US competitiveness.

Question 5: Emerging technologies like AI. Quantum Information Science, and High-Performance Computing are crucial for US competitiveness. These technologies rely on continual advances in scientific R&D. The Department of Energy plays a critical role in this ecosystem given its management of the national labs.

As Secretary, how do you plan to ensure the national labs have the resources and direction they need to drive advances in next-generation computing technologies?

Answer 5: In response to the 2015 National Strategic Computing Initiative, the Department established the Exascale Computing Initiative (ECI), comprised of six DOE national laboratories, to deliver an exascale ecosystem in the mid-2020s. ECI remains a high priority for the Department because of its efforts to combine AI with large scale simulations to design energy efficient wind turbines and safer small modular reactors, develop qualifiable metal parts for use in additive manufacturing, identify new materials and develop accurate earth systems models. Additionally, the Office of Science's Basic Energy Research (BES) and Advanced Scientific Computing Research (ASCR) programs have held Basic Energy Research Needs (BRN) workshops to gather community input to identify priority research directions for basic research programs and to provide direction to the national labs, including for ECI.

How do you envision partnering with industry to ensure that the research the labs conduct finds its way to meaningful advancements in society as a whole?

Answer 5: If confirmed, I plan to build upon the Department's prior successful efforts of partnering with industry. For example, it is my understanding that within the Office of Science, the Advanced Scientific Computing Research (ASCR) program's partnerships with industry have been a critical component of developing U.S. leadership in high performance computing (HPC). The outcomes of these investments have been realized in the Oak Ridge Leadership Computing Facility's Summit supercomputer and are evident in the planned exascale systems. These investments benefit the Department's programs and the broader community of research -- Office of Science HPC facilities have been used to enable advances in the safety and performance of nuclear power plants, accelerate advances in drug development, and explore neurodegenerative diseases. ASCR also partners with small business through the Small Business Innovative Research (SBIR) program to ensure that open software developed at the laboratories will be used to benefit a larger research community.

Question 6: Energy Storage is a promising technology sector that could serve as a rising tide to complement other technologies such as renewable generation. Energy storage can also serve other important roles such as modulating frequency of power grids and boosting resilience in places where energy infrastructure is aging.

Will you work with my office and others to advance the maturity, lower the cost, and streamline the deployment of energy storage solutions to make deep cuts to emissions and bolster grid stability and resilience?

Do you plan to continue the DOE "Energy Storage Grand Challenge" initiated by your predecessors? What support or programmatic changes do you see as necessary to take this technology from development to mainstream?

Answer 6: If confirmed as Secretary, I commit to working with you and your office to explore how to better and more efficiently and effectively advance and streamline the deployment of energy storage systems. I look forward to supporting the Department's grand challenges, including the Energy Storage Grand Challenge, and will work with you and your office on potential improvements going forward.

Questions from Senator James E. Risch

Question 1: These are exciting times for nuclear. We are on the forefront of making advanced nuclear reactors a reality, powering missions to Mars and beyond with nuclear energy, and developing microreactors to support the Department of Defense. Nuclear currently provides more than half of the nation's carbon-free electricity – my understanding is that your home state of Michigan generates about one-quarter of its energy from nuclear power.

The new administration's goals for reducing carbon emissions will require substantial growth of nuclear energy. If we are to achieve these goals, it is critical that the INL has the resources it needs to provide the R&D to support these efforts. Will you commit to working with me to ensure that there's a robust nuclear R&D budget for the Office of Nuclear Energy and the INL during your tenure?

Answer 1: Yes. If confirmed as Secretary, I commit to working with you and Congressional partners to ensure an adequate budget for nuclear energy R&D activities.

Question 2: The INL site is storing a range of spent fuel, including defense-related spent fuel as well as commercial and research fuel from domestic and foreign reactors. In 1995, Idaho and the DOE entered into a settlement agreement that established a timeline for DOE to treat and remove legacy waste from the state. I want to stress the importance of these cleanup activities at the Lab and encourage you to keep your foot on the accelerator to get this cleanup done – getting it done is good for Idaho, DOE and the future of nuclear energy. As you work with DOE's Environmental Management program, can you commit to prioritizing resources to continue and accelerate the cleanup mission at the INL?

Answer 2: I understand the importance of continuing the Department's legacy cleanup activities at INL. If confirmed as Secretary, I commit to working with you and your staff to help ensure the cleanup of INL is conducted in a safe, effective and cost-efficient manner.

Question 3: The INL has long been the lead nuclear laboratory, but over the past several years it has also taken the spot as one of the lead cybersecurity laboratories. If you are familiar with the Cyberspace Solarium Commission, led by my friend Senator King, the Idaho National Lab was the only lab called out by name in the Commission's report for its work in this space. DOE is the sector-specific agency for cybersecurity for energy industrial control systems and as Secretary you play an important role in ensuring the safety and security of our nation's electric grid. Our energy critical infrastructure continues to be a high-value target for bad cyber actors. What are your plans to ensure DOE continues to play a leading role in protecting our nation's critical energy infrastructure?

Answer 3: It is my understanding that the Department supports the findings of the Cyberspace Solarium Commission and appreciates the Commission's success in initiating many of its key cyber recommendations in the Fiscal Year 2021 National Defense Authorization Act. If confirmed, I will continue the successful partnership with INL to help increase cybersecurity for the energy sector. I will also work to ensure that the Department continues its leadership role over cybersecurity for the energy sector.

Question 4: On January 20, 2021, as part of his Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Change Crisis, President Biden suspended for 90 days Executive Order 13920 (Securing the United States Bulk-Power System) and ordered you, if you are confirmed, to consider jointly with the Director of OMB whether to recommend that a replacement order be issued. I would ask you to undertake this expeditiously.

Along with my colleague Senator King and eight other senators, I urged the former FERC chairman to consider a ban on equipment, such as solar inverters, made by Huawei from being used on our electricity grid just as the company's products have been banned from our telecommunications network, given its links to the Chinese Communist party, including its intelligence services. I have attached a copy of that letter. The use of these products on our electric grid leaves our infrastructure vulnerable to foreign surveillance and interference. Do I have your commitment that you will examine and take all actions necessary to eliminate the threat that equipment and systems made by Chinese state-owned, state-controlled companies like Huawei pose to our power system?

Answer 4: I understand the concern about the potential vulnerabilities posed by relying on technology associated with a foreign competitor's government. While I will have to be briefed on this particular issue further, if confirmed, I will work to protect the Department and the Nation's power grid against all such vulnerabilities.

Question 5: Last year, I authored legislation with Senator Manchin that was enacted last month as a part of the energy package. The bill requires DOE to formally establish a program for the development of integrated energy systems. The Offices of Nuclear Energy, Energy Efficiency and Renewable Energy, and Fossil Energy are collaborating to support a program that focuses on the integration of nuclear energy with renewables, fossil energy, and other potential applications. Will you commit to continuing the good work that has started at DOE and follow the law to establish this program and accelerate the development of integrated energy systems?

Answer 5: Yes.

Question 6: One area of agreement between the Obama and Trump administrations was on the importance of civil nuclear technology exports as a tool for creating jobs, promoting our safety and nonproliferation goals, and sustaining our global influence. This has become increasingly important as Russia and China have sought to dominate global nuclear energy markets, because they know that selling a nuclear reactor to another nation begins what can be a centuries-long relationship encompassing the exchange of technologies, equipment, and political influence. As Secretary of Energy, you would have an important role in both the promotion and control of nuclear energy exports. Do you commit to continuing longstanding efforts to help U.S. firms compete with the state-owned Russian and Chinese nuclear energy exporters?

Answer 6: Yes, if confirmed as Secretary, I commit to supporting a whole-of-government approach to advancing domestic nuclear technologies in the global marketplace while supporting U.S. nonproliferation objectives.

Question 7: INL is home to many unique capabilities, but one that I want to call your attention to is the Advanced Test Reactor. The ATR entered operation on the desert site of INL in 1969 and provides a unique capability for testing and evaluating materials and fuels for our nation's nuclear Navy, as well as providing important capabilities for the commercial fleet, the NNSA, and for medical isotope production. The operations at ATR are critical to our national security, and at over 50 years old it is appropriate to explore if it is time to replace the capabilities that ATR provides so that we can prepare for the future.

Over the past few years, at the direction of DOE and Naval Reactors, INL and the Naval Nuclear Laboratory have studied and presented a business case for extending our nation's strategic thermal irradiation capabilities provided by ATR out to 2085.

Should you be confirmed, I would encourage you to meet with Admiral Caldwell and discuss the best path forward to ensure the unique and valuable capabilities of ATR are available for our nuclear Navy in the coming decades. I look forward to your support for maintaining these important capabilities. Will you commit to working with me on this?

Answer 7: Yes. If confirmed as Secretary, I look forward to learning more about the ATR and the role it plays in supporting the U.S. Navy and working with you and your staff on this issue.

Question 8: The Department of Energy and National Labs contain the most cutting edge research and development capabilities in the world. It is important that DOE develops new capabilities so we can continue to support our country's innovators. One such program is the Versatile Test Reactor. This specialized fast research reactor can provide a capability we have lacked since the 1990s, and is a critical part of the government's efforts to develop new nuclear technologies. The VTR will operate as an open-access user facility in the DOE national lab system, facilitating academic, public, and private research. Due to its unique capabilities, the VTR could also support our allies. Currently, the R&D work this asset would facilitate is only available for civilian research in Russia. The Energy Act of 2020 authorized the Versatile Test Reactor, but the project currently is not on track to be successful.

a. Congress has asked the Department to explore partnerships with private industry and internationally to make the VTR successful, what will you do on that front?

Answer 8a: If confirmed as Secretary, I will work to ensure DOE builds upon the mechanisms of the Versatile Test Reactor Project Team has established. This includes use of intellectual property and cost-share contributions from the US nuclear industry, as well as capitalizing on their decades of reactor design and construction experience. I also am aware that the Department has signed international collaboration agreements that will facilitate the exchange of technical information and lessons learned.

b. What actions will you take to ensure that VTR, other major projects at DOE, and the clean energy demonstration projects included in the Energy Act are successful?

Answer 8b: If confirmed as Secretary, I will work closely with Congress and the Department to help ensure that these projects are successful.

Question 9: Since 2013, the Department of Energy's Small Modular Reactor Program has supported programmatic, cost-shared funding with private sector companies to advance the development and deployment of first-of-its-kind advanced reactors. This program is working: In 2020, the NuScale Power reactor became the first SMR technology to complete the Nuclear Regulatory Commission's (NRC) rigorous technical review process. Last year DOE awarded a cost-shared grant to the Utah Associated Municipal Power Systems to partially fund the construction of the first NuScale SMR at DOE's Idaho National Laboratory. If this and other planned advanced SMR demonstrations are successful, the U.S. will overtake China and Russia's nuclear ambitions to provide international markets with U.S. origin nuclear technology. These projects will require a sustained funding commitment throughout this decade. I hope you will build on the Department's successful work with the NuScale project and other advanced reactor demonstrations. Will you commit to build upon the successful work with the NuScale project and other advanced reactor demonstrations, if confirmed?

Answer 9: If confirmed as Secretary, I look forward to learning more about the Department's efforts to support the development of small modular reactors and other advanced reactor technologies and to working with you and your staff on this issue.

Question 10: Our nation's 94 operating nuclear reactors provide about 20% of our nation's electricity and more than half of our carbon-free electricity. This year, five reactors, or 5.1 GW of firm carbon-free electricity capacity, are slated to come offline. The loss of these plants, and additional plants that have announced premature retirement this decade, would significantly set back any deep emission reduction effort. In addition, recent premature nuclear plant closures have also resulted in increased emissions as their electricity is primarily replaced by low-cost natural gas, not renewable energy. How can the DOE continue supporting our existing nuclear plants to decrease costs while maintaining safety so they do not prematurely retire?

Answer 10: I am aware that DOE is currently pursuing several research, development, and demonstration pathways to support existing U.S. nuclear power plants to ensure their continued efficient operation, and support reduced U.S. emissions through plant modernization, risk informed safety analysis, physical security, and advanced materials research. If confirmed as Secretary, I will review these initiatives, and other DOE efforts, to ensure the continued efficient operation of the U.S. nuclear power fleet.

Question 11: The Idaho National Laboratory's Energy Storage and Advanced Transportation research teams are helping to build the future of advanced vehicle technologies. INL tests performance and predicts the impacts of advanced vehicle infrastructure in different applications and environments. One example of the Lab's robust capabilities is the full scale power grid on site which is used to test the connectivity between EVs and the grid at scale. The research includes high-power EV charging grid interaction and cyber-physical security.

a. How will your history working with advanced vehicles and industry as governor inform your role as Secretary and how will you work with the DOE laboratories, such as INL, to continue this important research and build public-private partnerships?

Answer 11a: In my experience as Governor and working with the automotive industry, achieving our ambitious goals for a clean, sustainable, and equitable transportation system will require strong public-private partnerships, close coordination between Federal agencies, and collaboration between all levels of government at the Federal, state, and local levels. If confirmed as Secretary, I will work to ensure that DOE's Energy Efficiency and Renewable Energy offices will build upon long-standing industry partnerships.

b. How do you see the Labs helping to design and achieve the aggressive infrastructure goal of deploying 500,000 EV charging stations by 2030?

Answer 11b: It is my understanding that DOE's Clean Cities Program is well positioned to help achieve the President's goal of deploying 500,000 EV charging stations by 2030. If confirmed as Secretary, I look forward to learning more about this program and how it can help local communities and provide guidance on how to adapt solutions that work for each community, including disadvantaged and underserved communities.

c. Do you see a role for the Labs to use machine learning and artificial intelligence to accelerate the validation of new battery and energy storage technologies?

Answer 11c: I am aware that DOE is a leader in machine learning and this technology will be critical to accelerate R&D and validation of new battery and energy storage technologies and the integration into our existing transportation and energy system. If confirmed as Secretary, I will work to ensure DOE continues its strong role in this area. I am aware that DOE has recently accelerated the use of machine learning and other high-performance computing tools in the

development of next-generation battery technology and manufacturing to bring down the cost of batteries, improve their performance and reduce the use of critical materials

Question 12: The Bonneville Power Administration (BPA) plays a pivotal role is providing affordable and reliable electricity to communities in Idaho and the Pacific Northwest. PMA power rates recover all costs related to the construction, generation, and delivery of this power with interest. In annual budget submissions to Congress, –many previous presidential administrations have made repeated attempts to divest the transmission assets of the PMAs and move to market rates. These proposals are misguided and would lead to higher electricity bills for my constituents.

a. Will you commit to engaging with the Office of Management and Budget to ensure that misguided proposals like these are not included in future budget submissions or other proposals?

Answer 12a: If confirmed as Secretary I look forward to working with OMB to ensure that BPA's budget proposals provide the agency the resources it needs to continue its important mission.

b. As a follow-up, will you commit to speaking with me and my colleagues from the Pacific Northwest before pursuing any legislative or administrative actions that could change fundamental BPA operations?

Answer 12b: Yes, I believe that its important the Department engages its congressional partners before advancing proposals that could fundamentally change the operations of the Bonneville Power Administration which provides low-cost electricity supplies to ratepayers in portions of eight states in the West and Pacific Northwest.

Question 13: Historically, the Bonneville Power Administration has reported directly to the Deputy Secretary. The previous presidential administration altered the arrangement, with BPA reporting to an Assistant Secretary. I have heard from customers and other stakeholders that this resulted in significant delays in approval of BPA actions and had the interests of Northwest ratepayers represented at a lower level in inter-agency discussions on key issues. BPA is more than an agency within the Department; it is an operating utility that impacts the economic well-being of individuals and businesses throughout the Northwest. The lack of quick Department approvals or underrepresentation can have a dramatic impact. Will you restore the historic organizational structure with BPA reporting to the Deputy Secretary?

Answer 13: I understand the unique nature of the power marketing administrations and their importance to the regions they serve. If confirmed, I plan to do a review of the organizational structure and make

changes as necessary to improve the function of the Department. I look forward to working with you to make the PMAs as effective as possible.

Question 14: Hydropower is incredibly important to Idaho, providing the majority of our state's energy needs. Do you agree hydropower is a clean and renewable resource?

Answer 14: Yes.

Question 15: At the front end of the manufacturing supply chain for everything from energy infrastructure to electric vehicle and battery storage components, demand for metals and minerals will continue grow significantly. Currently, much of this demand is satisfied by foreign-sourced materials, many of which come from China. Included in the recently passed 2020 omnibus legislation were several provisions directing the Department of Energy to ensure the long-term, secure, and sustainable domestic supply of critical materials and to support critical material supply chain activities from extraction to separation and processing.

a. Can you please describe your plan to fulfill these requirements?

Answer 15a: I believe the Department is a leader in addressing critical material supply chain challenges through investments in its three-pronged strategy: Diversifying Supply Chains, Developing Substitutes, and Improving Reuse and Recycling. The critical material provisions in the *Energy Act of 2020* will allow DOE to continue to build on its expertise. Through the Office of Energy Efficiency and Renewable Energy, the Department will leverage the Critical Materials Institute to continue essential R&D on recycling, alternatives, and diversifying supply across critical material supply chains.

Question 16: Metals and minerals are the key to clean energy technologies and DOE has taken a lead role helping to support advancements through research and development projects.

a. Please discuss your plans to continue supporting these priorities and initiatives such as the agency's Critical Minerals Institute or the Office of Fossil Energy's Division of Mineral Sustainability.

Answer 16a: If confirmed as Secretary, I will work to ensure that DOE support in these areas will continue. More production is expected, especially in the area of critical and rare earth minerals, with increases expected for batteries, photovoltaics, and catalysts. It will be important for DOE to engage with DOI, USGS, state stakeholders, and NGOs. In addition, there will be

efforts made that will enable sustainable production. FE and ARPA-E have been working on programs associated with sustainable mining approaches that couple to CO2 sequestration.

Question 17: The Department's nuclear weapons enterprise has long been underfunded and undervalued. Meanwhile, Russia and China have modernized their nuclear weapons enterprises and improved their capability to produce and sustain their nuclear weapons stockpiles. In recent years, the Department has invested in the U.S. enterprise, but sustained and even greater investments are needed to overcome decades of neglect. **Do you commit to ensure appropriate increases are approved and sustained to modernize the nuclear weapons enterprise?**

Answer 17: Yes.

Question 18: In 2014, Congress passed the U.S.-Israel Strategic Partnership Act authorizing increased cooperation in energy with our leading ally in the Middle East. The legislation led to the creation of a U.S.-Israel Center of Excellence in Energy and Water. This has provided a platform for the two countries to collaborate on energy and water issues. Additionally, the U.S.-Israel Energy Cooperation Program, managed by the Department of Energy, has set the stage for long-term strategic cooperation in the development of new energy technologies. This program represents one of several ways for our country to continue – and deepen – its energy relationship with Israel.

a. To what extent will the enhancement of our energy relationship with Israel be a priority if you're confirmed?

Answer 18a: Israel remains one of our most important allies in the region and is playing a significant role in the development of energy resources in the Eastern Mediterranean. If confirmed as Secretary, I will continue to strengthen our relationship with Israel through continued engagement in the variety of programs we have created. At the same time, DOE will do a systematic review of all of our international collaboration programs to ensure that they are working well, are delivering goods in the interest of both parties, and are consistent with the overall foreign policy, energy, and climate objectives of the Biden-Harris administration. In addition, I will seek to support the continued integration of Israel throughout the region using energy collaboration as a basis for broader regional cooperation.

b. What more can be done to strengthen our partnership with Israel in energy cooperation?

Answer 18b: The Department of Energy has a long history of strong and beneficial cooperation and partnership with Israel on shared energy research, and is always seeking to deepen and

strengthen our relationships with our international partners, including Israel. If confirmed as Secretary, I will work to identify future research and development opportunities that are beneficial to both countries and further enhance that relationship.

c. In recent years, the United States has helped foster the growing energy relationship in the Eastern Mediterranean between Israel, Greece, and Cyprus. If confirmed, will you continue efforts to foster and expand this relationship?

Answer 18c: Yes. Continued support for the energy security goals of Greece, Cyprus, and Israel will be an important part of the Department's engagement in the Eastern Mediterranean, and establishment of the Eastern Mediterranean Energy Center based in the United States will serve to reinforce the priority of these relationships.

Question 19: The protection of energy and water systems from cyberattack has become a high-profile concern for all nations, including our own. Israel's leadership in the development of cyber technologies, combined with its real-world expertise defending its critical infrastructure against attack has made this a large focus of the Israeli government, and provides us with a natural ally and partner.

a. What are your thoughts on incorporating the protection of critical infrastructure into the U.S.-Israel energy dialogue?

Answer 19a: The U.S.-Israel energy dialog is a valuable platform for collaboration and cooperation across the spectrum of energy issues ranging from new technologies for renewable energy production and distribution to safeguarding the energy infrastructure that serves as the backbone of our energy systems. If confirmed as Secretary, I will work to ensure that DOE will continue to seek ways to work with Israel on a number of energy security issues including critical energy infrastructure protection, both bilaterally and as part of broader interagency engagements.

Question 20: President Biden has made clear his desire to return to the 2015 Iran nuclear agreement if Iran comes back into compliance, and only then negotiate a follow-on agreement. I am highly skeptical Iran will ever accept an agreement that truly addresses our concerns with its nuclear program, ballistic missiles, and regional aggression.

a. Please describe the threat you see today from Iran.

Answer 20a: As you note, Iran poses a number of threats to our national security, including nuclear ambitions, ballistic missiles, and regional aggression.

b. In the negotiations leading to the Joint Comprehensive Plan of Action (JCPOA), then-Energy Secretary Ernest Moniz played a key role in the talks. What role do you envision for yourself and the Department in future talks with Iran?

Answer 20b: The Department of Energy's National Nuclear Security Agency is the foremost center of work on nuclear non-proliferation, drawing on the experience of decades of safeguarding against the spread of nuclear weapons. The NNSA laboratories have unique experience at analyzing the threats and supporting any diplomatic efforts to contain Iran's nuclear program. While I will not have the same role in such negotiations as did Secretary Moniz because of his unique nuclear expertise, if confirmed as Secretary of Energy, I will assist such efforts in any way that the Department is asked, including ensuring that DOE's technical capabilities and expertise is available to any such efforts.

c. To the extent the Energy Department is engaged in talks with Iran, will you ensure the Committee is kept fully apprised of that engagement, as required by law?

Answer 20c: Yes.

d. The National Nuclear Security Administration, within the Energy Department, played a key role in the 2015 nuclear deal. The agency provided key technical expertise in evaluating the deal. However, there were some reports that the NNSA felt pressure to align its analysis to the policy wishes of the Obama administration. If confirmed, will you ensure the NNSA provides accurate information and analysis and in no way is pressured to conform its views to any desired policy outcome?

Answer 20d: The Department of Energy's core strength is its national laboratory system, and if they are not free to conduct scientific and technical analysis free of interference, it undermines the Department as a whole. If confirmed, I will ensure that the DOE—including NNSA—follows a high standard of scientific integrity.

Question 21: With the introduction of mass timber in the nation's preeminent model building code, wood is now approved as a structural material for buildings up to 18 stories tall, a height that encompasses nearly all buildings in the U.S. Mass timber also has a very low carbon footprint, since harvested wood actually stores carbon – and here in the U.S., land is replanted one-for-one any time trees are harvested. Despite access to the

technology and abundant timber, the United States has only limited manufacturing capability in the mass timber space. Given the current jobs crisis, particularly in rural areas where mass timber plants would likely be located, increasing the ability to put mass timber to use here at home in the U.S. seems like an obvious opportunity. The Department of Energy plays an important role in energy efficiency.

a. If confirmed as Secretary of Energy, how do you think you would be able to drive the growth in manufacturing of low-carbon materials like mass timber?

Answer 21a: I am aware that as part of the Advanced Buildings Construction Initiative (ABC), the Department is working with public and private sector partners on mass timber in both new construction and in the renovation of existing buildings. Advanced materials like cross laminated timber can dramatically reduce the building sector's carbon footprint. If confirmed as Secretary, I would continue to support work on this innovative, exciting, job creating technology.

Question 22: Vladimir Kara-Murza, a prominent opposition activist in Russia, nearly died in 2015 and again in 2017 from suspected poisonings in Russia. Following both illnesses, samples of his blood were accepted for testing by the FBI, and tests may have been performed in part by Department of Energy national labs. However, the results of those tests and the FBI's assessment of the cause of Mr. Kara-Murza's apparent poisonings have been withheld from both Congress and Mr. Kara-Murza himself. In July 2018, I understand that Mr. Kara-Murza submitted a Freedom of Information Act request to the FBI (FBI FOIPA Request No. 1410820-000) for documents relating to his poisonings, including the results of tests performed by U.S. government agencies.

a. Has the Department of Energy, or any element of the Department, including one or more national labs, received from the FBI or the Department of Justice a referral of documents responsive to Mr. Kara-Murza's FOIA request?

Answer 22a: As I understand it, the Department has received a referral of documents by the FBI in this matter.

b. If such a referral has been received,

i. What is the estimated date for completion of the review by the Department?

Answer 22bi: If confirmed as Secretary, I will take steps to ensure that the review by the Department is completed as soon as possible.

ii. Do you commit to expediting the release of as many responsive documents as possible to Mr. Kara-Murza, as soon as possible?

Answer 22bii: If confirmed as Secretary, I commit that the Department will cooperate fully with the FBI regarding their release of any documents to Mr. Kara-Murza.

c. Does the Department of Energy, or any element of the Department, including one or more national labs, have additional documents, records, evidence, or other materials relating to the poisonings of Mr. Kara-Murza, and do you commit to releasing them?

Answer 22c: I am not aware of any additional documents, records, evidence, or other materials, regarding this matter, but if confirmed to be Secretary, I will follow up with the appropriate Departmental elements.

d. Will you commit to briefing me and my staff on the Department's efforts surrounding these incidents, including any tests that may have been conducted and their results?

Answer 22d: I commit to following up with you about this matter.

Questions from Senator Maria Cantwell

Question 1: HANFORD: TRI-PARTY AGREEMENT COMPLIANCE DATA
According to the Tri-Party Agreement, DOE is required to identify its compliance-level funding requirements.

- Can you commit to providing me and the state of Washington the Tri-Party agreement the funding compliance numbers for FY 2022 as soon as they are finalized?

Answer 1: Yes, if confirmed as Secretary, we will provide you and the state of WA the compliance-level funding requirements for FY22.

Question 2: HANFORD: MANHATTAN PROJECT NATIONAL HISTORICAL PARK
The Manhattan Project National Historical Park is a unique partnership between DOE and the National Park Service at three sites across the country, including at Hanford in Washington state. Part of the Department of Energy's responsibility for the Park is to maintain the infrastructure at key facilities.

- Would you please share your thoughts on DOE's role in supporting the Manhattan Project National Historical Park, including the need to maintain facilities like the roof of the historic B Reactor which has deteriorated to the point where it could impact public tours in the near future?

Answer 2: I strongly support the Manhattan Project National Historical Park and, if confirmed as Secretary, DOE will continue to fulfill its obligations outlined in the 2015 NDAA and the MOA between DOE and DOI particularly in the areas of facilities maintenance, access, and safety.

Question 3: NATIONAL NUCLEAR SECURITY ADMINISTRATION WORKFORCE
Ensuring a diverse workforce as the National Nuclear Security Administration is necessary to build the capable and highly skilled workforce we need maintain the Nation's nuclear deterrent.

- Will you work on ensuring a diverse workforce within the NNSA, with a particular focus on increasing diversity and inclusivity in the NNSA's security forces?

Answer 3: Yes.

Question 4: DEFENSE NUCLEAR FACILITY SAFETY BOARD
The Defense Nuclear Facility Safety Board has provided an independent, essential role in ensuring the safety of our nuclear security and environmental management workers for more than three decades, including at the Hanford site.

- If confirmed, do you commit to work constructively and cooperatively with the Board and respect its independence and advice on all manner of safety issues within the complex?

Answer 4: Yes, if confirmed as Secretary I look forward to working closely with the Defense Nuclear Facilities Safety Board and advancing conversations on an MOU between the Department and DNFSB.

Question 5: CLIMATE CHANGE
I share the concerns you expressed about the looming climate crisis and agree that products that reduce carbon emissions represent a multi-trillion market opportunity.

- Do you believe that an economy wide price on carbon, applied upstream where fossil fuels enter the economy, is the most efficient mechanism to decrease carbon emissions at the necessary scale and speed?

Answer 5c: I believe it is critical that we accurately understand all the costs of carbon pollution on our economy. There are many externalities that are not currently captured in our existing markets, and these hidden costs harm communities across the country. Regardless of whether there's a price on carbon or not, the Department of Energy's mission is—through RD&D—to

drive down the cost of emissions-free technologies so that they are competitive with any other energy source, and will lower the cost for consumers while diversifying our energy mix. If confirmed, I will continue to push the Department's R&D to bring down the cost of energy technologies.

- Do you believe that a predictable, market-based carbon price will incentivize the markets to reduce carbon emissions faster and more efficiently than could be achieved through direct regulation of emissions within specific industry sectors?

Answer 5b: History shows us that when we factor-in the externality costs of pollutants, market forces respond. More than ever, private sector players are recognizing not only the existential threat that climate change poses to their businesses and the nation, but also the incredible opportunity to take decisive action on climate change. Regardless of whether there's a price on carbon or not, the Department of Energy's mission is—through RD&D—to drive down the cost of emissions-free technologies so that they are competitive with any other energy source, and will lower the cost for consumers while diversifying our energy mix. If confirmed, I will continue to push the Department's R&D to bring down the cost of energy technologies.

Question 6: POWER MARKETING ADMINISTRATIONS (PMAs)
Recent Administrations have proposed selling the PMAs, changing the cost-based rate structure, and otherwise deviating from the "beneficiary pays" principle that has governed the PMAs' operations well for decades. Bipartisan majorities in Congress have rejected these ill-conceived proposals.

- Will you commit to working with Congress and customers to ensure the PMAs can continue their statutory mission to provide cost-based power?

Answer 6: Yes.

Question 7: PMA REPORTING STRUCTURE
Historically PMAs have reported directly to the Deputy Secretary of Energy, a structure that proved beneficial for both DOE and BPA as it preserves BPA's operating and authority independence while the Department maintains an oversight role at the highest level. The Trump Administration modified that longstanding reporting structure so that PMA's reported to an Assistant Secretary, which resulted in new administrative burdens that translated to additional costs to many ratepayers in my state.

- Will you assess the current reporting structure and consider restoring having PMAs report to the Deputy Secretary or the Under Secretary for Science and Energy?

Answer 7: I understand the unique nature of the power marketing administrations and their importance to the regions they serve. If confirmed, I plan to do a review of the organizational structure and make changes as necessary to improve the function of the Department. I look forward to working with you to make the PMAs as effective as possible

Question 8: COLUMBIA RIVER TREATY
As you know, the United States is currently renegotiating the Columbia River Treaty with Canada. This Treaty is absolutely critical to power operations, flood control, and conservation in the Pacific Northwest. Through Bonneville Power Administration's role as Chair of the negotiating entity under the Treaty and technical expert, the Department of Energy is critical to moving negotiations forward.

- Can you commit to working closely with the Pacific Northwest delegation as the negotiations move forward?

  Answer 8a: Yes.

- Can you also commit to supporting the Bonneville Power Administration's role as the expert both in the Treaty and in the needs of the Pacific Northwest throughout the negotiation process?

  Answer 8b: Yes.

Questions from Senator Steve Daines

Question 1: Governor Granholm, if confirmed, do you commit to be source neutral or will you prioritize wind and solar over baseload sources like hydro, coal, or nuclear?

Answer 1: To reach our net zero emissions goals, the United States will need to employ technology solutions for all fuel sources. If confirmed, I fully plan to commit resources to carbon management across the fuel and technology spectrum. I am particularly excited by the opportunities for game-changing advances in carbon capture and advanced nuclear technologies in the next several years.

Question 2: Governor Granholm, Do you believe it should be the policy of the U.S. to close existing coal power plants and kill those jobs in order to lower emissions or do you believe that DOE should promote innovative technologies like carbon capture on existing plants to reduce emissions and build jobs?

Answer 2: If confirmed as Secretary I look forward to exploring CCS and CCUS opportunities for our fleet. I also look forward to supporting the scientific work being done at the DOE's National Labs and in

federally partnered projects across the country and taking that research to scale and deploying it to create jobs for Americans.

Question 3: Governor Granholm, as I noted during the hearing, Montana is home to four petroleum refineries. All four refineries qualify for the Small Refinery Exemption, which helps reduce the stress of high renewable fuel purchasing demands. Unfortunately, the 2019 and 2020 exemptions have not been granted and refineries in Montana are on the brink of closure. DOE plays a major role in the Small Refinery Exemption. If confirmed, will you work with EPA to ensure that the 2019 and 2020 exemptions for Montana are swiftly approved?

Answer 3: DOE provides a recommendation to EPA in the Small Refinery Exemption process. The determination is based on demonstrated disproportionate economic hardship to the refinery. If confirmed, I look forward to working with you on this issue.

Question 4: Governor Granholm, actions taken by government officials can have serious impacts on local communities. In Montana, we have many small communities that are built around different industries, whether that be towns built around a grain elevator with just a post office and a local bar, or a bustling town of over two thousand supported by a coal plant. Unfortunately, with a stroke of the pen a Secretary or President can completely decimate an entire community often without any thought to the jobs, livelihoods, and well-being of those communities. If confirmed, that power may rest in your hands and Montana communities may be at risk by actions you take. Will you as secretary, meet with and hear from these communities that are often overlooked when crafting national policies?

Answer 4: Yes, if confirmed as Secretary, I look forward to gaining input from Members of Congress, States, Tribes, and local communities in developing national energy policies.

Question 5: Governor Granholm, the development of a robust renewable energy program will require raw materials such as copper, silver, rare earths, iron and more. The U.S. has always been a leader in responsible mining and Montana is home to many of the raw materials needed to build renewable energy projects. If the Biden administration continues down the path of prohibiting development of natural resources on our public lands, we will be forced to continue to rely on those materials from less environmentally friendly countries. Do you believe that raw materials for renewable energy should be sourced domestically or should the U.S. continue to source these materials from China, Russia, and others?

Answer 5: Yes, I think it's important to promote responsible mineral development that will protect the environment and provide the United States a competitive advantage in producing batteries and other technologies that will enable us to advance renewable energy, and other industries supported by critical

mineral development. If confirmed as Secretary, I am eager to work with you and others to make sure that the United States has its own critical mineral supply.

Question 6: Governor Granholm, nuclear power already provides carbon-free, baseload power throughout the United States. Advancements in new nuclear technologies such as small modular reactors, and fission and fusion reactors will only increase the United States ability to provide carbon-free, baseload power to customers. Unfortunately, the United States is falling far short in the production of uranium and other elements needed to power reactors, forcing us to rely on foreign countries for our supply. From a national and energy security point, how important is it for the U.S. to increase production here at home, and what role do you see the newly created Uranium Reserve at DOE playing in preserving domestic production?

Answer 6: Nuclear energy is an important resource that provides emissions-free baseload electricity generation at competitive prices. If confirmed as Secretary, I will follow the direction provided by Congress in allocating $75 million to the creation of the Uranium Reserve in the *Fiscal Year 2021 Consolidated Appropriations Act.*

Question 7: Governor Granholm, DOE plays a major role in the research, development, and commercialization of carbon capture technology. Will you continue and expand upon the existing CCUS work at DOE? What are some of your goals for CCUS?

Answer 7: Yes. These technologies have great promise. For instance, in the areas that are difficult to decarbonize in the industrial sector: cement, steel, hydrogen production, and refining industries. They can leverage DOE's progress in this space. We will also focus on the conversion of CO2 into products. The CO2 captured will need to be managed, and both dedicated storage and conversion will be important aspects of DOE's portfolio.

Question 8: Governor Granholm, the Energy Package passed at the end of 2020 included a number of new authorities for DOE to advance carbon capture. This includes direct air capture, and industrial and fossil fuel power plant projects. What steps will you take to implement these new authorities and ensure demonstration and commercialization projects are successful?

Answer 8: I am aware that there are already steps being taken to leverage existing carbon capture facilities to include direct air capture testing. If confirmed as Secretary, I will work to ensure that DOE will continue to build on their legacy of strong partnerships with industry, government labs, and

academia to ensure successful projects when implementing new programs for carbon capture in the *Energy Act of 2020.*

Question 9: Governor Granholm, in response to questions during the hearing, you stated that you want to focus on placing new industries, jobs, and projects into states that are most affected by the transitioning of the energy economy. Do you consider Montana as one of those states?

Answer 9: Yes.

Question 10: Governor Granholm, Montana is the proud home to one-third of our nation's inter-continental ballistic missiles. Many of these are now over 50 years old. Maintaining a credible nuclear deterrent is vital to our national security, and a core mission of the Department of Energy. If confirmed, will you ensure that the Department remains focused on that mission?

Answer 10: Yes. If I am confirmed as Secretary, I will focus on three missions. First and foremost being the important responsibility of advancing the national security of the United States by ensuring the National Nuclear Security Administration has the tools and resources required to protect our nation.

Question 11: Governor Granholm, earlier this month, Congress passed the National Defense Authorization Act which requires a greater degree of cooperation between the National Nuclear Security Administration and the Pentagon to adequately fund our nuclear modernization efforts. If confirmed, will you commit to maintaining our competitive edge through a robust and credible nuclear deterrent?

Answer 11: Yes.

Question 12: Governor Granholm, over the years the Department of Energy has played a key role in the advancement of the 45Q tax credit, which helps promote carbon capture investment. Do you support the 45Q credit?

Answer 12: Yes.

Question 13: Governor Granholm, studies show that the Pacific Northwest faces near-term power shortages during peak load conditions. This means that demand will exceed supply at times when energy is needed most, such as extreme hot and cold weather. At present the integration of intermittent generation like wind and solar requires flexible capacity such as coal and natural gas resources to ramp up and down in order to maintain a reliable and stable service. The concern that supply won't meet peak demand will be further exacerbated if the Biden administration moves quickly to shut down coal and gas plants without sufficient new energy production. It is further complicated in a state like Montana where temperatures get below the operating capability of wind, the wind blows too fast or too slow due to pressure systems, and when solar is unable to operate at night when temperatures reach their lowest. Montanans are concerned that the goals of President Biden's Climate Agenda

do not take into consideration real world energy demand in states like Montana and fear the ability of utilities to deliver heat and electricity during peak load times. If confirmed, do you plan to oppose new fossil fuel generation on principal or are you willing to evaluate based on individual circumstances? Further will you commit to work with states in addressing their energy shortages, even if it means that new fossil-fuel generation may be required so that energy is available around the clock?

Answer 13: If confirmed as Secretary, DOE will work in partnership with industry, and its regulators to prioritize system reliability and resilience. Key measures include the development of advanced planning tools, energy storage, transmission, and firm generation. The research at the Department will support increased system flexibility and we will continue to work with states and industry partners to ensure energy needs are met through the development of clean energy resources and carbon capture natural gas systems.

Question 14: Governor Granholm, U.S. polysilicon has long been targeted by retaliatory tariffs by China in part due to its Made in 2025 agenda and these tariffs are threatening hundreds of high-wage manufacturing jobs in Montana and across the country. Polysilicon is an important component in critical products, such as semiconductors and batteries. What can be done to strengthen the U.S. semiconductor and battery supply chain and reduce our dependence on China for these critically important materials?

Answer 14: I agree that polysilicon is a key component in a number of critical products that I want to see manufactured here in the U.S., including batteries, semiconductors, and solar panels. I am a strong proponent of ensuring the U.S. has a robust battery supply chain. If confirmed as Secretary, I look forward to learning more about the Department's R&D efforts that are intended to support innovation to strengthen the U.S. semiconductor and battery supply chain, and will collaborate across the federal government to identify opportunities to strengthen U.S. supply chain independence.

Question 15: Governor Granholm, as you know President Biden recently signed an executive order removing a permit and effectively killing the Keystone XL Pipeline. I have also heard that the President plans to stop all new oil and gas leasing on federal lands. Both of these will have dramatic negative impacts to Montana and the nation, including the loss of thousands of jobs and billions in investments during a critical time in our economy. It also has a major impact on our energy security. If oil and gas demand in the United States remains the same, as is predicted, would you agree that if the United States is producing less oil and importing less from our Canadian allies that this will increase oil imports from the Middle East and ultimately harm the American energy independence and national security?

Answer 15: Importantly, existing leases will not be impacted by the President's executive order. In addition, expanding renewable infrastructure will add millions of clean jobs to the economy as well as contribute to energy security and independence.

Question 16: Governor Granholm, DOE recently published an assessment on the energy potential at non-powered dams in the United States. In this report, DOE estimated Montana could produce an additional 88MW of power at existing non-powered dams. As you know, hydropower is a renewable resource that provides baseload power, unlike intermittent solar and wind. It also has a far smaller physical footprint than other renewables. How can DOE work to increase hydropower in Montana and how can we use this assessment to increase hydropower throughout the U.S.?

Answer 16: I agree that hydropower is a critical part of our energy future, both as a source of clean, renewable energy and as a highly flexible resource that can help us advance other renewables like wind and solar. In addition, pumped storage hydropower accounts for 95% of all energy storage on the grid and is currently available for long-duration storage. If confirmed as Secretary, I will actively support the Department's substantial hydropower program efforts, including the newly announced Energy Transitions Initiative Partnership Program that will work directly with a number of communities in Alaska, and the continued development of new technologies and approaches that ensure hydropower facilities are environmentally sustainable and resilient to climate change.

Question 17: Governor Granholm, in 2018 the President signed the National Quantum Initiative Act (Public Law No: 115-368), which includes new authorities for DOE to work to make the U.S. leaders in Quantum Computing. Montana is home to a booming quantum industry and making sure the U.S. is a leader in this issue is very important for national security and creating jobs. If confirmed, what plans do you have to fulfill the goals set out in the National Quantum Initiative Act?

Answer 17: I am aware that since enactment of the National Quantum Initiative Act (NQI) in 2018, the Department has announced five National Quantum Information Science (QIS) Research Centers (Centers) in FY2020. The Department also has strong partnerships with both the National Science Foundation (NSF) and the National Institute for Standards and Technology (NIST), and works closely with other agencies in this area. I am aware that DOE supports the National Quantum Initiative Advisory Committee (NQIAC) to provide advice on the trends and developments in quantum information science and technology. If confirmed as Secretary, I will review DOE's quantum efforts to help best position the Department to meet the goals set out in the Act.

Question 18: Governor Granholm, over the years we have seen attempts to expand DOE's role in the local building and energy code development process. A national or top down mandate or DOE driven code development process is at odds with locally created and publicly driven process that produces specific standards for specific areas. Building and energy code in Montana, where we have long cold winters with deep snow and hot summers, are inherently different from codes in more consistent or tropical southern states. What do you believe should be the role of the federal government in the code development process?

Answer 18: I am aware that the Department is directed by the Energy Conservation and Production Act (ECPA), as amended, to provide technical assistance supporting the development by code-development bodies of model building energy code updates, as well as state implementation of building energy codes (42 USC 6836 and 6833). In recent years, the building industry, with DOE's support, has focused increasingly on compliance options that allow greater flexibility and trade-offs among consumer-friendly solutions, known as *performance*-based codes. If confirmed as Secretary, I will work to ensure that DOE maintains its technical assistance role, supporting the industry in its ongoing shift toward performance-based compliance options.

Questions from Senator Bill Cassidy

Question 1: Two of the Department's Strategic Petroleum Reserve (SPR) sites are in Louisiana. In upcoming years, the Department has to sell oil from the SPR to fulfill certain Congressional mandates leaving a significant amount of unused capacity available. I believe the Department could capitalize on this unused capacity by leasing a percentage of it back to the private sector.

Doing so would create a revenue stream to invest back in SPR maintenance and upgrades as well as reduce emissions required to build above ground storage.

What are your thoughts on leasing unused SPR capacity for the purposes I mentioned?

Answer 1a: In general, I believe the SPR is designed for emergencies and leasing could create unnecessary risk. That said, the amount of unused capacity would have to be examined. There may be an opportunity to invest back in maintenance and upgrades, which would be useful to the sites in Louisiana.

What role do you see for the SPR in the future?

Answer 1b: I see the role of the Strategic Petroleum Reserve (SPR) as one to provide the security needed when an emergency arises. Historically, significant SPR draw down has taken place in the case of emergencies – with only 3 taking place over the last decade, the most significant being the 30 million bbl in the "Arab Spring" of 2011. The other two events were in 1991 (Iraq, 17M bbl) and 2005 (Hurricane Katrina, 11M). The SPR is robust and maintained for purposes of this kind.

Question 2: Over the last three fiscal years, including FY 2021, Congress has provided funding in the annual Energy & Water Appropriations bill for the Department to utilize the North American Energy Research Alliance as a tool to improve energy research coordination between the United States, Mexico and Canada. Although the Alliance already exists and is comprised of several leading research universities in each of the three nations, the Department has, so far, not utilized the funds as Congress has intended.

Will you commit to complying with congressional intent on this issue and pursuing this effort to improve research coordination with our Nation's largest trading partners?

Answer 2: Yes. If confirmed as Secretary, I look forward to continuing to advance coordination between the United States, Mexico, and Canada to achieve our shared energy and national security goals.

Question 3: Louisiana was decimated by three major hurricanes in 2020. FEMA and the disaster assistance it provides have been tremendously helpful in putting the pieces back together. One of the areas where we need assistance is in repairing and strengthening the electric transmission system that serves not only Louisiana communities but also Department of Energy facilities and other critical national infrastructure.

Will you commit to being an advocate within the Administration for repairing and making our transmission system more resilient and support any relevant waivers that may be necessary for this?

Answer 3: Yes. If confirmed as Secretary, I look forward to working to increase the resiliency and sustainability of critical electric infrastructure.

Questions from Senator Mazie K. Hirono

Question 1: President Biden has stated his commitment to target federal investment in disadvantaged communities and to start addressing a long history of racism and economic inequality through federal programs. How will the President's commitments influence your work at DOE? How will you adjust DOE programs to ensure that its investments are advancing environmental, economic, and racial justice?

Answer 1: President Biden has made a commitment to invest at least 40% of the benefits of the response to the climate crisis in communities that have been historically disadvantaged by climate change or GHG pollution. If confirmed, I will ensure to use all of the tools at the DOE to live up to this commitment and am enthusiastic about doing so.

Question 2: In recent years, Republicans have made repeated attempts through the National Defense Authorization Act (NDAA) to increase the Department of Defense's role in setting budget priorities for the nuclear weapons program at the DOE's National Nuclear Security Administration (NNSA). I worked with Senators Manchin and Murkowski and others on the Fiscal Year 2022 NDAA to maintain DOE's budget authority over the NNSA. Do you agree with me it is imperative that the weapons program remain under civilian control at the DOE?

Answer 2: Yes, I agree that it is important for DOE to retain its authorities as it relates to the National Nuclear Security Administration and its budgetary responsibilities while also committing to maintaining coordination and transparency with our Department of Defense partners.

Question 3: Last year, there was an effort by some Republicans to resume nuclear weapons testing. This would set a dangerous example to the world and is unnecessary because NNSA's scientific experts certify the safety and security of the nuclear weapons stockpile every year. Will you commit to working with the Secretary of Defense and others in the Administration to oppose any effort to return to nuclear weapons testing?

Answer 3: I am committed to the continued support of the science-based Stockpile Stewardship Program which has enabled us to maintain confidence in the nuclear stockpile without requiring additional nuclear tests for the past 20 plus years.

Question 4: Under the previous Administration, the DOE failed to meet deadlines to update approximately 28 different appliance standards, such as for refrigerators and clothes dryers. A recent report by the Appliance Standards Awareness Project found that updates to national appliance standards could save average households hundreds of dollars in their utility bills while significantly cutting carbon pollution emissions. Will you ensure that the DOE diligently pursues these carbon and energy bill savings through its appliance standards program?

Answer 4: Yes, I will ensure that the DOE diligently pursues carbon and energy bill savings through its appliance standards program.

Question 5: The number of staff at the DOE's Office of Energy Efficiency and Renewable Energy declined during the Trump Administration, even as Congress increased funding for the office substantially. I questioned the previous leadership of DOE during budget hearings on their plans to reduce staff at EERE. I understand that

when career employees left EERE over the past four years, their positions were often left unfilled or the replacement hiring process was slowed down. Will you commit to staff the EERE and other DOE offices at a level to allow them to carry out their missions effectively?

Answer 5: Yes.

Question 6: Congress created the Department of Energy's Established Program to Stimulate Competitive Research (EPSCoR) to ensure that research opportunities are available to students and faculty in every state. With strong bipartisan support, Congress recently modernized DOE EPSCoR to better scope the program to utilize the strengths of eligible states.

a. As Secretary, will you commit to working to quickly implement the new authorities provided by Congress?

Answer 6a: The DOE Established Program to Stimulate Competitive Research (EPSCoR) is committed to realizing the goals outlined by Congress in the *Energy Act of 2020*. If confirmed as Secretary, I commit to strengthening investments in energy research for states and U.S. territories that do not historically have large federally supported academic research programs and to improving the capability of designated states and territories to conduct nationally competitive energy-related research; train new scientists and engineers; and build collaborative relationships between scientists and engineers in DOE laboratories.

b. What will you do as Secretary to ensure that students and faculty in EPSCoR states are able to participate in meaningful DOE research?

Answer 6b: EPSCoR funding opportunities focus on topics that address the breadth of the energy technology, environmental, and science missions of DOE. If confirmed as Secretary, DOE will issue, consistent with the Congressional language, biennial funding opportunities for infrastructure through the Implementation Grant program and, on alternate years, funding opportunities to enhance partnerships between EPSCoR jurisdiction institutions and DOE national laboratories through the State-National Laboratory Partnerships program.

Questions from Senator Cindy Hyde-Smith

Question 1: We have seen and heard how nuclear filtration is an essential asset to DOE. How do you envision the future of partnerships with Universities that are capable of providing a facility to promote the DOE

confinement ventilation systems and technology, which has applications in not just the energy field, but the medical, and pharmaceutical fields as well?

Answer 1: Filtration is indeed very important to our Nation. As we have seen over the past year during the COVID-19 pandemic having adequate filtration capabilities and personal protective equipment is critical to protect our front-line workers and first responders and this has been a national challenge. As of yet, the role that DOE's national laboratories and universities have played and are playing in response to the pandemic crisis is not well known and has not been broadly advertised. This is an area of potential growth that I look forward to pursuing if confirmed as Secretary.

Question 2: Multiple countries and intergovernmental organizations have declared that forest management and biomass play an essential role as part of an all-in approach to reduce dependence on fossil fuels. Gov. Granholm, what role can sustainable biomass play in our nation's overall energy strategy, and how do strong forest product markets benefit rural communities?

Answer 2: I believe that bioenergy, as part of a comprehensive sustainable transportation strategy, has significant potential in decarbonizing difficult to electrify modes of transportation, specifically aviation, marine, and long haul diesel. I also agree that healthy forests provide benefits particularly in rural communities. In addition, industries built on healthy forest management can increase a highly skilled workforce in rural communities with needs for employment in forest ecology, hydrology, and wood engineering.

Question 3: With the Administration instituting a broad moratorium on leasing and permitting activities on federal lands, tens of thousands of jobs will be negatively impacted and likely lost. Of particular concern is the impact on the oil field services industry which is still reeling from the demand collapse of the spring and summer. With few options available to retain these crews and the expertise necessary to retain the US global position as a leader in innovation, one of the few viable options the Biden administration can offer under this scenario is extensive mitigation work in reclaiming orphan and abandoned wells. Will the Administration support orphan and abandoned well legislation currently being negotiated by the Senate?

Answer 4: Orphan and abandoned wells can continue to release significant amounts of methane and other pollutants that harm public health, safety, and the environment. As you noted, these risks can be mitigated through remediation. If confirmed as Secretary, I look forward to working with you and other federal agency leaders to better understand how the technologies in the lab and in the field can be brought to bear to support this mission.

Question 4: The oil and gas industry is one of the most innovative and forward thinking of all industries in the adaptation and deployment of technology and cost effective mitigation efforts. One of the best practices for mitigation is to simply offer best in class monitoring and inspection of producing wells and orphan and abandoned wells using remote sensing technology. When numerous off the shelf technologies are combined with AI, machine learning and mesh networking technologies, combined with other steps industry has already taken, these simple measures can provide a very clear and accurate portrayal of methane emissions. What steps might the Department take to identify these best practices and promote their use and implementation to industry and other regulatory agencies?

Answer 4: I agree that advancing these efforts will help in minimizing methane emissions. There are existing programs at the Department that I intend to leverage if confirmed as Secretary.

Question 5: One of the significant challenges industry faced during the demand collapse of the spring was the lack of available storage space for product. The prior Administration wisely made storage space available to industry to alleviate short-term storage constraints. Will you commit to continue this policy of making space available to industry for short term storage needs when the markets are under pressure as they were last year?

Answer 5: If confirmed as Secretary, this is a question that I look forward to considering based on reasons for demand reduction if, and when, those reductions occurred.

Question 6: Industry broadly supports the Strategic Petroleum reserve modernization efforts and therefore supports the mandatory sales designed to fund the modernization efforts. However, the Strategic Petroleum Reserve mission should be updated to better reflect the changing status the US has gained as the world's leading producer of crude as well as its strategic mission. Do you anticipate the need for authorizing legislation to update the strategic petroleum reserve mission and authority?

Answer 6: If confirmed as Secretary, this is an issue that I look forward to discussing with the team in the Office of the Strategic Petroleum Reserve.

Question 7: One of the additional concerns industry has repeatedly expressed is the poor timing of SPR sales and the impact on markets. When significant volumes of SPR product is put to market, concern has been expressed when those sales take place when prices are low, which puts additional price pressure on the markets. We applaud the effort made by SPR to provide better outreach to industry to give indication as to when sales are planned. Do you intend to continue this practice of providing the markets notice of sales several weeks in advance?

Answer 7: If confirmed as Secretary, I will continue to work with congressional partners and professionals in the Office of the Strategic Petroleum Reserve to account for all factors in managing SPR sales.

Question 8: The Department has issued in recent weeks a particularly compelling report demonstrating the impacts that a hydraulic fracturing ban would have on national security and economic growth in the United States. Do you support the findings that DOE made in that report and do you agree that a hydraulic fracturing ban would have devastating economic impacts while significantly diminishing our geopolitical leverage and standing against Russia, Saudi Arabia, Venezuela and other competitors. Would this be a wise policy to institute a ban on this widespread industry practice?

Answer 8: President Biden has stated that this administration does not plan on instituting a ban on the industry practice of hydraulic fracturing.

Question 9: In recent years, the United States has helped foster the growing energy relationship in the Eastern Mediterranean between Israel, Greece, and Cyprus. If confirmed, will you continue efforts to foster and expand this relationship?

Answer 9: Yes.

Questions from Senator Angus S. King, Jr.

Question 1: What is your philosophy on nuclear weapons stockpile stewardship, and do you support the bi-partisan consensus of maintaining the nuclear triad and continuing critical infrastructure and warhead modernization directed by President Obama in 2010?

Answer 1: If confirmed, I will continue to support the Stockpile Stewardship Program (SSP) and its role in maintaining the nation's nuclear deterrent. The White House and Department of Defense (DoD), in its role of identifying the requirements to meet the nation's nuclear deterrent objectives, determines whether the nuclear triad represents the optimal approach to meeting those requirements. The Department of Energy will continue to meet the requirements identified by the White House and DoD and execute the warhead and infrastructure modernization programs begun under President Obama in 2010.

Question 2: President Biden has said that, subject to Iran's return to compliance, the United States will try to rejoin the Joint Comprehensive Plan of Action (JCPOA) as a starting point for follow-on negotiations with Iran

to strengthen and extend the nuclear deal's provisions. What are the key uranium and plutonium provisions you would like to see strengthened and extended, and what role do you envision for the Secretary of Energy in potential negotiations with Iran on an improved version of the JCPOA?

Answer 2: If confirmed, I look forward to working with the Administration on how best to constrain Iran's nuclear ambitions and ensuring the technical and scientific expertise of the DOE national laboratories are made available to support our nonproliferation goals and potential negotiations.

Question 3: Given the role of the Department of Energy as the Sector Specific Agency and Sector Risk Management Agency for the energy sector, what do you consider to be the greatest cyber threats to the sector that need to be addressed early in your tenure if confirmed?

Answer 3: Our nation's energy delivery infrastructure includes not just information technology (IT) but also operational technology (OT) that control real-time physical processes. Cybersecurity threats to the energy sector continue to grow, as increasing segments and components of energy systems are interconnected and managed remotely. Sophisticated nation state adversaries are targeting energy systems and demonstrating an increasing interest in cyber attacks that can result in physical damage to our energy delivery systems resulting in economic impacts and potential loss of life.

Questions from Senator Catherine Cortez Masto

Question 1: As Governor of Michigan, you focused on reviving the auto industry, in part by investing in clean energy and advanced manufacturing, including battery manufacturing. Should you be confirmed, I look forward to working with you to grow the use of zero-emission vehicles across the country in a cost-effective, equitable, and maximally beneficial way.

- **a.** What role do you see the Department of Energy (DOE) playing in accelerating the deployment of zero-emission vehicles, including medium- and heavy-duty vehicles such as school and transit buses and commercial trucks?
- **b.** Do you commit to elevating DOE to be a strong federal partner in helping our schools as they work to improve the health of their students and communities by reducing transportation emissions and investing in EV school buses?
- **c.** In your opinion, should DOE use its expertise to assist schools, especially those in disadvantaged school districts, with EV school bus deployment by providing infrastructure, vehicles, and needed technical assistance?

Answer 1: If confirmed as Secretary, I look forward to working to help accelerate the role of zero-emission vehicles across the U.S. economy. Under my leadership, DOE will:

- Continue to lead the R&D to develop batteries, motors, and charging technologies that make EVs affordable, minimize use of critical materials, and can recharge quickly. This includes both light duty vehicles and medium/heavy duty trucks.
- Work across the Federal government to ensure a manufacturing base for EVs and jobs for U.S. workers in the transition to an electrified transportation system.
- Work with stakeholders to help ensure that a national EV charging network is integrated with the grid and can support the move to renewable electricity, including smart charging technology and communication standards that connect utilities, chargers, and vehicles.
- Conduct demonstration and deployment programs that provide replicable models for EVs with a strong focus on historically underserved communities, both in cities and rural areas.

DOE has worked to develop electrified school bus technology, including the use of school buses for vehicle-to-grid applications, which can help school districts improve affordability and resilience in the case of power outages. DOE can further help by improving the technology and providing technical assistance through our Clean Cities Programs.

Question 2: The Tribal Energy Loan Guarantee Program (TELGP) has yet to issue any loans. This is a missed opportunity to help Tribes as they look to deploy renewable energy. The Fiscal Year 2021 Consolidated Appropriations bill included language encouraging DOE to better market the program.

a. If confirmed, will you commit to reviewing the TELGP and expedite efforts to make the program more accessible to Tribes?

Answer 2: If confirmed, I commit to reviewing the Tribal Energy Loan Guarantee Program and expedite efforts to make the program more accessible to Tribes.

Question 3: In Nevada, we have growing lithium production, battery manufacturing, and battery recycling industries, which reduce our need to source materials from other countries and increasing domestic job opportunities.

a. What more is DOE planning to do to jumpstart the domestic battery recycling economy, keep critical minerals in the domestic supply chain, and bring good jobs home?

Answer 3a: It is my understanding that DOE has multiple efforts aimed at strengthening the U.S. battery supply chain through increasing lithium ion battery recycling rates. The ReCell Center conducts R&D specifically focused on economic recovery of material from batteries through advanced processing technology development. In addition, along with the Departments of Commerce and Defense, DOE recently launched the Federal Consortium on Advanced Batteries (FCAB), which provides an interagency framework for cooperation on advanced battery technology and establishing a domestic supply of lithium batteries. Lastly, DOE just announced several projects to strengthen battery critical material supply chains – including a field demonstration effort to produce battery grade lithium hydroxide from claystone resources in Nevada. If confirmed, I will work to ensure that DOE applies its competencies and emerging capabilities to the needs of the U.S. critical supply chains, including lithium-ion battery manufacturing and recycling.

Question 4: The State of Nevada is recognized as a national leader in not only clean energy technology and innovation, but also in data storage security. When we spoke, I extended an invitation for you to come see all that Nevada has to offer.

a. When you visit Nevada, will you take time visit with and learn from our local leaders who are working to help DOE improve and secure its data storage?

Answer 4a: Yes.

Question 5: As our nation's school buildings age, the need for widespread investments in improving energy efficiency is becoming more apparent, not only to make communities healthier and improve learning conditions for our students, but to reduce energy costs for our school districts. For instance, simply updating a school's lighting is projected to save the school district thousands of dollars over time. That is why I plan to reintroduce the *Renew America's Schools Act*, which would help schools become more energy efficient, build-out renewable energy technologies, and purchase zero-emission buses and charging equipment. The bill would also be complementary to the work being done through DOE's Better Buildings Challenge.

a. Will you commit to supporting policies that ensure we as a nation are investing in energy efficiency to reduce emissions, protect the health of our communities, and cut costs for essential public services, such as education?

Answer 5a: Yes, if confirmed as Secretary, I look forward to leveraging the expertise of the Office of Energy Efficiency and Renewable Energy (EERE) to advance sustainable solutions that will also benefit local communities.

Question 6: The priorities of the Biden Administration for equity, climate, and economy can be addressed, in part, by smart investments and incentives for energy efficiency and distributed energy resources, including renewable energy and storage.

a. How do you plan to leverage the DOE's resources to ensure benefits get to those who are most burdened by energy costs and are most vulnerable to climate impacts?

Answer 6a: President Biden has made a commitment to invest at least 40% of the benefits of the response to the climate crisis in communities that have been historically disadvantaged by climate change or GHG pollution. If confirmed, I will ensure to use all of the tools at the DOE to live up to this commitment and am enthusiastic about doing so.

Question 7: While Nevada has been a leader in adopting minimum energy efficiency standards for new light bulbs, national appliance standards, including efficiency standards for light bulbs, have suffered over the past four years with numerous missed deadlines and regulatory rollbacks.

a. Is there a schedule or plan in place for DOE to catch up on missed appliance standard deadlines in order to help DOE meet its legal obligations?

Answer 7a: I recognize the importance of national appliance standards, including efficiency standards for light bulbs, and am aware of the backlog of updating efficiency standards that exists today. If confirmed as Secretary, updating efficiency standards and catching up on the backlog will be a priority for me.

b. Is there additional help or support needed from Congress?

Answer 7b: I look forward to working with you to ensure that DOE has all the resources and commitment from Congress we need to make energy efficiency a priority in this administration.

Question 8: Recent Administrations have proposed selling off Power Marketing Administration (PMA) assets, either in whole or in part. These proposals have included Federal transmission assets for the PMA that serves

Nevada, the Western Area Power Administration (WAPA). However, bipartisan majorities in Congress have rejected these proposals.

a. Will you commit to working with Congress and customers to ensure the PMAs can continue their statutory mission and that consumers would be protected from potential increases to their energy costs?

Answer 8a: Yes, my understanding is that these types of proposals have been rejected numerous times by the Congress. Should I be confirmed, my approach will be to have direct and collaborative engagement with the PMAs, in support of their statutory missions.

Question 9: The protection of energy and water systems from cyber-attack has become a high-profile concern for all nations, including our own. Israel's leadership in the development of cyber technologies, combined with its real-world expertise defending its critical infrastructure against attack has made this a large focus of the Israeli government, and provides us with a natural ally and partner.

a. What are your thoughts on protecting critical energy infrastructure from cyber-attack?

Answer 9a: As we have seen recently, the threat of cyber attacks on the homeland are very real. If confirmed, I will make protecting critical energy infrastructure from cyber-attack a significant priority for the Department of Energy, and will work closely with the Department's Office of Cybersecurity, Energy Security, and Emergency Response and Office of Electricity to bolster our nation's capacity to protect our critical energy infrastructure.

b. What are your thoughts on incorporating the protection of critical infrastructure into the U.S.-Israel energy dialogue?

Answer 9b: The U.S.-Israel energy dialog is a valuable platform for collaboration and cooperation across the spectrum of energy issues ranging from new technologies for renewable energy production and distribution to safeguarding the energy infrastructure that serves as the backbone of our energy systems. If confirmed, I will continue to direct the Department in working closely with Israel on a number of energy security issues including critical energy infrastructure protection, both bilaterally and as part of broader interagency engagements.

Question 10: In 2014, Congress passed the U.S.-Israel Strategic Partnership Act authorizing increased cooperation in energy with our leading ally in the Middle East. The legislation led to the creation of a U.S.-Israel Center of Excellence in Energy and Water. This has provided a platform for the two countries to

collaborate on energy and water issues. Additionally, the U.S.-Israel Energy Cooperation Program, managed by the Department of Energy, has set the stage for long-term strategic cooperation in the development of new energy technologies. This program represents one of several ways for our country to continue – and deepen – its energy relationship with Israel.

a. To what extent will the enhancement of our energy relationship with Israel be a priority if you are confirmed?

Answer 10a: Israel remains one of our most important allies in the region and is playing a significant role in the development of energy resources in the Eastern Mediterranean. If confirmed I will continue to strengthen our relationship with Israel through continued engagement in numerous established forums we have with our Israeli counterparts such as the U.S.-Israel Energy Dialogue and associated platforms. At the same time, I will ensure that DOE conducts a systematic review of all of our international collaboration programs to ensure that they are working well, are delivering goods in the interest of both parties, and are consistent with the overall foreign policy, energy, and climate objectives of the administration. In addition, I will seek to support the continued integration of Israel throughout the region using energy collaboration as a basis for broader regional cooperation.

b. What more can be done to strengthen our partnership with Israel in energy cooperation?

Answer 10b: The Department of Energy has a long history of strong and beneficial cooperation and partnership with Israel and is always seeking to deepen and strengthen our relationships with our international partners, including Israel. If confirmed as Secretary, I will work to examine ways in which to enhance that relationship.

c. In recent years, the United States has helped foster the growing energy relationship in the Eastern Mediterranean between Israel, Greece, and Cyprus. If confirmed, will you continue efforts to foster and expand this relationship?

Answer 10c: Yes. Continued support for the energy security goals of Greece, Cyprus, and Israel will be an important part of engagement in the Eastern Mediterranean, and congress has requested that DOE establish an Eastern Mediterranean Energy Center based in the United States

to serve these relationships. To date I don't believe the Department has received funding from Congress to enact this mandate and I look forward to working with Congress on this issue.

Questions from Senator John Hoeven

Question 1: I'm alarmed at the actions already taken by the Biden administration that will serve to close off access to energy reserves on federal lands. These actions will raise prices for consumers, increase our reliance on foreign energy sources and prevent the construction of the infrastructure needed to capture natural gas and prevent flaring.

Every industry and every household relies on a dependable and affordable supply of energy resources. We have abundant reserves of natural resources and the fact remains that global demand for fossil fuels will continue to rise. Having the necessary infrastructure to transport energy from where it is produced to where it is consumed is critical, and this includes both pipelines and transmission lines.

Will you commit to supporting pipeline infrastructure projects that ensure consumers have access to reliable and affordable supplies of energy?

Answer 1: If confirmed as Secretary, I will work to ensure Americans have access have access to reliable, affordable, abundant, and clean energy supplies. Pipeline infrastructure is important, especially for CO2 to decarbonize our use of fossil fuels.

Question 2: Will you commit to supporting pipeline infrastructure projects needed to capture natural gas and prevent flaring?

Answer 2: Yes, this will be a priority given the impact of methane emissions on climate.

Question 3: If confirmed, will you continue to follow the law as written and embrace policies that reflect our all-of-the-above approach, which includes coal, oil, and natural gas?

Answer 3: If confirmed as Secretary, I will follow the law and also work with congressional partners and other stakeholders to advance policies that reduce carbon emissions from fossil fuels.

Question 4: Will you commit to fully supporting power sector carbon capture support programs included in the FY21 Energy and Water Appropriations Act?

Answer 4: Yes.

Question 5: The recently enacted Energy Act of 2020 includes a program for two demonstration projects focused on carbon capture from coal facilities. North Dakota is at the forefront of carbon capture, use and sequestration (CCUS) technology and is already partnering with DOE on multiple innovative projects to reduce emissions. Will you commit to implementing this program and ensuring it is sufficiently funded?

Answer 5: If confirmed, I will ensure that DOE follows the congressional mandates from the *Energy Act of 2020*. Sufficient appropriations will be needed to support the new authorizations.

Question 6: The Energy & Environmental Research Center (EERC) at the University of North Dakota plays a critical role in the research and development that has made North Dakota into the energy powerhouse that it is today. The EERC is a former Department of Energy (DOE) laboratory and has had a cooperative agreement with DOE's Office of Fossil Energy in place since 1983. The agreement allows DOE to leverage EERC's assistance and expertise on a non-competitive basis, and is a cornerstone of a longstanding, successful partnership between EERC, the state, and the federal government.

To build off these efforts, along with the rest of the North Dakota delegation, I have been working with the Department to establish a similar agreement with DOE's Office of Energy Efficiency and Renewable Energy (EERE).

If confirmed, will you work with us to strengthen the relationship between EERC and DOE?

Answer 6: Yes. If confirmed as Secretary, I look forward to learning more about the role of EERC and its work with the Department.

Question 7: Minot Air Force Base in North Dakota is the only base with two legs of the nuclear triad. As such, I closely follow efforts to extend and refurbish our nuclear warheads, including the W87-1 ICBM warhead that will be fielded on the Ground Based Strategic Deterrent (GBSD) and the W80-4 warhead that will be used on the Long Range Stand Off (LRSO) Missile that will replace the aging Air Launched Cruise Missile now carried on the B-52.

With five warhead modernization programs underway, NNSA is executing an unprecedented variety of complex component development and production work. Do you support the life extension programs for the W80-4 and W87-1?

Answer 7: The Department of Defense has established the deterrent requirements being addressed by the W80-4 and W87-1 life extension programs. If confirmed, I will continue to support those on-going life extension programs.

U.S. Senate Committee on Energy and Natural Resources
January 27, 2021 Hearing
The Nomination of the Honorable Jennifer M. Granholm to be Secretary of Energy
Responses to Questions for the Record submitted to the Honorable Jennifer M. Granholm

Questions from Senator Mike Lee

Question 1: Governor Granholm, Congress recently received a report from the Department of Energy requested in the FY 2018 National Defense Authorization Act. DOE estimates that we could accelerate the timeline for the legacy cleanup of the Nation's nuclear defense complex by roughly a decade and potentially save the U.S. taxpayer in excess of $200 billion dollars if management and disposal of nuclear waste within the complex is based on the radiological risk of that waste to human health and the environment rather than relying on what activity led to the formation of the waste.

The Department's recent report makes clear that while using an approach that defines and characterizes nuclear waste based on the materials risk characteristics can lead to great savings, it does not yet represent a policy decision for complex-wide implementation. I do understand that this new approach has been successfully demonstrated with respect to certain tank waste at the Savannah River site and that a second demonstration is underway.

a. Will you pursue the management and ultimate disposal of radioactive waste in the complex based on the radiological risk that the constituent elements of that waste present to public health and the environment as opposed to the activity that produced that waste?

b. Can you assure that the DOE will promptly complete the ongoing environmental assessment so that the second demonstration of this risk-based definition concept can proceed?

Answer 1: If confirmed as Secretary, I will work to ensure the Department is conducting its important legacy cleanup activities in a safe, effective and cost-efficient manner. I will examine how the Department's Office of Environmental Management's high-level waste (HLW) interpretation can support those efforts.

Question 2: Section 3121 of the recently enacted FY '21 National Defense Authorization Act requires the Secretary of Energy to make an annual statement of environmental liabilities for each facility in the complex. Section 3122 of that law requires future year cleanup plans to identify missed milestones for each site. It seems to me that it would be most useful to the Department, the Congress and the affected members of the public if these annual statements also identified an inventory of discrete waste streams at each facility that would benefit from application of this risk-based approach, the impact of such application to overall liabilities and milestones at each facility and a budget estimate for implementation. Would you concur and make that commitment?

Answer 2: If confirmed as Secretary, I will review the Department's implementation of the HLW interpretation to ensure the Department is conducting its important legacy cleanup activities in a safe, effective, and cost-efficient manner.

Question 3: Over the last several years we have seen tremendous growth globally in research & development in using hydrogen in long-term electricity storage. Additionally, I have the world's largest renewable energy storage project being developed by Mitsubishi Power and Magnum Development in Delta, UT. The project utilizes renewable energy and Green Hydrogen to create clean power that can be stored for significant periods of time and released out to the Western Electricity Grid when needed during peak use periods. The project is expected to improve electricity reliability in the west, while significantly reducing emissions and fuel costs over time. What ongoing programs does DOE oversee regarding this fuel source?

Answer 3: DOE has been funding hydrogen and fuel cell activities for over 4 decades, led by the Hydrogen and Fuel Cell Technologies Office (HFTO) within DOE's Office of Energy Efficiency and Renewable Energy (EERE) and including other DOE offices, such as Fossil Energy (FE) and Nuclear Energy (NE). Key hydrogen production programs include hydrogen from fossil fuels with carbon capture (FE), electrolysis using renewables (i.e., "green" hydrogen) and the integration of electrolyzers with nuclear plants (NE). HFTO funding has enabled over 1,100 U.S. patents and 30 commercial technologies in areas of hydrogen production, delivery, storage and fuel cells.

DOE has also invested more than $4 billion over the last 20 years in various areas such as advanced water splitting and electrolyzers to produce hydrogen, advanced gasification and turbines to produce and use hydrogen from fossil fuels, and diverse fuel cell technologies for multiple applications. DOE also recently announced relevant projects including the first data center, marine, nuclear to hydrogen and hydrogen turbines and energy storage projects. Examples like the Utah project demonstrate the potential for hydrogen at scale and showcase the value of regional initiatives. Reducing cost is a priority and we have launched a new consortium (H2NEW) to help reduce the cost of electrolyzers to produce green hydrogen and reach a goal of $2 per kilogram to make green hydrogen competitive with conventional hydrogen using natural gas.

Question 4: Federal hydropower marketed by the Power Marketing Administrations (PMAs) is an essential energy resource in many places across the country, including in my home state of Utah. Of particular importance is managing PMA (and especially WAPA) costs, especially given the extreme drought conditions across much of the West that may require the PMAs to purchase power to meet power supply obligations. Do you have any plans that will impact costs for municipalities and other non-profit entities that receive PMA power?

Answer 4: The Power Marketing Administrations, specifically the Western Area Power Administration, is an important asset as it provides electricity supplies to more than 40 million Americans over a service area that spans portions of 15 states. As such, if confirmed as Secretary I believe it's important the Department continues to support WAPA in its efforts to provide low-cost electricity supplies to its ratepayers.