

TURK NOMINATION

HEARING
BEFORE THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
ONE HUNDRED SEVENTEENTH CONGRESS
FIRST SESSION
TO
CONSIDER THE NOMINATION OF DAVID M. TURK TO BE THE
DEPUTY SECRETARY OF ENERGY

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MARCH 4, 2021
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TURK NOMINATION

THURSDAY, MARCH 4, 2021

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

The Committee met, pursuant to notice, at 10:26 a.m. in Room SD-G50, Dirksen Senate Office Building, Hon. Joe Manchin III, Chairman of the Committee, presiding.

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

The CHAIRMAN. We meet today to consider the nomination of David M. Turk to be the Deputy Secretary of Energy. I want to welcome Mr. Turk to the Committee, and I want to thank you for being here this morning, sir, and for your willingness to serve in this important position.

Energy is essential to all of us. We depend on it every minute of every day to heat our homes and offices, to power our factories, to light the darkness, to cook our food, to fuel our cars, and to power our cell phones and computers. It is an indispensable fabric of our civilization. It is the Department of Energy's (DOE) job to see that the people of this country have an adequate and reliable supply of energy at the lowest reasonable cost. The Department has many other responsibilities, including maintaining our nuclear deterrents, cleaning up Hanford and the Cold War nuclear weapons sites, and maintaining our scientific and technological prowess through the national laboratories. But its primary mission, its reason for being, is to promote the general welfare by assuring coordinated and effective administration of federal energy policy and programs. Next to the Secretary, the Deputy Secretary bears the principal responsibility for this task.

The Deputy Secretary is the second-highest ranking officer in the Department and the Department's Chief Operating Officer. The Deputy must be prepared to act for the Secretary and perform all the Secretary's functions and duties in the Secretary's absence, and to manage the Department's wide-ranging mission and the budget of over \$35 billion.

Mr. Turk, I am convinced that you are up to the job. You know the energy issues. You have spent the last four years in senior positions at the International Energy Agency (IEA) and the past 14 months as the Agency's Deputy Executive Director. The Executive Director of the IEA is Dr. Fatih Birol, who is well known to this Committee and highly regarded by members on both sides of the aisle. Mr. Turk has been Mr. Birol's Deputy. He knows the Depart-

ment of Energy. Before joining the IEA, he spent two years as the Deputy Assistant Secretary for International Climate and Technology at the Department of Energy. Before that, he was a Deputy Assistant Secretary at the Department of State and a Special Assistant to the President at the National Security Council—and he knows Congress. He got his start working for Senator Conrad, who we will hear from in a moment, then served as Counsel to then-Senator Biden on the Senate Judiciary Committee, and later as Staff Director for the House Oversight Subcommittee on National Security and Foreign Affairs.

He has spent the past 20 years serving in important jobs that have given him the technical knowledge and the practical experience in energy, national security, and management that he will need to help Secretary Granholm lead the Department of Energy. I think he is supremely well qualified and I hereby support his nomination.

I will now recognize Senator Barrasso to make his opening statement.

Senator Barrasso.

**STATEMENT OF HON. JOHN BARRASSO,
U.S. SENATOR FROM WYOMING**

Senator BARRASSO. Well, thank you very much, Mr. Chairman, and I also want to welcome David Turk to join us today at the Senate Energy and Natural Resources Committee. Congratulations on the nomination. Thank you for spending time with me yesterday and I thought it was a very productive discussion. I appreciated that.

Our nation's energy production benefits every American, as we discussed yesterday. American energy keeps the lights on for our schools, our businesses and our homes. It powers our cars, our buses, our trucks, our ships, our airplanes and our trains. Whether it is coal, oil, natural gas, uranium, water, sun, or wind, the energy resources we use to generate power provide the backbone for our economy. Over the decades our nation has made great progress in improving the environmental and economic performance of all of these energy resources and we must never rest on our laurels. We must always continue to harness American ingenuity, investment and innovation to make our use of these energy resources even cleaner and more cost-effective and efficient for the American people.

Last Congress I, along with my Democrat and Republican colleagues, worked together to enact a law that promotes carbon capture technologies, provides for more efficient diesel engines and prevents greenhouse gas emissions from air conditioners. This was the most significant climate change law to pass Congress in years and it is going to pay significant dividends for the environment. I look forward to working with Chairman Manchin, the members of this Committee, and the Department of Energy to build on this record of bipartisanship.

If confirmed as Deputy Secretary of Energy, Mr. Turk is going to play a critical role in our nation's energy agenda. His experience in energy policy is extensive and it includes leadership positions at the International Energy Agency in Paris, the U.S. Department of

Energy, the U.S. Department of State, and the National Security Council. During his career, Mr. Turk has worked to support the development of innovative energy technologies. He has specifically spoken publicly about the need for carbon capture technologies. I hope to hear more from Mr. Turk today about his support for developing innovative energy technologies, including carbon capture technologies. We also want to hear from him on how the Biden Administration can promote American energy exports instead of just stifling domestic production.

Much of our nation's energy comes from Wyoming which is America's leading energy producer. It has among the largest reserves of energy resources in the country, produces 15 times more energy than it consumes, and it is the biggest net energy supplier among all 50 states. Energy production is the economic lifeblood of Wyoming. It creates good paying jobs, provides a critical source of revenue to state and to local governments. I look forward to hearing how Mr. Turk will prioritize policies that take advantage of the enormous energy, economic and national security benefits generated by our abundant fossil fuel resources.

All too often, international climate efforts, such as the Paris Climate Agreement are designed to give other countries an advantage over ours. This agreement gave countries like China, Russia, and Iran a competitive advantage over America with little to no environmental benefit. If confirmed at the Department as Deputy Secretary of Energy, Mr. Turk must prioritize policies that are directly associated and focused on helping Americans. This is going to include energy production from coal, oil, natural gas, and uranium.

The Biden Administration has already declared war on American energy and American energy workers. Its policies make the United States and our allies more vulnerable to China, also to Russia, also to OPEC nations. So I am not going to sit idly by while an Administration enforces policies that threaten my home state's economy and the livelihoods of so many people in my state and across the country. The bottom line is the United States will need fossil fuels well into the future. Coal, oil, and natural gas are not going away and America should not leave these assets stranded in the ground. If confirmed as Deputy Secretary of Energy, Mr. Turk must ensure that he and his colleagues at the Department recognize this reality.

Again, thank you Mr. Chairman for calling the hearing. I do look forward to Mr. Turk's testimony and having an opportunity to further explore and discuss the issues with the nominee.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator.

At this point, I will recognize Senator Van Hollen to introduce Mr. Turk to the Committee.

Senator Van Hollen.

**STATEMENT OF HON. CHRIS VAN HOLLEN,
U.S. SENATOR FROM MARYLAND**

Senator VAN HOLLEN. Thank you, Chairman Manchin and Ranking Member Barrasso, members of the Committee. I appreciate the opportunity to introduce to you the President's nominee to be Deputy Secretary of Energy, Mr. David Turk. While Mr. Turk was born in South America and raised in Illinois, I think I can speak for all

my fellow Marylanders when we say we are proud to claim him, his wife, Emily, and their three children as Marylanders. As you have heard from the Chairman's introductory biography, Mr. Turk has a wide range of experience directly relevant and important to this position, and I highly recommend him to you as the next Deputy Secretary.

I have also had the privilege of getting to know Dave personally over the years. I first met Dave more than a dozen years ago when he served as the Staff Director of the National Security Oversight Subcommittee in the House of Representatives. He worked diligently with both sides of the aisle. I had a chance to travel with him on official CODELs and participate in hearings organized by the subcommittee. And throughout that period, he showed a seriousness of purpose and a focus on key national security issues, and recognized the importance of working with our allies to pursue our national security interests. I always found him to be well organized, diligent, and responsive to members on the Committee from both sides of the aisle. His national security experience is going to be very important in this job. As you indicated, Mr. Chairman, a big part of the Department of Energy portfolio is overseeing our nuclear weapons arsenal, advancing our nuclear non-proliferation goals, and promoting international nuclear safety. And Mr. Turk's experience in the House and elsewhere will serve him very well for this mission.

Beyond his experience in the House, Mr. Turk had a number of other positions that are directly relevant to this position. We are going to be hearing from Senator Conrad, and I want to thank the Senator for his great service and for being here today to speak on behalf of David Turk. Mr. Turk also served on the Judiciary Committee for then-Senator Joe Biden. Beyond Capitol Hill, he had posts in the White House on the White House National Security Council, at the State Department, and as you indicated, Mr. Chairman, at the Department of Energy, where he served as the Deputy Assistant Secretary for International Climate and Technology. Most recently, he has channeled his skills toward helping governments, industry, and communities across the world make informed, 21st century energy choices in his capacity at the International Energy Agency. He has worn many hats during his five-year tenure there, most recently as Deputy Executive Director, and that position has given him, literally, a global vantage point with respect to the challenges of energy and, of course, of climate change.

As a co-sponsor of Senator Barrasso's legislation that he mentioned with respect to carbon sequestration and other measures to reduce emissions from greenhouse gases, I can assure members that Mr. Turk will work closely with us on that agenda. In fact, while his resume indicates that he has spent his career in various capacities here in our nation's capital and, of course, in his most recent post overseas, Dave grew up in a town in Illinois, Rock Falls. I know from my many interactions with him that he has never forgotten those small town roots, and in this job at the Department of Energy, he is always going to be focused on working Americans, no matter where they live in the United States of America—East Coast, West Coast, and all points in between, plus Alaska and Hawaii.

Mr. Chairman, Ranking Member Barrasso, members of the Committee, I strongly urge you to support the nomination of David Turk.

The CHAIRMAN. Thank you, Senator Van Hollen.

Now I want to recognize our former colleague, Senator Conrad, to introduce Mr. Turk. Senator Conrad represented North Dakota in the Senate from 1987 to 2013, and served as either Chairman or Ranking Member of the Budget Committee for 12 years. Perhaps more to the point this morning, he was a member of this Committee from 1987 to 1993, and he played a major role in enacting the landmark Energy Policy Act of 1992.

Senator Conrad, we are, sir, truly honored and pleased to welcome you back to the Committee this morning, and I want to assure you that your years of hard work trying to balance the budget and your example of bipartisanship have not been forgotten.

Senator Conrad.

**STATEMENT OF HON. KENT CONRAD, FORMER U.S. SENATOR
FROM NORTH DAKOTA**

Senator CONRAD. Thank you, Chairman Manchin. Very kind words; I appreciate it. As I look back on my time with you and Ranking Member Barrasso, it is good to see you.

Senator BARRASSO. We always liked Lucy better than you.

[Laughter.]

Senator CONRAD. That has always been my experience in life. So good to see you all. I did love serving on the Energy Committee. You know, they made me leave when I went to the Finance Committee, or I would have stayed for my entire time because I truly loved serving on the Energy Committee. And I want to thank you, Mr. Chairman and Ranking Member, for this opportunity to introduce David Turk who, as you know, has been nominated to be Deputy Secretary of Energy. Dave worked with me for three years, actually more than three years, as Legislative Assistant and as my Counsel. I can tell you he did a superb job. I very much enjoyed working with Dave, as did all of our staff and everybody that worked with him. He's the kind of person you want in a position of responsibility.

Senator Van Hollen mentioned that Dave grew up in a small town in Illinois, and he has those small town, Midwestern values. Dave Turk is honest. He is hard working. He is somebody that works well with others and appreciates the fundamental need to get things done. That is really what drives Dave Turk and motivates him to get things accomplished to improve the lives of the people that he works for. And he knows, in this position, he is working for the people of the United States. Because of his long service in Congress, he also appreciates that Congress is the Article I branch of our government. He understands the critical role it plays in our constitutional structure, and he learned full well the importance of working together, of working with others. I can tell you if he is confirmed, he will be laser-focused on improving the lives of the people of this country. That will be his focus. He will also be results-oriented. One of the things I can say about Dave in having worked with me is, if you wanted a job to get done, you

gave it to Dave Turk, because the job is going to get done and it is going to get done well.

Finally, let me just say, Dave is also a very good basketball player, and I found that makes a big difference in life, especially if you can rebound. So let me just say to my colleagues, my former colleagues, I urge you to vote for the confirmation of Dave Turk. I urge you to do it quickly. You will never be disappointed. You will enjoy working with this man and you will appreciate the attitude he brings to his work.

Thank you so much. It is good to see you all again.

The CHAIRMAN. Thank you, Senator Conrad. It is good to see you and hear from you also, as always.

The rules of the Committee, which apply to all nominees, require that they be sworn-in in connection with their testimony. Mr. Turk, if you would please stand and raise your right hand.

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

Mr. TURK. I do.

The CHAIRMAN. You may be seated, sir.

Before you begin your statement, I will ask three questions addressed to each nominee before this Committee. Will you be available to appear before this Committee and other Congressional committees to represent departmental positions and respond to issues of concern to the Congress?

Mr. TURK. I will.

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

Mr. TURK. No.

The CHAIRMAN. Are you involved or do you have any assets held in a blind trust?

Mr. TURK. No.

The CHAIRMAN. You are now recognized to make your statement, so you can proceed. Thank you.

STATEMENT OF DAVID M. TURK NOMINATED TO BE THE DEPUTY SECRETARY OF ENERGY

Mr. TURK. Chairman Manchin, Ranking Member Barrasso, distinguished members of the Committee, thank you for the opportunity to appear before you today. Let me also thank Senators Van Hollen and Conrad, not only for their incredibly kind introductory remarks, but more importantly, for their remarkable years of public service. It is a distinct honor to be before a Committee with such a proven record of bipartisan accomplishments. Let me congratulate all those involved in the groundbreaking Energy Act of 2020, in particular, especially then-Chairman Murkowski, then-Ranking Member Manchin and all the Senators who were involved in that extraordinary effort. Last year also saw passage of Senator Barrasso's HFC bill that he mentioned, one of the most important pieces of climate legislation in recent years.

To introduce myself, I thought I'd focus on five key formative experiences in my life that should I be honored enough to be confirmed, I would take with me as Deputy Secretary of Energy.

First, as has already been mentioned, I grew up in a small Rust Belt town that I suspect most of you have never heard of, Rock Falls, Illinois. Throughout my childhood the mill, which is what we referred to simply as the largest employer, laid off more and more workers each year of my childhood. Through no fault of their own, steady paychecks were no longer steady, families were thrown into disarray and the entire community was left to fend for itself.

Second, in high school I was selected to represent my home State of Illinois at a DOE summer program at Brookhaven National Lab. From this very first experience I could tell that DOE was a very special organization and this first impression was only reinforced when I became a full-time Department employee.

Third, my first job, as was been mentioned, was working in DC for Senator Kent Conrad who instilled in all of us on his team a laser-like focus to help his fellow North Dakotans. Through that experience, I learned how passionate public service can make a real difference in real people's lives.

Fourth, I had the privilege to serve as a Special Assistant to the President on the National Security Council. My role was to coordinate national security issues between the Congress and all of the agencies of the Executive Branch. I learned that America is always stronger when Article I and Article II can work together.

And fifth and most recently, I served as Deputy Executive Director of the International Energy Agency under a visionary leader in Dr. Fatih Birol. If confirmed, I very much look forward to being Deputy to another visionary leader in Secretary Granholm. I learned that a successful deputy needs to put ego aside to support the leader, to lift up all others and to follow through. If confirmed, I would bring all of these experiences to the job of Deputy Secretary of Energy.

The expansive portfolio of DOE and its 110,000 employees can, at first, look a bit like a Frankenstein's monster. But upon closer inspection, I would argue there's a clear thread throughout. DOE, put simply, is where our country turns for solutions to our country's toughest problems.

Let me elaborate on what I mean of this critical role of DOE as America's catalyst for solutions. The Department must maintain a safe, secure, reliable nuclear stockpile, prevent nuclear weapons proliferation, clean up waste from our nuclear weapons programs of the past. The Department has been and must remain the scientific powerhouse, not only of the country, but of the world. The Department must be an indispensable solutions catalyst to defeat climate change, one of the most daunting challenges ever facing humanity. DOE must help catalyze a full range of clean energy, affordable, resilient technologies for us to be able to reach net zero emissions in just a few short decades. And the Department needs to be laser-focused like never before to help communities in transition. We must ensure we do not leave towns like Rock Falls, Illinois, alone without real world opportunities and a fair chance to succeed. I firmly believe that the greatest country in the history of the world can solve climate change, build back better, out-compete

others and leave no workers and no communities behind and we must do all of these urgently and at the same time.

If confirmed, I look forward to partnering with each of you as you serve your constituents and your communities. For the Department to be successful, it needs the type of bipartisan leadership, partnership, that you all have shown in the Energy Act of 2020.

Thank you again for giving me the opportunity to appear before you today. I very much look forward to your questions and to do everything I can to help.

[The prepared statement of Mr. Turk follows:]

Statement of
David M. Turk
Nominee for the Position of
Deputy Secretary of the United States Department of Energy
Before the
Committee on Energy and Natural Resources
United States Senate
March 4, 2021

Chairman Manchin, Ranking Member Barrasso, and distinguished members of the Committee, thank you for the opportunity to appear before you.

It is a distinct honor to have my nomination considered by a Committee that has such a proven record of bipartisan accomplishments. This includes, most recently, the ground-breaking Energy Act of 2020, which included 29 bipartisan bills thanks to the leadership of Senators Murkowski and Manchin. Last year also saw passage of Senator Barrasso's very important HFC bill.

To introduce myself, I will focus on five formative experiences in my life that, should I be honoured enough to be confirmed, I would take with me as Deputy Secretary of Energy:

First, I grew up in a small Midwestern, rust-belt town that I suspect most of you have never heard of: Rock Falls, Illinois. The largest employer in Rock Falls was the local steel mill. Throughout my childhood, "The Mill" – which is what all of us simply referred to it – laid off more-and-more workers. Through no fault of their own and because of forces larger than they could control, workers' steady pay checks were no longer steady, families were thrown into disarray, and our entire community was left to fend for itself.

Second, in high school I was selected to represent my State of Illinois at a Department of Energy summer program at Brookhaven National Lab. From this very first experience, I could tell the Department was a special organization. This first impression was reinforced many years later when I became a full-time Department employee in 2014. Each and every day, I was able to witness the incredible talent, dedication, and passion of professionals working to better the lives of fellow Americans.

Third, my first job in DC was working for Senator Kent Conrad, who instilled in his team a laser-like focus to help his fellow North Dakotans. Whether it was ensuring bus service to Medora, protecting against flooding from Devils Lake, or providing enough doctors to serve rural communities throughout the State, I saw first-hand how passionate public service can make a real difference in real peoples' lives.

Fourth, I had the privilege to serve as a Special Assistant to the President on the National Security Council. My role was to coordinate national security efforts between Congress and the Executive Branch. As Senior Director for Legislative Affairs, I worked with all of our national security agencies and provided advice to National Security Council decision-making. Through this experience, I learned that America is always stronger when Article I and Article II work together.

Fifth, and most recently, I have served as Deputy Executive Director of the International Energy Agency. In this role, I have had management responsibilities across the IEA and an unparalleled opportunity to analyze all fuels and all energy technologies across the entire world. I learned that being a successful Deputy means both supporting your leader and lifting up the work of everyone else. A Deputy needs to make the trains run on time and to assiduously follow through.

If I am confirmed, I will bring all of these experiences to the job of Deputy Secretary of Energy, as well as a sense of humility, diligence, and teamwork.

When one looks at the expansive portfolio of the Department and its 110,000 employees – from nuclear weapons to incredibly complex clean-up projects; from cutting-edge science to providing clean, affordable, and reliable energy solutions for all Americans – the Department of Energy can at first look like a Frankenstein’s monster.

But, I would argue there’s a clear thread throughout. The Department – including its 17 National Laboratories – is where our country turns for solutions to our toughest problems. Let me elaborate on this critical role as America’s “solutions catalyst”:

- The Department must maintain a safe, secure, and reliable nuclear stockpile; fuel our nuclear Navy; prevent nuclear weapons proliferation and the threat of nuclear terrorism; and clean up waste from our nuclear weapons programs of the past.
- The Department has been and must remain the scientific powerhouse of the world. For the U.S. to successfully deal with the challenges of today and tomorrow, we absolutely need to fully leverage all of the Department’s capabilities.
- The Department must be an indispensable solutions catalyst for us to successfully defeat climate change, one of the most daunting challenges ever facing humanity. The Department’s efforts are critical to help develop a full range of clean, affordable, secure, and resilient energy technologies for us to reach net zero emissions in just a few short decades. Companies, entrepreneurs, investors, and workers will take solutions to scale, but the Department of Energy can be an indispensable partner.
- Finally, the Department needs to be focused like never before to help communities in transition. We must ensure we don’t again leave towns like Rock Falls, Illinois, alone without the support to succeed well into the future. The American people don’t want hand-outs or empty promises. They deserve real-world opportunities and a fair chance to succeed. Coming from a humble background, I have been blessed with the support of my parents, my wife, teachers, mentors, and the broader community to have had such wonderful career opportunities. We can and must do better for all our American neighbors.

I firmly believe that the greatest country in the history of the world can solve climate change, Build Back Better, outcompete others, and leave no workers and no communities behind. And we must do all of these at the same time.

For the Department to be successful, it needs the type of bipartisan leadership you all have shown in the Energy Act of 2020. If confirmed, I look forward to being a partner with each of you as you seek to serve your constituents and communities.

Thank you again for giving me the opportunity to appear before you today. I look forward to your questions and to doing everything I can to help.

The CHAIRMAN. Thank you, sir.

I will start the questioning. My first question will be, the United States became a net total energy exporter in 2019, which means we were energy independent for the first time in 67 years, in large part due to the surge of domestic oil and gas production. Do you believe it is in our best interest to maintain our energy independence?

Mr. TURK. Yes.

The CHAIRMAN. I believe that we must meet the climate challenge with innovation, not elimination. I say that in recognition that we must reduce emissions in all sectors of the economy domestically, but also around the world. I have said this many times, this is global climate. It is not North American climate or United States climate. I also believe it is of paramount importance that we maintain our energy independence. We can continue to develop innovative solutions that will reduce our carbon emissions and get us to net-zero by 2050 while taking advantage of all the energy resources that we have at our disposal.

Do you agree with the all-of-the-above energy strategy for our country, and also that we can do it with investments in technology?

Mr. TURK. Well, as we had a chance to talk, Mr. Chairman, and thank you for talking with me before the hearing and so many other Senators on this Committee, having worked at the International Energy Agency and elsewhere, I'm a firm believer, as you said very eloquently in your opening statements, that energy is good. Energy is what powers our community and provides livelihoods for Americans across the country. It's emissions that are the challenge. So, we need to promote energy. We need to promote energy just as you said and we also need to focus on emissions and this is where technologies like CCUS, Ranking Member Barrasso mentioned, others mentioned as well. We need to have that full assortment of tools in the tool belt on energy.

The CHAIRMAN. Well also, when you put your energy budget together, working with Secretary Granholm, will you commit to including the \$35 billion that we authorized in the Energy Act last year for technology so we can find and innovate the new technologies that we will be able to use for an all-of-the-above strategy, including all of our fossil, in the cleanest way to meet these emissions reductions?

Mr. TURK. Well, absolutely. And again, congratulations to you, Senator Murkowski, all involved in the Energy Act of 2020 which provides a terrific road map for what the Department should be focusing on and a wide range of technologies and sectors when it comes to energy. And I'm a firm, firm believer, as you are, Mr. Chairman, on innovation. I've spent much of my career focused on innovation, the power of innovation, to really have solutions for these challenges that face our country.

The CHAIRMAN. Your background working at the U.S. State Department and Department of Energy, as well as the IEA, has given you an important perspective on the United States' role in energy and technology markets worldwide. In recent months, China has announced increasing ambition on addressing its greenhouse gas emissions, and data showed that its energy investments across technologies are significant. President Biden has already signaled

his interest in reclaiming U.S. leadership on the global climate stage, but existing competition in markets and our reliance on foreign supply chains—I repeat that, on foreign supply chains—may be our biggest obstacle to meeting our desires.

How do you see the Department of Energy playing a role in boosting U.S. competitiveness and leadership on providing climate solutions to a global energy market?

Mr. TURK. Well, I completely agree with you, Mr. Chairman. The U.S. is a leader in the world, needs to be a leader, needs to be the leader the world, including when it comes to the technologies of the future. And we do need to approach other countries, whether it's China or others with our eyes wide open, with a very pragmatic streak and look forward, look for promoting the U.S. interest of companies, communities. One issue in particular, and I hope we talk about it further today, is critical minerals. Critical minerals are important now, will be even more important into the future as well. And we need to get our act together as a U.S. Government, working Article I, Article II, to make sure we have a full supply chain of critical minerals, the jobs associated with it, the national security benefits that flow from it as well.

The CHAIRMAN. That is great.

I have one final question. I think we can all agree that the national labs are the Department's crown jewels, and I am so proud to have the National Energy Technology Laboratory (NETL) in Morgantown, West Virginia. This is merely personal to me, but 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 the other labs enjoy, such as control over its own hiring. And right now, I understand there are more than 30 vacancies awaiting Secretarial approval to fill at NETL.

Will you turn your attention to getting these hires approved at NETL? Will you work with me to ensure NETL has the authority over its human resources needed to put it on a level footing, a level playing field, with the other 16 labs?

Mr. TURK. Well, thank you, Mr. Chairman. NETL is one of the crown jewels of our crown jewels in our national lab system. It's incredibly important. And as, if I'm confirmed as the Deputy Secretary of Energy, my job as the COO of the agencies to make sure the trains run on time or supporting the incredibly passionate, gifted folks at NETL and our other national labs. So I would absolutely love to work with you, work with your staff, to make sure NETL has all the full authorities and tools that it needs.

The CHAIRMAN. Well, if we can look at the hiring situation they have and the positions that have been unfilled for far too long, I would appreciate that.

Senator Barrasso.

Senator BARRASSO. Thank you, Mr. Chairman.

I have just a couple of short questions. It is a series of them. I asked them previously to Secretary Granholm and just, the U.S. is the world's largest oil and gas, natural gas, producer. On balance, good thing or bad thing?

Mr. TURK. Good thing.

Senator BARRASSO. The U.S. has, if not the lowest, then among the lowest energy prices in the industrialized world. On balance, good thing or bad thing?

Mr. TURK. Good thing.

Senator BARRASSO. Jobs in the oil, natural gas, and coal sector, pay well above the national average. On balance, good thing or bad thing?

Mr. TURK. Jobs are good, absolutely.

Senator BARRASSO. Oil, gas, and coal production generates on an annual basis billions of dollars for states, for tribes and for the Federal Government. On balance, good thing or bad thing?

Mr. TURK. Good thing for those states to have that funding.

Senator BARRASSO. Largely because of hydraulic fracturing, U.S. emissions are at the lowest level since the early 1990s. On balance, good thing or bad thing?

Mr. TURK. As I mentioned, energy is good. Emissions are bad. Whatever we can do to drive down emissions is a positive thing.

Senator BARRASSO. U.S. exports of oil and natural gas have enabled our allies to reduce their reliance on imports from our adversaries. On balance, good thing or bad thing?

Mr. TURK. Good thing.

Senator BARRASSO. Thank you.

At her nominating hearing I asked Secretary Granholm how a ban on oil and gas leasing is consistent with President Biden's goal of unifying our country, putting Americans back to work, helping the economy grow. She said that the President's plan on building back better would create more jobs in clean energy than the jobs that might be sacrificed. I focus on the word "sacrificed." Do you believe that the jobs of American oil and gas workers need to be sacrificed?

Mr. TURK. So we need to focus on jobs, as I said in my opening statement, with a laser focus. And we are in the middle of an energy transition going on, not only in Wyoming, but states not only in our country, but in our world. And this is not going to be easy, it's going to require focus day in and day out with a sense of urgency to not only have the jobs our communities need today, but to have the jobs for decades to come as well.

Senator BARRASSO. Do you believe that each of these workers whose job may be sacrificed as a consequence of these policies are going to be able to regain employment at or above their previous salary and benefits and be able to remain in their communities? Because you talked about your own experience in Illinois.

Mr. TURK. Well, absolutely, and having grown up in a small town, a Rust Belt town, I saw what job losses meant, not only for the people whose paychecks were lost, but the families and the communities and the businesses that depended on that funding. And I think it's not only a responsibility of government from a practical perspective, but I think it's a moral responsibility to work with communities across the country and make sure that we have the opportunities and the fair chance that all Americans deserve. Again, this is not going to be easy. I don't think there's any quick fixes here. I think this is going to require an awful lot of work and, hopefully, collaboration between Congress and the Executive Branch.

Senator BARRASSO. You know, on his first day in office, President Biden revoked the permit for the Keystone XL pipeline. As a result, a thousand workers lost their jobs and about 10,000 future jobs that would have been created to finish the pipeline ended up getting canceled. Last month, President Biden failed to impose sanctions on any additional companies building the Nordstream II pipeline. You have been spending time in Europe. You know that is the pipeline that is going to Europe. It is a natural gas pipeline that is going to enable Russia to gain a position of dominance on a number of our allies in Europe, and it is going to ensure the Russian workers keep their jobs.

Yesterday 40 Senators, 40 of us, sent a letter urging President Biden to impose sanctions on entities involved with Nordstream II. So Mr. Turk, why is President Biden favoring Russian workers and Russian energy over American workers and American energy when it comes to pipelines?

Mr. TURK. Well, I think what we need to be focused on is, as you mentioned, Ranking Member Barrasso, real world jobs, not just the eye in the sky thinking—pie-in-the-sky thinking and, especially for pipeline workers, we can build CO₂ pipelines. I had a terrific conversation with Senator Hoeven about some interesting efforts to bring some ethanol plants in the Midwest and pipe up that CO₂ to North Dakota. There's an opportunity there. There's huge opportunities on CCUS, if we can work together and really go to scale on CCUS or hydrogen or critical minerals, a lot of other particular opportunities from a jobs front, across the spectrum.

Senator BARRASSO. I just think that the sad fact is that President Biden's oil and gas leasing ban in the United States, cancellation of the Keystone XL pipeline, and his failure at the same time to sanction entities involved in the Nordstream II pipeline all add up to an energy policy that seems to favor Russia over the United States.

Let me go to my last question on liquefied natural gas, since you just raised that. Last June before this Committee you were here to testify and you said, U.S. liquefied natural gas continues to play a unique role in enhancing market efficiency and supply security all around the world. Can you expand upon your comments for the Committee?

Mr. TURK. Well certainly, if I'm confirmed, I understand the jurisdiction of the Department of Energy under the Natural Gas Act to examine gas export applications under the public interest determination. Those are specific determinations for specific LNG export applications and I would certainly look to apply that under the law as given. I also think we need to focus very much, and I know members of this Committee have focused on this, on methane emissions and natural gas. We've got to do a better job in the U.S. and we've got to help and work with and pressure other countries, Russia and others, to really get their acts together on methane emissions.

Senator BARRASSO. So you do see the political benefits from exporting American liquefied natural gas to our allies across the world?

Mr. TURK. So we're a democracy. We're a leader of the free world. We are the leader of the free world. I think it's a much better out-

come for Japan or others to get their energy supplies from the U.S. than to get it from Russia or other countries.

Senator BARRASSO. Thank you, Mr. Chairman.

Senator CANTWELL [presiding]. Thank you.

Senator Wyden.

Senator WYDEN. Thank you very much, Madam Chair.

Last year, Mr. Turk, wildfires hit Oregon like a wrecking ball. And just last month, a winter storm left thousands of Oregonians with no power. I have legislation to drive power companies to increase their efforts to make their utility lines more resistant to these major weather events by increasing activities like undergrounding power lines, reinforcing utility poles, and clearing away brush. This is important to do so that power companies can do more and these costs do not come at the expense of rural ratepayers. If you are confirmed, will you commit to working with me to move this legislation forward and making our power grid more resilient?

Mr. TURK. I think we've seen, not only in Oregon and out West, we've seen in Texas, we've seen in other parts of the country the importance of resilience of our grids. It's something that we need to work at. If I'm confirmed, I look forward to working with our terrific colleagues in the Department of Energy, the national labs, with experience here, to do exactly as you suggest, Senator.

Senator WYDEN. And one other question, if I might, with respect to clean energy jobs and technology. In both of them, and I have enjoyed talking with you about this, Mr. Turk, both grid resilience and clean energy jobs in technology are going to take bringing science-based decision-making back to the Department of Energy. I believe you are going to do that with Secretary Granholm, and that is why I am going to be supporting your nomination.

Now, in addition to grid resilience, we talked about clean energy and how it and climate change, addressing climate change, go hand in hand. And together, if you do them right, you create high skill, high wage, clean energy jobs. Now, the Department of Energy, with its research and vast array of technologies, is poised to not only lower its emissions, but to mobilize a workforce as well. Tell us a little bit about how you would use these new technologies to create new clean energy jobs.

Mr. TURK. Well, thank you, Senator and thank you for spending some time talking with me, not only on basketball which is a passion we both share but more generally—

[Laughter.]

Senator WYDEN. —won last night.

[Laughter.]

Mr. TURK. Good.

Just a few thoughts responding to your questions. First, on science-based decision-making, I've worked in a variety of different jobs throughout my career, national security, energy, et cetera and one thing from the International Energy Agency, my most recent, my current employer, it is a data-driven organization. The challenges that we face in the U.S. on energy, on climate change, are too important not to base our decision-making on solid facts, on solid data, on solid analysis. So I completely agree with that point.

And then, secondly, we are in the midst of a clean energy revolution. It's incredibly exciting to see the price points and where they've come on solar, on wind, on a range of clean energy technologies. We need a wide array of energy technologies. And the jobs associated with those clean energy technologies. If we're smart, and this is not going to be something that's easy or going to happen overnight, we're going to have to work at it day in and day out, but it's something I'm particularly eager for, if I'm confirmed to be the Deputy Secretary of Energy.

Senator WYDEN. Well, there are a variety of paths for getting there. As you know and we talked about, there are 44 separate tax breaks for energy. Many of those breaks date back to yesteryear, and I have an effort to collapse those 44 into 3. And so, there are a variety of strategies we are going to want to work with you and Secretary Granholm on.

I have a little bit of time left, but I want to shift to another hat that I wear on the Intelligence Committee, and that is the need to address the challenge of cybersecurity. I think we have seen, and saw it again just a matter of weeks ago, that some of the challenges are with countries who certainly do not always wish us well. So tell us, if you would, about some of your priorities. What are the couple of things you want to work on in the cybersecurity area right out of the gate?

Mr. TURK. Well thank you, first of all, for your chairmanship of the Finance Committee which is incredibly important on all sorts of issues, but especially on the tax incentives or others, kinds of incentives that the Finance Committee has jurisdiction in. I know the 48C piece of legislation on manufacturing incentives was introduced recently by Chairman Manchin, Senator Stabenow, that's another exciting tool in the tool belt, if I could.

Completely agree with you, Senator, on cybersecurity. It's a challenge for us today and it's going to be an increasing challenge for us in the coming days, weeks and months as well. It's an issue I focused on in a variety of different previous experiences. I think it's something that we need to look by building grid resiliency in by design. This is something that there's a very important technology component to it, but it's a very important procedures and practice perspective, not only from the Federal Government, but working with private utilities, companies, so that everybody builds digital resilience in. There are going to be attacks. There are attacks on a daily basis, on an hourly basis to our grids. We've just got to get ahead of the curve as much as we possibly can. And the Department of Energy has some terrific capabilities, including in the national labs, to work with the Department of Homeland Security, the White House and others to be a part of the solution here.

Senator CANTWELL. Thank you.

Senator WYDEN. Thank you, Madam Chairman.

Senator CANTWELL. Thank you.

Senator Lee.

Senator LEE. Thank you, Madam Chairman, and thank you for being with us, sir, and for your willingness to serve, if confirmed.

In some parts of the world, including many parts of Asia, coal generally and a type of coal that burns dirtier than what much of what we produce in Utah and in other parts of the United States

still makes up an overwhelming majority of the energy mix. In light of the fact that they are burning a lot of that to make energy in Asia, do you think that in order to bring down emissions in the short- to mid-term, that we are going to need to continue to export LNG and, in some instances, cleaner burning coals like those we have in Utah?

Mr. TURK. Well, thank you, Senator, for the question. And as I've mentioned, I'm a firm believer that energy is good. It's emissions that we really have to focus on. And CCUS is a technology, other potential solutions as well. I look forward, if I'm confirmed, to working with you, working with other Senators who are interested in those technologies to try to really bring them to scale. We've only had the tip of the iceberg on CCUS technologies. We really need to get going with that.

Senator LEE. What about LNG though? On the LNG component though, it would be better I would imagine for the environment if there were countries that are still relying primarily on coal for generating electric power to start burning natural gas rather than coal, particularly the dirtier coal, would it not?

Mr. TURK. So under the Natural Gas Act the Department of Energy needs to make a national interest determination if it's for gas, LNG, going to a non-free trade association country and one of the things that should be taken into account, along with a lot of other things, is what is that gas displacing or substituting for where that gas is going? If it's going to countries, Caribbean countries, others where it's diesel or where it's coal, then you would have a net positive in terms of the climate benefit on that. But it's a very particularized determination.

Senator LEE. Right.

I guess I am just trying to understand, in that circumstance, if that is what we would be replacing why wouldn't we want to export it? If there is demand for a U.S. product and that U.S. product would be better for the environment, what would be the downside of allowing it to be exported?

Mr. TURK. So again, it's looking at each application, the particular circumstances of that application. If I'm confirmed, I would certainly be part of that effort trying to look at it in that particular circumstance.

Senator LEE. Yes, no, no, I get that. I am just trying to imagine what that circumstance might be, if you looked at one and said no, this isn't going to go. What sort of circumstance might get you there?

Mr. TURK. Well again, I don't—I've not been confirmed yet. I hope I would have the support of this Committee and Senators to take into that job and I think we need to see the particular circumstances. I certainly wouldn't want to prejudge any particular circumstances coming before the Department.

Senator LEE. Do you support an administrative moratorium on oil and gas leasing on federal lands?

Mr. TURK. So this is a Department of Interior jurisdiction. I understand it's a pause. It's on federal lands. It's not on state and local lands. And it doesn't impact current leases and there are a backlog of those leases going on as well. So from the Department of Energy perspective, I think we're a solutions catalyst. I think it's

a phenomenal department, I hope to be a part of again. And I think the Department of Energy role here is to try to promote technology solutions to try to use its levers so that we have a full swath of clean energy technologies, have a full swath of job opportunities, whether it's critical minerals, CCUS hydrogen, full range of opportunities.

Senator LEE. Okay. On that topic of the full range of opportunities, one of President Biden's objectives is renewable energy and a lot of his objectives for renewable energy are going to require mineral access and mineral production. Do you support the domestic extraction and production of minerals?

Mr. TURK. So I think critical minerals is a huge opportunity space for the U.S. A, to get out and improve our national security because we're relying too much on some of those national critical minerals from countries, China, the Congo, et cetera. An average electric vehicle uses five times the critical minerals as an internal combustion engine.

Senator LEE. Right.

Mr. TURK. So critical minerals, even more important. So I think we need to work on the full supply chain, sustainable mining—

Senator LEE. And so far as you need those minerals and those minerals have got to come from somewhere, I think it is safe to say that the United States has better environmental restrictions in place than many, perhaps most, in some cases all, of the other countries from which we could obtain them. It seems to me that it would be better to get those here, given that it is done in a much more environmentally responsible fashion here. Do you disagree with that?

Mr. TURK. So I think there's a very compelling national security case. There's a compelling jobs case. Of course, there are other agencies, other departments that will be making decisions on this issue. Department of Energy is part of the table entering into those discussions. And if I'm confirmed, I look forward to doing what we can from the Department to have, as Secretary Granholm so eloquently has put it, have a real plan on critical minerals, all the way through the supply chain and be very aggressive about that. And very much look forward to working with you, Senator, on that and others who are interested in that issue.

Senator LEE. Thank you. Thank you, Madam Chairman.

Senator CANTWELL. Thank you. Thank you, Senator Lee.

Mr. Turk, congratulations on your nomination. I wanted to go over a few very important issues for us in the State of Washington, particularly at Hanford. There have been some changes in how the defense contracts work, particularly with subcontractors. One of the goals I think we have is to have a more efficient and effective regime. In the long-term, I think it will probably be a positive thing, but in the short-term, we are seeing some loss of small businesses because of this.

Will you commit to work with us on these issues to make sure that during this time of the pandemic, we are not losing a core infrastructure? The whole reason why this is important is, nobody wants this to be all about big, prime contractors. People want other small businesses in the tri-cities to get parts of the defense contracts. If the change we are making is about more efficiency, but

in the end, gets rid of this layer of small businesses and they are not there to do the subcontracting work, it is not going to be a positive result. Will you work with us to ensure a smoother implementation and to help those small business and the small business infrastructure of the tri-cities?

Mr. TURK. Well, absolutely, Senator Cantwell and thank you for your years of focus on what is the largest cleanup site and incredibly complicated in the DOE's jurisdiction. I know it's a priority for you. It will be a priority for me if I'm confirmed as Deputy Secretary. And the particular—

Senator CANTWELL. Right.

I am going to ask you a couple more questions, sorry.

Mr. TURK. No worries.

Senator CANTWELL. Are you committed to proposing funding for Hanford that aligns with the tri-party agreement milestones, and do you commit to meeting all the tri-party agreement milestones?

Mr. TURK. I know there's been a lot of frustration with the previous administration to lowball their funding requests here in a way that's not helpful for the process and I'd certainly look forward to working with Secretary Granholm to make sure that we have the kind of funding, the kind of budgeting to be helpful. And just on your particular circumstances in Hanford, I want to get to that, absolutely look forward to working with you on that.

Senator CANTWELL. Well, right, thank you.

And then on HAMMER, which is a workforce continuum of opportunity to train the workers on the safety and security they need to do this job. Do you support the Hanford HAMMER Center?

Mr. TURK. Well, we need to have our workers safe. We need to have the skills. We need to have the small businesses taken care of, just as you mentioned. So, yes.

Senator CANTWELL. Okay. Thank you for mentioning the 2020 bill, and I thank my colleague for helping get grid modernization as part of that. I think nobody here in the Committee would be surprised to know that we have had vulnerabilities in our grid. We have all been trying to focus on it, but certainly the big storm that hit the United States, Uri, that had impacts not just in Texas, but in the upper Midwest, caused a lot of problems. I mean, the storm caused rolling blackouts. Everybody is hearing the stories about Texas, but in the Midwest, Midcontinent Independent System Operator had problems, and so did the Southwest Power Pool region. These are issues that people are starting to talk about. I think the damage from Uri is something like \$100 billion.

One of the things we need to discuss is more resiliency and more effectiveness of our grid. There are people that think that we can invest more in transmission and interconnectivity to help decarbonize, but that also includes reliability and addressing the risk of cybersecurity that my colleague from Oregon was also bringing up. Do you agree with reports that upgrading the transmission capacity and adding new capacity helps us by both decarbonizing and actually helping lower electricity costs?

Mr. TURK. Absolutely. The investments we need to make in the grid—and thank you for your leadership on this issue for many, many years—are absolutely critical to achieve our climate change objectives, to achieve our resiliency of our grids and to make sure

that the power stays on, even in times of challenge. We need to do better.

Senator CANTWELL. What would you do as Deputy to help elevate this issue?

Mr. TURK. So we've got phenomenal talents at the Department of Energy, not only at headquarters, but throughout the national labs, whether it's PNNL, that you know very well, or NREL or others, and we need to take that work. We need to work with our interagency colleagues. We need to work with the Congress and really come up with a much more robust game plan for how we deal with these issues. So I look very forward to working with you on that issue.

Senator CANTWELL. Great. Well, I definitely think we need to make more investments. We are going to have another round of discussion on infrastructure. I definitely plan on proposing more investments in the grid as part of those infrastructure goals for the United States.

I think Senator Daines is next.

Senator DAINES. Thank you, Chairman Cantwell.

Mr. Turk, thanks for being here today. Thanks for your willingness to serve. I would like to invite you out to Montana to see firsthand the many issues that we are talking about today and to follow up on a conversation that we had prior to this hearing. I know you have traveled a lot in your life, but I believe there is no place like Montana, that we have rich natural resources. We have a diverse energy portfolio, and I think we struck a good balance between natural resource jobs, what that does for our economy, and our tax base, as well as conservation.

But I would like to start by focusing first on critical minerals, following up on some of the questions Senator Lee asked earlier. Domestic critical mineral production creates high paying jobs in Montana. It helps bolster our rural communities who are really struggling across our state. And importantly, as you mentioned, it strengthens U.S. national security. But I believe there is disconnect between the discussions that we were having about expanding renewable energy production and how we source the raw materials we will need to build out these new energy facilities. It takes raw materials. It takes raw materials that are mined from the earth. And there, you know, there is a movement afoot that wants to keep everything in the ground, coal, natural gas, oil, as well as all minerals and I think that is a dangerous ideology as we think about the future for our country. If the Biden Administration is serious about expanding renewable energy, protecting the environment, increasing good, high paying jobs and protecting our national security, then it should be serious about expanding domestic mineral production.

Mr. Turk, you spent years working on international and national security issues. Do you share my concerns with the mineral supply chain as it relates to renewable energy?

Mr. TURK. So the short answer is, absolutely.

And thank you for the time that you made to have a conversation with me earlier. I have to say I'm incredibly jealous that you get to go to Montana on a regular basis. It's an incredibly special place.

I'd be happy to come out there and visit with you and your constituents.

And I couldn't agree with you more on the importance of critical minerals. It's not only an opportunity, as you said, for jobs, for well-paying jobs, throughout the supply chain, but I think it's a responsibility. It's a responsibility from a national security perspective.

Senator DAINES. One of the questions I had during the nomination of now-Secretary Granholm was, she agreed that it was important to promote responsible domestic mineral production for renewable energy. Would you find agreement with her thoughts there?

Mr. TURK. So, as hopefully my new boss, I will agree with everything that she says publicly, of course. And on this, I certainly agree with her on that. And I would look forward, if I'm confirmed, to have the DOE and the labs focus their solutions catalyst powers to try to make sure that we can do the mining as environmentally friendly, as responsible as it possibly can so that we can have the whole chain on critical minerals.

Senator DAINES. And when you think about DOE, what role do you think they should play in securing the critical mineral supply chain?

Mr. TURK. So I think DOE can have a huge role. The clean energy technologies of the future, the electric vehicles, as I mentioned, five times the amount of critical minerals. There's a lot of analysis that we can do. There's a lot of innovation that needs to take place throughout the supply chains to reduce costs and to make sure that these critical minerals are available as cheaply, as environmentally responsible as they can play. So I think DOE has a number of roles, important roles, and working with other important departments, of course.

Senator DAINES. You know, it was just last Congress, in fact, Chairman Manchin, myself, others on this Committee were successful in getting the REACT legislation signed into law. This bill directs DOE to help develop methods of extracting the rare earth elements actually from coal. If confirmed, will you prioritize this new bipartisan program?

Mr. TURK. Well, congratulations on that particular piece of legislation and I would, if I'm confirmed, absolutely look forward to working with you and your staff on that.

Senator DAINES. I want to shift gears and follow up with a conversation that we had, the good conversation we had prior to this hearing regarding CCUS. The International Energy Agency, which you have had numerous leadership positions at since 2016, states and I quote, "reaching net zero emissions will be virtually impossible without CCUS." I believe Montana can and should play a major role in the future development and commercialization of CCUS technology. As we chatted, we have a global responsibility as global stewards of the environment to ensure that we are leading in this technology because that will help places like China, India and others, as they think about the need to reduce emissions.

My question is, under your leadership will DOE prioritize carbon capture technology in order to reduce emissions while at the same time protecting and expanding our Montana energy jobs?

Mr. TURK. So absolutely and to get to net zero by 2050, which is what the President has put on the table and I completely support, we've got to work quickly and we've got to work on a wide variety of technologies. This is going to take a wide swath of innovation, working in technologies. CCUS is an incredibly important technology now. It could be even more impactful in the future, but we've got to go to scale, go to scale on it. And my hope is, as should be the case in every area, the United States should be leading the world on these technologies with all sorts of market opportunities for our companies as well. So I look forward to working with you on that as well, Senator.

Senator DAINES. Thank you, Mr. Turk.

Senator CANTWELL. Thank you.

Senator Heinrich.

Senator HEINRICH. Welcome, and congratulations on your nomination. In particular, thank you for the time you spent talking with me yesterday. We very much look forward to getting you out to New Mexico as well to visit Sandia and Los Alamos and WIPP. I want to focus my first question on something we spoke a lot about yesterday, in particular, with regard to current communities in oil and gas basins. I want to get your thoughts on the long-term role that hydrogen is going to play in solving some of the challenges that we currently solve with hydrocarbons, and in particular, the relationship between today's upstream oil and gas sector and the potential to use much of that engineering and workforce to really catch up to the rest of the world with respect to hydrogen?

Mr. TURK. So thank you, first of all, for meeting with me before this hearing. I very much appreciated that conversation. And just as with Senator Daines, I'm jealous that you get to go to New Mexico on a regular basis. One of the favorite places I ever traveled with my parents was to Chaco Canyon which is just a remarkable place for those who have not had a chance to go there.

I enjoyed our conversation, in particular, on hydrogen. As you know, it's a technology I focused on. I helped co-lead an extensive report, the most ever analysis we did at the IEA on hydrogen for the G20. And I think there's huge opportunities for hydrogen as a versatile part of the clean energy future, whether for hard to decarbonize industrial applications or long-distance freight, hydrogen has a lot of capabilities, a lot of qualities that lend itself toward being very useful in the future. We need to drive those price points down, certainly with green hydrogen from electrolysis which is why blue hydrogen, that is hydrogen with natural gas, in particular, with CCUS can be an incredibly important part of getting hydrogen at scale, clean hydrogen, carbon-free hydrogen. And as we analyze in our report and as we talked about, one of the key opportunities there to jump-start this hydrogen is look at where we have industrial clusters, look at where we have those workers who have worked on technologies that can be useful in hydrogen, take advantage of that, make the investments there and really get it to scale and use those hubs as a, really, jumping-off point for broader application of hydrogen.

Senator HEINRICH. Yes, I appreciate that very much. There is a growing interest, in particular—we have two basins in the state, and in particular I've seen a lot of interest coming out of the San

Juan Basin—for making that transition to hydrogen and using the existing infrastructure to support that transition as well.

Talk to me a little bit about transmission and how we do a better job of stimulating additional investment there, and the role that DOE can play when, obviously, much of the challenge there is siting, local jurisdictions, and dealing with multi-state challenges of moving transmission across multiple jurisdictions. But really, what can DOE do to help us facilitate transmission planning more effectively and jump-start this so that we can better match up our clean generation with the areas of demand?

Mr. TURK. So I think transmission is an absolutely key issue that we need to focus on more, not only at DOE but in other parts of the Federal Government. Secretary Granholm has spoken extensively about this. This is an area of passion for her, rightfully so, and if I'm confirmed, I would certainly look to do whatever I can do to help on that front. We've got some great capabilities in the Department, including the national labs that have focused on transmission in the grids more generally and really trying to map out where we need transmission, how to deal with some of the issues going forward.

One area at the Department that I'd be particularly eager to boost back up is the Policy Office at the Department of Energy. During Secretary Moniz's days in the Obama Administration, when I worked there, the Policy Office was a very robust office. I think it had 80 or maybe even more people in that office. Unfortunately, the Policy Office now is maybe four to five people. It's been very much shrunk back. I think we need to boost that up so that we can think about these transmission issues holistically, across the country. And then we need to work with FERC. We need to work with state and locals. We need to work with utilities and make sure that we don't just have nice reports, we need to actually move on the transmission side of things as well.

Senator HEINRICH. I appreciate your approach there, because it is important for DOE not to just produce reports, but to engage and find solutions to move these things forward.

Senator CANTWELL. Senator Murkowski.

Senator MURKOWSKI. Thank you, Chair. And Mr. Turk, thank you for being here, but also thank you for your work with IEA and with our friend, I certainly consider him our friend, Dr. Birol. I also want to thank all of those at IEA for the opportunity to serve on the Global Commission on Energy Efficiency. That was a learning experience for me and I hope it was beneficial.

I appreciate what you have shared with the Committee about your interest in critical minerals and the role that plays, the focus on the full supply chain. I think we have recognized and several of my colleagues have pointed out the resources that we have here, what we can provide and to your point, that it is not only about jobs, but it is a security issue as well—a national security and energy security. So I look forward to working with you on that.

You also mentioned the Energy Act and thank you for recognizing the contribution that came from this Committee and the work that Senator Manchin and I did to facilitate that. As you know, within that Act, we provided some new flexibility, eligibility and expansion and transparency for the Title 17 loan program.

This is going to help DOE not only finance large-scale projects and distribute funds that way but also to make them available to state-level entities to finance smaller projects. And as you know, in Alaska we either have the huge, huge megaproject-like proposals for a natural gas pipeline or we have smaller projects. We have one that I am really interested and excited about. It is out near Dutch Harbor. This is the Makushin Volcano and they are looking to tap into that geothermal resource there to basically displace diesel in that community and really work to reduce all levels of emissions.

So the question to you is whether or not or how, I guess, DOE will allocate funding to these state-level financing entities, recognizing that that is really going to be key in terms of resources to, again, some of these smaller-scale projects. In addition to speaking to how that might be allocated, I guess I would like to know that you will commit to better understanding some of these projects that we have in Alaska that provide great opportunity, whether it is Makushin and an opportunity for folks to meet with you and share with you what is going on with that specific project or others. That takes a trip to Alaska, oftentimes, and we are happy to host you out there, but can you speak to the Title 17 and the opportunities that providing resources to our state-run entities can be helpful for smaller-scale projects?

Mr. TURK. Well absolutely, Senator. And I have to say with my IEA hat on, thank you for all the partnership with Dr. Birol. The IEA is a very special organization and having you be such a partner, including on the Commission, was incredibly important. And congratulations for the Energy Act. I look forward to further discussions on critical minerals.

On the loan program, and Secretary Granholm has spoken about this as well, I personally think this is a huge area of opportunity for the Department, for communities around the world. Just yesterday it was announced who the new Head of the Loan Program is going to be, Jigar Shah, who is an incredibly dynamic colleague and I think he'll be a terrific leader of that. But we've got to make the loan program and other parts of DOE work, not just for big projects, as you say, but for smaller projects in smaller communities as well. Growing up in a town of 9,000 people, I know what the kind of employment means in those kinds of communities.

So I absolutely would love, if I'm confirmed, working with you, working with your staff, making changes that are necessary to the loan program or other parts of what DOE is working on to make sure everyone benefits, all countries, all states, all communities, can benefit from these opportunities.

Senator MURKOWSKI. Well, it is a considerable initiative and, again, we want to make it work at all levels.

One of the things that you have indicated a great deal of interest in is the Arctic Energy Office. I have had an opportunity to speak to Secretary Granholm about this. Last year we worked to reestablish that. There is a pretty great partnership going on with the Cold Climate Housing Research Center and NREL, the National Renewable Energy Lab. I look at partnerships like that as really key to what we are going to be able to do with not only developing critical infrastructure within the Arctic but also what we are doing

to help gain additional efficiencies, advancing the technologies that will allow us to do a little bit better in different spaces.

So very quickly because we are out of time here, but what is your view in terms of what we can do to focus on DOE's role as it relates to the Arctic?

Mr. TURK. So as we were talking a little bit before the hearing, I've had experience in Arctic Council activities when I was with the State Department. It's a shame that not more Americans appreciate and understand that the U.S. is an Arctic country, very importantly.

Senator MURKOWSKI. We are working on that.

Mr. TURK. Hopefully we can make progress on that piece. I think the Arctic Energy Office is an incredibly important office. It's too small right now. We need to work on that. And I think there's an awful lot of partnership the Department of Energy already has and can have even more of. If you think of the energy challenges that communities in Alaska face, but also the huge opportunities, whether it's on critical minerals or elsewhere. So if I'm confirmed, I absolutely would love to work with you on this further.

Senator MURKOWSKI. Well, we would love to work with you. We would encourage you to consider a visit when we are all more able to be traveling. But many, many challenges and we would like to work with you again on some of the international Arctic policies as well.

Thank you, Mr. Chairman.

The CHAIRMAN [presiding]. Thank you, Senator.

Next we have Senator Hoeven. No, I'm sorry, we have Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman. You got the "H" right.

[Laughter.]

Senator HIRONO. Mr. Turk, I ask the following two initial questions of every nominee who comes before any of the committees on which I sit.

The first question; since you became a legal adult have you ever made unwanted requests for sexual favors or committed any verbal or physical harassment or assault of a sexual nature?

Mr. TURK. No.

Senator HIRONO. Have you ever faced discipline or entered into a settlement related to this kind of conduct?

Mr. TURK. No.

Senator HIRONO. Mr. Turk, I was very pleased to hear you say that you want to restore and beef up the Policy Office, which has plummeted from, I think I heard you say, 80 people when you were there to some four or five. I am totally supportive of the need to make sure that our Policy Office is able to do what they should be doing. And also, another office that I am concerned about is the Energy Efficiency and Renewable Energy (EERE) Office, which has also declined in employment. I hope that you will also beef up the EERE Office.

Mr. TURK. Well, thank you, thank you, Senator. I was the Deputy on the Energy Agency Review Team and we took a very close look at EERE. And what we saw is despite the funding increases that the Congress appropriated—

Senator HIRONO. Yes.

Mr. TURK. —to EERE over the last several years, the staffing levels did not increase commensurate with that funding. So we have a backlog right now, an opportunity to really bring in a huge amount of new talent in EERE. And if I'm confirmed, I look very much forward to being helpful to move that along and to get EERE fully staffed up.

Senator HIRONO. I think it is really important for this Department to have the staffing necessary because, as you noted, this is a department that should rely on facts, data, and information, in order to make its decisions.

You may know that Hawaii has an ambitious goal of reaching 100 percent renewable energy power and a carbon neutral economy by 2045, and DOE has been a key partner for Hawaii in developing and progressing toward its goals. And just as some of my colleagues have invited you to visit their states, I would invite you to come to Hawaii. One of President Biden's key goals is to take action on climate change and help build back the economy and create new, well-paying jobs for people working in clean energy and improving energy efficiency.

You noted that we are in the midst of a clean energy revolution, and that there is a need for a wide range of energy technologies. And when you said that, I sensed an enthusiasm on your part in noting that. Can you talk a bit more about how this clean energy revolution can support our economic recovery and create high-quality jobs?

Mr. TURK. Well, thank you, Senator. I'd absolutely love to come visit you in Hawaii and make sure the Department is doing everything it can to support the opportunities there.

I think this is a huge, huge opportunity for us. The Build Back Better plan and program that President Biden has put on the table, the Congress, of course, looking at the recovery part of stimulus funding after this initial bill, is a huge, huge opportunity for America. It's a huge opportunity to transform our grids, to invest in those technologies and again, I am enthusiastic on the wide range of technologies. There's an awful lot of potential technologies that can be such a critical part of the future, but we need to make the investments. We need to make the investments in the innovation. We need to have the partnerships with the entrepreneurs, with the companies, with the investors who are going to take those to scale. So I'm incredibly enthusiastic at this part of DOE's portfolio, I have to say.

Senator HIRONO. I share your enthusiasm.

As noted, you have a wide variety of experiences, and you have a long record of serving in Congress, the Department of Energy, the State Department, the National Security Council, and the International Energy Agency. Can you just discuss the times in your career where you had to help people build consensus and come together, which certainly you would need to do as Deputy Secretary of Energy? Can you describe a time when you had to bring some diverse viewpoints together to build consensus?

Mr. TURK. Well, it's something I enjoy doing. I've had, as you mentioned, a wide variety of experiences where I've had to do that. Maybe it comes from my parents, my two older brothers, younger

sister, where you have to have consensus. We've got three kids, my wife Emily and I, you have to find common ground with your family as well. And as Senator Conrad said, and I hope this comes through, especially if I'm confirmed, all the talk in the world doesn't matter if you don't actually get something done in the real world. And so you've got to have discussions. You've got to listen to people. You've got to try to drive consensus so that we can get on with what we need to get on to in order to get to our carbon reduction targets, in order to have the kinds of jobs that we need to.

So absolutely, throughout my career I've really focused on the consensus building.

Senator HIRONO. Thank you very much. It is important for someone in your position.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator.

Now, Senator Hoeven.

Senator HOEVEN. Thank you, Mr. Chairman. Mr. Turk, good to see you today and thank you for our visit yesterday. We talked a lot about carbon capture and underground storage. Doctor Fatih Birol, your former colleague out of the IEA, said that CCUS is the most important technology that exists in energy today. And as you know, in North Dakota we are leading the way forward on, what I call, cracking the code which is capturing and storing CO₂ from coal-fired electric plants, as well as I told you on ethanol plants.

So my first question is, do you agree that CCUS is indispensable to marry the benefits of low-cost energy with environmental stewardship?

Mr. TURK. Well, absolutely, Senator. And thank you for taking the time to talk with me a few days ago and it was incredibly impressive to hear all the progress when you were governor and as a Senator, really leading ahead of the curve on CCUS and really moving the envelope on that. I think it can be an incredibly, it already is an incredibly important technology, but we've really got to get to scale here. And we need not only the Federal Government moving in that direction, we need the incentives, the price signals going forward, but we need corporate leadership and state and local leadership on this as well. And thank you for all the terrific efforts you've done in North Dakota.

Senator HOEVEN. Well, that—your answer is going in exactly the right direction. It leads right into my next question that is, will you work with us to ensure projects that we are working on, whether it is Project Tundra, whether it is cooperative agreements between the EERC at the University of North Dakota and the Department of Energy, whether it is our efforts to make sure that we enhance 45Q and make sure that we can utilize the DOE and the RUS Loan Programs so that the plants can put this equipment in place and then, as you say, we can, through a partnership between the industry, our state and the Department of Energy, actually make this happen. Are you committed to making that happen?

Mr. TURK. So absolutely, Senator. If I'm confirmed, I very much look forward to working with you and your staff, whether it's Project Tundra or the terrific partnership with the University of North Dakota. And let me just highlight, in particular, especially

for you and other Senators involved in 45Q, how important that piece of legislation is and we really need to get it up and running fully and take advantage of those incentives.

Senator HOEVEN. Right. I appreciate that you worked with my former colleague, Senator Conrad. It was nice to hear from him this morning. So I know you have been to North Dakota, I assume many times, but you will commit to come out to North Dakota and, of course, see what we are doing? I have already invited the Energy Secretary and she has committed to come out. But you will come out and see what we are doing and work with us on it?

Mr. TURK. Any excuse I could get to come back out to North Dakota, Teddy Roosevelt National Park. I've been to North Dakota both in the summer and the winter. I think I'd prefer to come out in the summer, but happy to come out in the winter as well.

Senator HOEVEN. Well that is great. No, you can do your winter trip to Hawaii and then come see us in the summer. That would work very, very well. And again, we had a good conversation today. I appreciate your commitment to work with us on the CCUS. I just think it is an incredible opportunity for us to do some amazing things there.

Pipeline infrastructure—we need transmission. We need pipeline infrastructure to move energy around the country safely and cost-effectively whether it is renewable or traditional energy. Are you committed in helping to develop the energy infrastructure we need?

Mr. TURK. So we've got a huge opportunity on energy infrastructure, I think, and very much look forward, Senator, working with you, if I'm confirmed. And I think we have an opportunity with, as we discussed, CO₂ pipelines, in particular, so that we can take emissions, the CO₂ where it's happening, whether ethanol plants or otherwise, and bringing it to places where there's storage opportunities. So eager to work with you on all of those issues.

Senator HOEVEN. And again, you recognize the value of the cooperative agreements and are committed to them with energy centers like the Energy Environmental Research Center at the University of North Dakota. Do you support those kind of partnerships with the Department of Energy?

Mr. TURK. So I think those kind of partnerships are absolutely critical and as you know, we need not only smart people in DC, we need smart people around the country, smart people who grew up in their communities and know their communities best so that we have tailored solutions for particular geographies, particular communities. So I think those partnerships are absolutely critical.

Senator HOEVEN. And then the last area is commitment to the national labs and the update in the research that is necessary for our nuclear deterrent—committed to support that effort?

Mr. TURK. So, completely agree. As we've talked about Minot Air Force Base, in particular, plays such an important role, two legs of the triad, just at Minot and it's an incredibly important part of the jurisdiction at the Department of Energy. And I certainly look forward to working with you, if I'm confirmed, to make sure that we have a safe, reliable, secure stockpile.

Senator HOEVEN. Good. Thank you. Thank you, Mr. Turk, and I really do look forward to working with you.

Thanks so much.

The CHAIRMAN. Thank you, Senator.

Senator KING.

Senator KING. Thank you, Mr. Chairman.

First, I want to emphasize something you were talking with Senator Murkowski about, which is partnerships. We have a partnership between the University of Maine and Oak Ridge National Laboratory on additive manufacturing and cellulosic materials used in additive manufacturing. It is very productive, and I commend it to you. I hope that is the kind of relationship that we can continue to maintain, support, and expand.

Mr. TURK. So, thank you, Senator King and thanks for meeting with me as well before the hearing. I very much appreciated our conversation. And I think there's all sorts of partnerships that exist, offshore wind among the additive manufacturing, other areas and I very much look forward to strengthening those partnerships.

Senator KING. Great. I will look forward to welcoming you to Maine. You are going to have quite a tour between North Dakota, Montana, and New Mexico, and I hope you can add Maine to the list.

Mr. TURK. Well, Maine is a beautiful state, Acadia National Park and all else in Maine. So, happy and eager to get up there.

Senator KING. Well, we are looking forward to it.

Methane, I believe, is the low-hanging fruit of climate change. And to the extent the Department can sponsor, through ARPA-E or other programs, research in terms of methane control and capture, I think that is an enormously important part of the work that you can do. As you know, methane is 80 times more potent a greenhouse gas than CO₂. It resides in the atmosphere for a shorter period. So if we can cut the amount of methane that is going into the atmosphere, that is a big deal. I understand that there is a project with Bridger Photonics in Bozeman, Montana, working on high tech ways to detect these leaks. That is the kind of research and development that I think we need, and I hope methane can be a focus of your attention because it is intimately related to energy production and energy generation.

Mr. TURK. Well, I couldn't agree with you more. Methane not only needs to be a focus of the Department of Energy and if I'm confirmed, my focus, but frankly, all of us. It's an incredibly, it's incredibly frustrating that we have so much methane emissions in the U.S. and other countries around the world when we have cost-effective solutions and actually make money in many circumstances, so—

Senator KING. Yes, this is a place where we do not have to spend a fortune. It is relatively low cost in terms of the benefit.

Let me move on. After methane, I think, and is equally important in the long-term energy picture, is storage. I do not think there is anything more important that you can do, along with research on methane, than research on storage. We need 100-hour grid-scale storage. Once that occurs, the potential of renewables will be truly unlocked, and I see that as one of the most important things you could do. Talk to me about storage and where it will be on your priority list.

Mr. TURK. So storage needs to be at the very top of the priority list. It's an incredibly important technology. One of the things I'd

be particularly excited about, if I'm confirmed at the DOE. We've talked about these Earthshots to really try to have ARPA-E, the labs, the applied offices, all working together, seamlessly across the Department of Energy enterprise and Long Duration Storage Earthshots, I think, makes a ton of sense to make sure that we're doing everything we possibly can, especially with that Long Duration Storage, as you suggest.

Senator KING. Well, one other aspect of that—and this ties back to your current, or your most recent, occupation—is that I have always thought this would be something that we should be pursuing internationally. Why should everybody be trying to invent the same thing? And if there can be international collaboration on development of a technology that will help the entire world, it seems to me that the Department of Energy ought to also be focused on fostering that kind of collaboration on these joint problems.

Mr. TURK. Well, I completely agree. The U.S. is the innovation powerhouse. Has been. Needs to be. But take storage, if we had storage solutions, long duration, cost-effective, storage solutions, you look at a country like India. India, over the next couple decades will build an additional grid the size of Europe on their already sizable grid. If they had storage solutions that allowed them to go even further in solar, even further in wind, then they wouldn't have to build so much, so many other kinds of sources that are more carbon intensive. So storage is a key part, not only in the U.S. but internationally.

Senator KING. Of course, a molecule of CO₂ does not care what country it comes from, as far as its impact on the climate.

Mr. TURK. Well, that's right. I think that's why we have to, the U.S. should lead here. The U.S. should lead ambitiously.

Senator KING. One final question for the record, because I am out of time. In terms of grid modernization, is the problem wires and poles or is it software and technology? In other words, is the grid inadequate physically, or is it a question of management and the technology of integrating new power sources, for example?

Mr. TURK. So I think it's both and we need to have the planning to take into account the technology piece, but also the management piece as well and to be really holistic, forward thinking, building the grids of the future. We've got transmission issues we need to work on in parts of the country. We've got distributed energy resources coming on to the grid. We need to have the grid that can appropriately deal with those.

Senator KING. But the grid of the future does not necessarily involve lots of new wires and poles. It may involve more of the technology of integrating resources.

Mr. TURK. Well, absolutely right. We need to be smart. We need to be smart and cost-effective about this, and the solutions of the past don't need to be the solutions of the future.

Senator KING. Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Lankford.

Senator LANKFORD. Mr. Chairman, thank you very much.

Mr. Turk, good to see you and thanks for the long conversation that we have already had. Let me walk through a couple things just to be able to get some high points here.

How many years do you think we are going to continue to have the internal combustion engine used in America?

Mr. TURK. So electric vehicles have made incredibly impressive strides over recent years, but it's still in the single digits percentage for car sales. Now some other countries are ahead of that. General Motors, others are making very ambitious electric vehicle targets, but internal combustion engines will certainly be with us for several more years.

Senator LANKFORD. Yes, you have studied this for a long time. You have looked at some of the length of it. Is that five more years? Is that ten more years? Is that 50 more years? Just based on the studies that you have already been a part of and the teams you have been around.

Mr. TURK. Well, so it's very difficult to predict these kinds of technologies.

Senator LANKFORD. Oh yes.

Mr. TURK. It's the price point. It's range anxiety with electric vehicles and certain applications. So there's a number of things that need to happen for electric vehicles to take off, like can be helpful from a climate change perspective for sure. So it's very difficult to predict where this is going. We do see some countries, Norway has about—50 percent of each vehicle sold in Norway is electric vehicle. Most other countries are in the single digits.

Senator LANKFORD. Right. But still back to my same question, how long do you think we are going to use the internal combustion engine? What are the estimates that are out there? You have read it. What are the estimates that are out there? How long? And I understand there is technology that is very disruptive in every area on this. We talk a lot about electric but then hydrogen continues to say, hey, we are back here as well. So there is lots of other technologies that are rising and all of those are good. I am just asking about the internal combustion engine. What is your best guess on what are the estimates out there?

Mr. TURK. So the way we do it at the IEA is we run scenarios and look at different versions of the future. What does that mean for this technology or that technology and they really range incredibly significantly. Those have been updated in recent time to have more electric vehicles coming on quicker given the corporate commitments, given the other commitments, but internal combustion engines certainly, you know, there's an issue where electric vehicles work quite well for passenger vehicles, more challenging for long, for freight transport as well. So we need solutions there.

Senator LANKFORD. How many years do you think we will still have the internal combustion engine? That was the original question.

Mr. TURK. So—

Senator LANKFORD. Really not trying to be combative, just trying to get that number.

Mr. TURK. Well, and I'm trying to, you know—it depends on a lot of decisions that we don't know from the government side, from the private sector side. It's certainly going to be with us for this decade, next decade. We'll see where the corporate commitments and the other government commitments are made.

Senator LANKFORD. So at least 20 more years?

Mr. TURK. So internal combustion engines, the other thing, a lot of people, I know where I grew up, we kept our car for 10, 15, 20 years.

Senator LANKFORD. Exactly.

Mr. TURK. So we've got an awful lot of internal combustion vehicles right now on the market that will be here for many, many years to come.

Senator LANKFORD. Okay. That is my concern, is that there seems to be a sense in some in DC, and I am not saying you have that sense, that somehow we are going to sell enough Teslas that folks that are driving their 1982 Ford truck are just going to park it. And unless there is some assumption that I don't know of, that so far President Biden has not said and hope he wouldn't say that there's going to be some kind of imposition to say, you have to turn off that vehicle, they are going to be around for a long time.

And a lot of folks, especially folks that are in poverty, because electric vehicles are very expensive to be able to purchase that I don't want to create a mandate on people in poverty to suddenly say your gas prices are going to skyrocket so we are going to force you out of this basically raising your prices and your cost of living. Transportation, obviously, with diesel engines in carrying semi-trucks, every single product that we have is very dependent currently on oil and gas. So again, I am an all-of-the-above energy state. We are proud that in Oklahoma. We, 45 percent renewable is in our mix and I have had multiple different folks from the Biden team that I have talked to that the states they are from are not close to what Oklahoma's fuel mix is for our diversity of fuel and they lecture me about being more diverse in fuel. And I say, I will hear that as soon as you match what we are already doing.

But saying that, I do want folks to be able to know that we cannot make a rapid transition. The folks in my state are very concerned there will be unrealistic expectations that will be put down on people immediately and they will suddenly lose their jobs based on a mandate from someone who is trying to create something rather than recognizing what is. Does that make sense?

Mr. TURK. Well, it makes perfect sense. And from the DOE perspective it is a solutions catalyst and there's an awful lot that the DOE can do to keep reducing those price points. Affordability, I think, is absolutely key whether you're talking about vehicles or electricity. We need to have reliability, security, affordability and clean energy as well. So there's a lot more that we can do, should be doing, to reduce these price points to make these technologies affordable for everyone.

Senator LANKFORD. I know I am a couple seconds over. This is a very quick answer. Energy independence, is that a national security issue or national preference issue, whether it is critical minerals, whatever it may be. Is energy independence national security or national preference?

Mr. TURK. National security.

Senator LANKFORD. Thank you very much.

Thank you, Mr. Chairman.

Mr. TURK. Thank you, Senator.

The CHAIRMAN. Senator Cortez Masto.

Senator CORTEZ MASTO. Thank you, Mr. Chairman.

Mr. Turk, thank you so much for taking the time to meet with me earlier this week, and congratulations, again, on your nomination. You are not going to be surprised by the first question that I ask. We all believe in Nevada that Yucca Mountain is not suitable for a national nuclear waste repository, and during her confirmation hearing, now-Secretary Granholm confirmed that the Biden Administration opposes storing nuclear waste and spent fuel at Yucca Mountain. The Secretary also committed to working with my office and the rest of the Nevada Congressional Delegation in finding workable, consent-based solutions to better address the disposal of our nation's nuclear waste.

So are you in agreement with the Administration's position on Yucca Mountain, and will you also commit to working with the Nevada delegation on consent-based solutions?

Mr. TURK. Well, thank you, Senator and thanks for meeting me, with me ahead of this hearing. And as you said and as Secretary Granholm has said, President Biden has been very, very clear on Yucca Mountain. And I think we need to do exactly as you suggest, take the recommendations of the Blue Ribbon Commission and have consent-based options for our nuclear waste in this country. And we need to think of those incentives that will work for those communities who have their consent so that we can deal with this issue in a rational, reasonable and responsible manner.

Senator CORTEZ MASTO. Thank you. Thank you.

On a separate subject, last year, the State of Nevada finalized an agreement that I helped to secure with DOE to begin removing the one half metric ton of plutonium this year that had been secretly shipped to the Nevada National Security Site from the Savannah River site in South Carolina. And Secretary Granholm has reported that the National Security Administration and DOE are on track to meet this agreement. If confirmed, will you commit to maintaining a strong line of communication with my office and Senator Rosen's office as the agency continues to work to adhere to this agreement with the State of Nevada?

Mr. TURK. Absolutely.

Senator CORTEZ MASTO. Thank you.

Nevadan's trust in the Department of Energy's nuclear program has long been strained. So my question for you is, if confirmed, what will you do to improve communication and help it build back that trust with the State of Nevada?

Mr. TURK. Well, thank you, Senator, and as we talked about, and as other Senators have asked about, I prided myself throughout my career on really listening, really working on the communication and as we talked about, we need solutions that work for particular communities, particular states as well. So I absolutely commit to you to make sure that the lines of communication, if I'm confirmed, with myself, with others at the Department of Energy are very much, very much there.

Senator CORTEZ MASTO. Mr. Turk, thank you.

Last week, the Biden Administration released an Executive Order directing federal departments and agencies to identify ways to secure the U.S. supply chains, including critical minerals, which we have talked about this morning, and large capacity batteries, against any type of risk and vulnerability. Nevada is currently the

only state in the U.S. with an active lithium mine, and we have a number of companies that are in the process of opening battery recycling facilities, which will be essential to helping keep our critical minerals in this country so that they can be reprocessed and fit back into that supply chain.

As the Department looks to implement the order, what role do you anticipate battery recycling can play, and will you be sure to look to Nevada and my office as a resource when it comes to the significant supply chain opportunities that my state has to offer?

Mr. TURK. Well, if confirmed, Senator, I very much would look forward to working with you and your staff on the huge opportunity that critical minerals represent, not only for Nevada, but throughout the country, the national security imperative, the jobs piece, whether that's battery recycling, lithium mining and I think we need to have those long-term signals. We need to have this as a real priority for this country.

Senator CORTEZ MASTO. Thank you.

When we spoke earlier this week, we discussed the opportunities that come with investments in research and development, and the potential for DOE to dig deeper into the deployment of emissions-reducing technologies. I recently introduced a suite of electric vehicles legislation. Among the bills in the package are DOE programs to deploy clean school buses and charging infrastructure in our national parks and forests, as well as legislation to establish an EV commission co-led by the DOE, which would create a national strategy on electric vehicles. If you are confirmed, will you commit to working with my office to ensure that DOE is a strong partner in helping deploy EV technology?

Mr. TURK. Absolutely. As I mentioned, EV opportunities here whether it's passenger vehicles or buses or others are tremendous. I very much would look forward to working with you and congratulations on your legislation.

Senator CORTEZ MASTO. Thank you, and again, congratulations on your nomination.

Mr. TURK. Thank you, Senator.

Senator BARRASSO [presiding]. Senator Risch.

Senator RISCH. Thank you very much. Mr. Turk, thank you for your service and thank you for coming here today to answer our, hopefully not too difficult, questions.

From a very parochial standpoint, I am from the State of Idaho and we have a place called the Idaho National Lab (INL). I look at your resume and I, like everybody, people have specialties and yours seems to be in the climate change lane, if you would. INL plays an important role in that, obviously, because nuclear energy is critical to where we are going in the future. Have you visited the INL by any chance?

Mr. TURK. So I've not a chance to do so. I would love to do so. I'm very familiar with Idaho National Lab—

Senator RISCH. Well, we can help you out by arranging for such a thing. Go ahead.

Mr. TURK. Good, I'd be happy to come.

Senator RISCH. You were saying?

Mr. TURK. Good. I think there's incredible work. I have talked with folks who work at Idaho National Lab. It's, I think, just an

impressive group of folks there, more generally. And on the nuclear issue, more generally, I think nuclear has played such an important part of our carbon-free baseload power historically. We need to work on the lifetime extensions and make sure that we have that capability, in my opinion. And then there's exciting and Idaho National Lab is at the tip of the spear here, exciting, small modular reactors, other kind of advanced reactors as well. So if I'm confirmed, I would absolutely love to work with you and certainly come out and visit Idaho National Lab.

Senator RISCH. Thanks, I appreciate that. You have given a very brief thumbnail sketch of the Idaho National Lab but it has a long history, as you know. It was the birthplace of nuclear power in the United States, in the world and, indeed, in the universe. We still have the first light bulbs that were lit by nuclear energy. We have built 52 reactors there. And as you correctly note, the SMR is a matter in development and it is exciting to see that they are even looking beyond that generation to the next generation, to the microreactor which will change the world, actually, as we go there. And the lab changed the world when it developed the first reactor. We look forward to that. It also has a growing mission in cybersecurity.

In 2018, as you know, the DOE established the Office of Cybersecurity, Energy Security and Emergency Response, more commonly known as CÉSER. And that, the lab in Idaho is playing a major, major role in those efforts and will continue to do so because we have some unique capabilities there. We have been at the nuclear business for many decades and along with that comes expertise in control systems. And so, that is one of the reasons why cybersecurity has gravitated to that. Plus, we have some test beds there that are not duplicated anywhere in the world, really.

Tell me about your view of the Administration's view of nuclear energy and where we are going on nuclear energy.

Mr. TURK. So I think—and again, thanks for Idaho National Lab, as you said, not only leadership on nuclear, but on cybersecurity which is absolutely critical. So on nuclear energy, certainly if you look historically at the U.S. and the current snapshot of where we're at in the U.S., the amount of carbon-free baseload power coming from nuclear is incredibly impressive and a big part of the equation. Some countries have—I've been living in France. France's nuclear numbers are even higher than in the U.S. in terms of the percentage of electricity generation. The big issues in advanced economies in the U.S. and others is do you extend the lifetime of those plants to keep that baseload, carbon-free power for longer or not, a critical issue. And then, again, really focusing Idaho National Lab, other DOE resources, on the small modular reactors, the, as you said, the exciting opportunities for nuclear microreactors or otherwise into the future.

Senator RISCH. Well, I appreciate that. And I would, would you call it business as usual when it comes to going forward with the nuclear in the United States?

Mr. TURK. So certainly when it comes to the small modular reactors and other technologies—whether it's CCUS, offshore wind—there can't be business as usual if we're going to be successful for the American people, to do what we need to do on the climate

change front, to provide the jobs of the future, to really outcompete China and others. So I think on nuclear and these other technologies, it can't be business as usual. We have to have a sense of urgency. We really need to go forward, boldly, in my opinion.

Senator RISCH. I guess maybe that was a bad choice of words, business as usual. You are telling me that your view is that we do need to press ahead with the nuclear option of all of the things that are on the table for us.

Mr. TURK. Well, absolutely, both from the innovation side of things, but also lifetime extensions and making sure that we benefit from that baseload power from the existing nuclear plants as well.

Senator RISCH. Certainly a legitimate effort.

My time is up. Thank you very much, Mr. Chairman.

The CHAIRMAN [presiding]. Thank you, Senator.

Senator Kelly.

Senator KELLY. How about that for timing?

The CHAIRMAN. Perfect. Perfect.

Senator KELLY. Thank you, Mr. Chairman.

Mr. Turk, thank you for your testimony. Demand management is going to be very helpful in expanding renewable energy use in the United States, and Arizona consumers and utilities are turning to smart thermostats and other devices to shift energy consumption during peak hours. I understand that the Department of Energy runs a smartgrid R&D program, and other offices are working on demand response technology. Has DOE or another federal agency, as far as you know, looked into expanding or mandating the use of demand response technology in federal buildings?

Mr. TURK. Well, thank you, thank you, Senator and this is an incredibly important area, smart demand response. I think we've only, and your state is making strides here, I think we've only had the tip of the iceberg in terms of the potential for this kind of technology, especially when you match it up with increasing amounts of solar and wind and intermittent renewables as well. One of the reports I led at the International Energy Agency was on digitalization and energy, really looking at what these digital tools allow us, whether it's thermostats or refrigerators or other kinds of appliances that you can turn on, turn off and manage the loads as efficiently as possible. DOE does do an awful lot in this area. Not only at DOE Headquarters, but also in the national labs, NREL and PNNL and a number of national labs are focused on this.

I think your question is an excellent one. We should be doing more with the Federal Government infrastructure on smart demand response. As Secretary Granholm has said very eloquently, the Federal Government needs to lead by example, build the markets, prime the pump, if you will. And so, if I'm confirmed, this is an area I'd be eager to work with you on.

Senator KELLY. Yes, in Arizona last summer, we had a challenge there. We have three major utilities. When the temperature rises in California, that is where we usually go for increased energy capacity when we are running short. It was a period of a couple weeks, and the utility was able to, when they got in a tight spot, turn down the thermostats in 30,000 homes across the state. These

consumers signed up for this very effective way to get a utility out of a critical situation.

I want to move to electric vehicles for a second. Arizona is a major player in the EV space. Last month Lucid Motors in Casa Grande, which is just outside of Phoenix, built a factory that is going to be capable of producing an EV car about every ten minutes, once they are up to full capacity. So what federal investment or incentives are needed to develop the charging infrastructure, not only in the State of Arizona, but nationally, as we expand the number of electric vehicles on the road?

Mr. TURK. Well, it's terrific to hear of the electric vehicle progress, including the jobs component of it, in Arizona. And as Secretary Granholm has spoken so eloquently and given her experience with vehicles from her time as Governor of Michigan, it's a huge potential opportunity here and we've got to move aggressively. What we need to do is have an all-of-government approach on electric vehicles. DOE has parts of the responsibility, the Department of Transportation has parts of the responsibility, and we need to have a unified strategy, working with you, working with other Senators who are interested in this issue, so that we can claim those jobs, we can claim those emission reductions, we can claim those opportunities going forward.

So very much looking forward to working with you on that, if I'm confirmed.

Senator KELLY. Well, thank you, Mr. Turk, and I yield back the remainder of my time.

The CHAIRMAN. I think that we might just be down to Mr. Marshall.

Senator Marshall, my friend.

Senator MARSHALL. Well, Mr. Chairman, thank you and I am glad you saved the best for last. I would just remind the Chairman, I am very grateful for Senator Risch's comments about the nuclear option being used somewhere other than on the Senate Floor. So it was exciting to hear him mention some other type of nuclear options.

All right, Mr. Turk, congratulations and welcome.

As I start my remarks I want to just start by saying that you and I share so many goals. My goal is that we would leave this, that I would leave this world cleaner, healthier, safer than it is today. And I am so proud that I can say that from growing up in, until to now at least, in Kansas. I think that is an accurate statement.

Let's keep going in the same direction. At the same time, I have a responsibility as a Senator, a grandfather, a father, to what the cost of energy is and as well as the importance of energy independence. Your goal, my goal, is how do we balance those, as I hear you, you know, that discussion. I am going to start just with asking for some simple advice. If you look at the State of Kansas, my home, hit with 11 days of temperatures below zero and like many states, suffered during that time. The State of Kansas and I am very proud of this, 40 percent of electricity is generated from wind. So 40 percent wind, about a third of electricity generated from coal, about 18 percent from nuclear and then whatever else is left. On the other hand, we heat our homes with a lot of natural gas.

Without the coal plants in Kansas, whatever economic impact we would have had, it would have been double or triple. Coal was really, well it was able to keep functioning and nuclear was able to keep functioning in Kansas, for the most part. I understand some other places did not. So if you were giving advice to Kansans and what that mix should look like and what we can do to prevent this in the future, what would be your advice and how would you frame that conversation?

Mr. TURK. So the biggest piece of advice is to have resiliency in all of our energy systems. And I think what we saw in Texas and other states affected by the recent cold spell was we weren't resilient on natural gas. We weren't resilient on coal as much as we could've been. We weren't resilient on nuclear. We weren't resilient on some of the wind turbines as well. So we need to have resiliency across all of these sources and making sure that the electricity grid and the natural gas pipelines all work, all work in a variety of different conditions. So I think the resiliency is the piece where I would focus on and it's, maybe it's not the most interesting topic or the sexiest of topics or what not, but it's the kind of work that needs to be done, day in and day out. And certainly, from the Department of Energy perspective, if I'm confirmed, I think there's an awful lot the Department can do working with state and local utilities to try to make all our systems as resilient as they can be.

Senator MARSHALL. And with the resiliency certainly comes a cost and I think that somehow, we need to factor that into the equation as well.

Let's talk about biofuels, another issue real important to Kansas. What do you feel the future of biofuels are for America?

Mr. TURK. Well, as I've said, and I'm a firm believer in this, to achieve the goals that we need to achieve, whether you're talking about climate change or you're talking about jobs, winning the jobs of the future, we need to have a variety of clean energy technologies, a variety of solutions. From the Department of Energy side, as Chairman Manchin and others have pointed to, the innovation agenda, to drive innovation in all of these areas and technologies. So biofuels is certainly a very important technology, a very important area and we need to keep innovating in all of these. We can't take tools off the tool belt.

Senator MARSHALL. Great.

I appreciate your concise answers. You are probably—it is the most concise answers of anybody I have ever heard up here.

I want to talk about innovation and agriculture and carbon capture. That, you know, right now agriculture is really the only industry out there really seriously involved with carbon capture and there are future opportunities as well. What does that future look like to you, specifically for agriculture?

Mr. TURK. So agriculture has played an incredibly important role of carbon sinks and really taking a lot of the carbon in the U.S. and in other countries as well. But I think there's a lot more potential there. So certainly, if I'm confirmed, working with the Department of Agriculture, others here, to really drive that innovation so that we can have cost-effective—you're right to focus on affordability. We need to make this cost-effective so that this is an important part of the future for farmers, ranchers around the country.

Senator MARSHALL. Well, great.

I just want to brag on agriculture and ranchers. We were the original conservationists doing so many things for this carbon sink, like you describe, and soil health. We have been doing no-till farming on our farm for over 20 years, cover crops and there are certainly more and more opportunities out there. We look forward to working with you in agriculture and energy as well.

Mr. TURK. Well, and I spent my summers going through cornfields and doing something called detasseling where you go through and pick the tassels off of corn plants. So whatever I can do to help you, if I'm confirmed, Senator, eager to work with you.

Senator MARSHALL. Well, we will try to get you out there and do some detasseling in Kansas as well.

[Laughter.]

Thank you so much, and I yield back.

Mr. TURK. I didn't enjoy doing it, just for the record.

[Laughter.]

The CHAIRMAN. Senator Hickenlooper, is he still on the line?

Senator HICKENLOOPER. Yes, I am here.

The CHAIRMAN. Okay, it is your turn, sir.

Senator HICKENLOOPER. Great. Thank you, Mr. Chairman and Mr. Turk, I have enjoyed listening to your answers.

Colorado has 60,000 workers who work in clean energy, and is in the top ten states for jobs in wind and solar. It is a robust and diverse economy that includes construction and manufacturing—in many ways, the fast-growing parts of our economy—and energy efficiency. As you know, DOE's invention and innovation grant program for individuals and for small businesses has been unfunded, or minimally funded, for a number of years. In your opinion, how would more robust funding from DOE to partner with small businesses, universities, and national laboratories help bring more clean energy and energy efficiency to the marketplace?

Mr. TURK. Well, thank you. Thank you, Senator. I think there's an awful lot that DOE can do and do better with small businesses in particular, and you certainly know and understand small businesses given your background. As you know, you have NREL which is one of our terrific national labs there in Colorado. They have some programs already. I think there's one called something like the Wells Fargo Accelerator to try to work with local businesses and to make sure that the labs, not only are providing cutting-edge innovation for the whole country but are working with local partners, local small businesses to make sure that these are innovation hubs. So I personally think there's an awful lot more we can do whether it's with NREL or our other national labs across the country.

Senator HICKENLOOPER. Great. Obviously, as you mentioned, DOE has a large presence in Colorado at NREL, out in Golden, Colorado. I have been there probably at least a dozen times. It is one of the, I think, most intriguing places because they are innovating pretty much every day, and they are playing a leading role in the transition to a sustainable low-emissions energy system, both for our nation and ultimately, for the world. They have a remarkable team of researchers and scientists that are transforming how the nation and the world use energy making sure that as we

develop new energy systems we are not missing any unintended consequences.

I think the development of these critical infrastructures and technologies depends on making sure that they have world class facilities for their research. I think too often we lose sight of the payback we get from investing in labs, lab equipment, and facilities to make sure that there is adequate space for R&D. And I think this helps to attract talent. It helps us retain talent and then it maximizes the benefit we get when that talent, either individually or through the synergy of working together, creates real innovation. I think that enables us to continue to create the innovation that we have seen be so successful in the reduction of costs of all sorts of renewable energy.

Can we get your commitment to make sure we work to ensure that our national labs get the funding for not just the personnel they have, but to make sure that they have the facilities necessary?

Mr. TURK. Well, I'm a firm believer of the national labs, the 17 national labs. They're the crown jewels of innovation, not only for the Department, but for the country as a whole. And as you say, that means making the investments that are necessary in the facilities, the world class facilities that we have at NREL and other labs around the country. I've worked with a lot of colleagues from NREL over the years, the talent at NREL is incredibly impressive, as it is in our other national labs as well.

So I would look forward to working with you, Senator, if I'm confirmed, with others, and I will say, Congress has been such an incredibly strong supporter, year in and year out of making those kinds of investments that we need so that we have those crown jewels, not only for today, but for all our challenges we'll need them in, in the future.

Senator HICKENLOOPER. Great. Well, thank you so much, and I cannot over-emphasize how much I look forward to working with you going forward. I yield the rest of my time.

The CHAIRMAN. Thank you, Senator.

Are there any other Senators, if you are on Zoom, that have not done a first round? Is there anybody on Zoom that we might have missed? If not, we are going to go with Senator Barrasso for a second round.

Senator BARRASSO. Thanks, Mr. Chair.

Just a couple questions considering you have been talking a lot about nuclear power and nuclear issues. I want to talk about uranium. For years, Russia and its satellites have unfairly dumped uranium into the U.S. market. As a result, America, right now, imports about 90 percent of our uranium from other countries and about 40 percent of its uranium from Russia, Kazakhstan, and Uzbekistan. America's uranium production is at a low right now, a low that we have not seen since the early '50's. And we talked about this yesterday.

Do you believe it is critical that America maintains its ability to produce and process our own uranium for our own nuclear power sector in terms of national security?

Mr. TURK. Yes, I do.

Senator BARRASSO. So last year the Department requested that Congress provide funding to establish a national uranium reserve

and put money into that. Can I have your commitment that, if confirmed, you will complete the establishment of the reserve, create the purchasing program and buy American-produced uranium this year?

Mr. TURK. Well, thank you, Senator, for your leadership on this issue for many years and I'm very familiar with the \$75 million that's been appropriated on this. If I'm confirmed, I certainly look forward, not only in this instance, but in other instances, making sure the Department is complying with the will of the Congress, with Article I and certainly look forward to further talking with you and your staff on this very important issue.

Senator BARRASSO. In addition to our foreign adversaries, like Russia, the Department of Energy has also actually dumped uranium into the U.S. market and that has been against the law, but it has happened in both previous administrations. It has undercut the price of uranium, resulted in the cancellation of uranium projects and the loss of jobs in my home State of Wyoming. The GAO has repeatedly found that the Department's actions have violated federal law. Finally Secretary Perry has largely ended the practice.

Can I have your commitment that, if confirmed, you will ensure that the Department's excess uranium is not put into the market and we stay compliant with the law?

Mr. TURK. So this is an issue that I've not studied fully. I don't know the particular context and contours, have not had a chance, not being confirmed, to talk with our DOE officials. I would certainly want to do that and talk to them and talk to you further on that issue.

Senator BARRASSO. I want to talk about the renewable fuel standard. Unlike large oil refineries, small refineries do not have the economies of scale to comply with our nation's biofuel mandate, the Renewable Fuel Standard, the RFS. This is why Congress allowed small refineries to petition the Environmental Protection Agency for what is known as the Hardship Relief. So before deciding whether to grant relief, the Administrator of the EPA is required by law to consult with the Secretary of Energy. Under the last two administrations, federal courts have rebuked the EPA and the Department of Energy for failing to account for all of the challenges that small refineries face under the RFS.

If confirmed, will you ensure that the Department fully accounts for the challenges that small refineries face when evaluating these petitions?

Mr. TURK. Thank you, Senator. I certainly appreciate whether it's small refineries or small businesses that we need to look at and make sure that the rules are working for everyone in that instance. As you note, as you noted, it's an EPA decision, but DOE does have an opportunity to discuss and weigh in and certainly, if I'm confirmed, would be eager to do so. And again, look forward to talking with you further on this important issue.

Senator BARRASSO. Last July, I sent Secretary Brouillette a letter encouraging the Department of Energy, not to just have people come and visit Wyoming, but to actually establish a presence in my home State of Wyoming. If confirmed, would you give serious con-

sideration to this request to create a Department of Energy office in Wyoming?

Mr. TURK. So, absolutely, Senator. I don't need to tell you how much of an energy powerhouse Wyoming is. I think it's 15 times the amount of energy that you consume that you produce and benefit the rest of the country. So I would be more than eager to talk to you further about that, if I'm confirmed.

Senator BARRASSO. Finally, Mr. Chairman, a number of people have asked you during the hearing about rare earth minerals and China's dominance there. There is actually a lead editorial in today's Wall Street Journal and it is, "Rare Truths About China's Rare Earths." I would just recommend that to you and a number of our members have seen it and follow it.

[The information referred to follows:]

<https://www.wsj.com/articles/rare-truths-about-chinas-rare-earths-11614814070>

OPINION | REVIEW & OUTLOOK

Rare Truths About China's Rare Earths

Environmentalists and markets can end Beijing's monopoly on minerals for smartphones and more.

By [The Editorial Board](#) [Follow](#)

March 3, 2021 6:27 pm ET



A dump truck moves raw ore inside the pit at the Mountain Pass mine, operated by MP Materials, in Mountain Pass, Calif., June 7, 2019.

PHOTO: JOE BUGLEWICZ BLOOMBERG NEWS

Looks like it's time for another panic about rare-earth elements. New fears are surfacing that Beijing could use its dominance of the production of these vital minerals to throttle the global economy. As usual, the truth is more complex and less favorable for Beijing.

<https://www.wsj.com/articles/rare-truths-about-chinas-rare-earths-11614814070>

Rare earths, which are metals toward the bottom of the periodic table, are crucial to many emerging technologies. Their magnetic properties make them indispensable for smartphones, wind turbines, electric vehicles, nuclear submarines and other things. Some 80% of global output of processed rare earths are produced in China.

Publicly the Communist Party acts like this market dominance puts it in the economic catbird seat. One recent report suggested officials are studying how much damage Beijing could do by cutting off rare-earths for the West's F-35 fighter program. In 2010 it threatened to ban rare-earth exports to Japan following a territorial dispute.

Then there's rare-earth reality. China's share of global production, while still high, is already on the wane; it was above 95% as recently as 2010. Despite the name, rare earths are abundant across the globe. Driven in part by Beijing's metallurgical saber-rattling, countries such as Australia and the U.S. have ramped up mining and processing. Investment is underway on new recycling techniques.

This capacity already undermines China's supposed threat to foreign militaries. Defense applications in the West are a very small portion of total rare-earth consumption. The Trump Administration studied the possibility of stockpiling in case of a Chinese supply disruption. While that plan has yet to get off the ground, the U.S. and allies likely could meet their military rare-earth needs outside China in short order in case of an embargo.

This explains why the West wasn't willing before now to develop more of its own mining and processing capacity. Beijing's 2010 feud with Japan probably was less about grand strategy than trying for environmental reasons to rein in out-of-control wildcat miners in China.

It appears to have failed. Despite at least one subsequent attempt to consolidate the industry, Beijing minister Xiao Yaqing complained Monday that domestic oversupply of some rare-earths is driving prices too far down: "Our rare earths did not sell at the 'rare' price but sold at the 'earth' price."

Beijing is also increasing some output quotas on rare earths to support domestic high-tech manufacturing. Meanwhile, China is becoming an importer of some raw materials, especially from Burma. This confusion—one hand boosts production and imports while the other complains prices are too low—belies claims that a coherent industrial policy is in operation.

All of this can be good news if Western countries trust markets, which worked after China's threats against Japan in 2010. Production increased. But Western subsidies also artificially boost demand for green tech and thus for rare earths. And the U.S. and other countries have made mining for rare earths difficult and costly due to environmental rules.

Reduced Chinese supply—if it happens—will force Western policy makers and voters to face the trade-off between the carbon benefits of wind energy or electric vehicles and the environmental costs associated with manufacturing those technologies. If Western mining drives up rare-earth costs by fully accounting for environmental effects, that would be an important price signal. The Biden Administration and Congress could help by telling the truth about this trade-off and reducing the burdens on mining critical minerals.

Market signals have stimulated significant rare-earth investment and innovation in the West over the past decade. They remain the West's best defense against Chinese mineral mercantilism now.

Senator BARRASSO. Congratulations on your nomination. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator.

And Mr. Turk, I just want to thank you, on behalf of the Committee, for being willing to serve in this most important position. The expertise you bring has been very well on display today, and we appreciate your directness, the knowledge you have, and you sharing it with the rest of our country. I would hope that there is going to be bipartisan support. I think there will be. I think that we have a good group of people here that realize your talents.

With that, we do have concerns. I know that Senator Barrasso just mentioned one, on rare earth minerals. We feel like we are being held hostage. There is so much more we can do with the waste streams that we have. We are hoping that you will look at that and work with us. We are hoping to make sure that the technology dollars that we put in our energy bill at the end of the year are put into your budget to immediately start doing good and finding those new technologies through innovation. The NETL lab is very important, as you understand, to our entire chain, but it is the one that we have total control over, and is being shortchanged right now.

So there is an awful lot of things we want to work with you on. And we think that you, with Secretary Granholm, are going to make a great team. We are here for you in a very bipartisan way, and we want to work with you.

Thank you, sir, again. Thank you.

Mr. TURK. Well, thank you, Mr. Chairman.

The CHAIRMAN. The Committee will stand adjourned.

Oh, I am sorry. Members will have until 6 p.m. this evening to submit additional questions for the record. So members will have until 6 p.m. this evening.

Thank you again, Mr. Turk.

Mr. TURK. Thank you, Mr. Chairman.

The CHAIRMAN. Meeting adjourned.

[Whereupon, at 12:31 p.m. the committee adjourned.]

APPENDIX MATERIAL SUBMITTED

U.S. Senate Committee on Energy and Natural Resources
March 4, 2021 Hearing: *The Nomination of David M. Turk to be Deputy Secretary of Energy*
Questions for the Record Submitted to Mr. David M. Turk

Questions from Ranking Member John Barrasso

Question 1: The United States has “rejoined” the Paris Agreement. The Agreement has not been ratified by the U.S. Senate. If the Paris Agreement is not ratified, is the Paris Agreement legally binding in any way, including as a basis for regulation?

Answer 1: On January 20, 2021, President Biden signed the instrument to rejoin the Paris Agreement, which took effect 30 days later. If confirmed, I will look to the State Department and the Department of Justice concerning the legal force and effect of the instrument.

Question 2: Is keeping American energy costs low critical to our nation’s economic success?

Answer 2: Yes. If confirmed as Deputy Secretary, I will work to ensure that energy costs are low across the country and foster a market that is fair for all Americans.

Question 3: Under what specific circumstances do you believe the federal government should continue to allow utilities to use coal to generate electricity now and in the future?

Answer 3: To reach our net zero emissions goals, the United States will need to employ technology solutions for all fuel sources. If confirmed as Deputy Secretary, I will work with Secretary Granholm to commit departmental resources to carbon management across the fuel and technology spectrum. I am particularly excited by the opportunities for game-changing advances in carbon capture in the next several years.

Question 4: Do you oppose the direct use of natural gas in residential, commercial, and other buildings for the purposes of space heating, water heating, cooking, and clothes drying?

Answer 4: 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 the Department fulfills its responsibilities.

U.S. Senate Committee on Energy and Natural Resources
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Questions for the Record Submitted to Mr. David M. Turk

Question 5: In her answers to the questions for the record from her confirmation hearing, Secretary Granholm stated, "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." Do you agree with Secretary Granholm?

Answer 5: Yes.

Question 6: Our nation's civilian electric grids supply power to the vast majority of critical defense facilities. DOE's policies will have a direct effect on the reliability and resilience of the electric grids. If confirmed, how will you ensure that our most critical national security assets have reliable and resilient electric service while confronting cyberattacks and physical threats?

Answer 6: If confirmed as Deputy 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 discrete areas such as defense facilities in case of attack or natural disaster affecting the power grid. Additionally, the Department's 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 7: On his first day in office, President Biden suspended for 90 days President Trump's Executive Order #13920 on Securing the United States Bulk Power System. This order granted the Secretary of Energy authority to prohibit the acquisition or installation of equipment in the bulk power system that is deemed a threat to national security because of foreign ownership, control, or interest. Given the well-documented threats against our nation's critical infrastructure, and particularly energy infrastructure, how will suspending the order improve our nation's energy and national security? If confirmed, do you commit to briefing the Committee on the president's reasons for suspending the order and any plans to revoke or amend the order?

Answer 7: Yes. If confirmed, I look forward to educating myself further on the particulars of this issue, and would be happy to further discuss with the Committee.

U.S. Senate Committee on Energy and Natural Resources
March 4, 2021 Hearing: *The Nomination of David M. Turk to be Deputy Secretary of Energy*
Questions for the Record Submitted to Mr. David M. Turk

Question 8: Energy supply chains are becoming increasingly reliant on Chinese-manufactured goods, particularly, for example, components for solar and wind energy. How should the Biden administration address energy security threats that can arise from Chinese components?

Answer 8: 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 on 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 Deputy Secretary, I will work with Secretary Granholm to review the Department's work in this area to ensure DOE is adequately addressing the issue of potential energy security threats.

Question 9: 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 fulfill its legal obligation to move forward with the repository. If confirmed, how do you plan to ensure that DOE complies with the NWPA?

Answer 9: 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 10: 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. In your view, should taxpayer funds pay credit subsidy costs for LPO projects? Do you support increasing appropriations to cover the credit subsidy costs of loan guarantees? How would you protect taxpayers in the event that a recipient of a loan guarantee goes bankrupt?

Answer 10: 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 Deputy Secretary, I will review these programs in order to identify potential improvements and to more closely examine how to protect

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American taxpayers in making these investments. I would also be happy to further discuss with you and other interested Senators.

Question 11: Do you consider merchant, as well as small refineries, part of our nation’s critical infrastructure? If confirmed, do you pledge to play an active role in the administration to ensure that high Renewable Identification Numbers (RINs) prices will not jeopardize their viability?

Answer 11: 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. If confirmed, I would support that effort to the extent appropriate.

Question 12: The Experimental Program to Stimulate Competitive Research (“EPSCoR”) within DOE’s Office of Science is designed to improve energy-related research in 24 largely rural states, including 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 12: As you know, DOE’s EPSCoR program strengthens investments in energy research for states and U.S. territories that do not historically have large federally supported academic research programs. Through broadened participation, DOE EPSCoR seeks to grow and strengthen the network of energy-related research performers across the Nation. Expanding investment in support of clean energy research is important for all segments of the DOE research community, including EPSCoR. Partnering among EPSCoR institutions and the DOE National Laboratories is a significant opportunity to promote development of strong research programs in these regions.

Question 13: Direct air capture is one of the technologies that has often been cited as a necessary tool to address climate change. In your view, how important is this technology, and what are the Biden administration’s plans for supporting and investing in this technology?

Answer 13: Carbon dioxide removal will be required to address hard to avoid emissions to reach net-zero targets. Direct air capture is one approach (in addition to several others like mineralization, bioenergy with carbon capture, etc.) that must be deployed in order to achieve net-zero by 2050. It is my understanding that DOE is committed to finding the best paths forward and if confirmed as Deputy Secretary I look forward to advancing this important technology.

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Question 14: The Senate depends on the Energy Information Administration (EIA) for reliable, non-partisan energy data and forecasts. If confirmed, will you ensure that EIA will not be subject to political pressures to tip the scales in favor of the president's policy preferences?

Answer 14: Yes.

Question 15: If confirmed, do you commit to maintain disclosure and conflict of interest policies for our nation's research organizations and institutions? If confirmed, will you work to identify and implement new disclosure and conflict of interest policies to further protect our nation's investments in new technologies, whether they are in energy, science, or national defense?

Answer 15: Yes.

Questions from Senator James E. Risch

Question 1: This Administration has announced big goals for cutting carbon emissions to mitigate the effects of climate change. What do you believe are the most promising nuclear efforts in our nation?

Answer 1: I believe that we need to prioritize our activities to preserve the existing fleet of nuclear reactors, deploy advanced reactor technologies, and expand nuclear energy to markets beyond electricity to enable us to meet our ambitious carbon reduction goals.

Question 2: In 2018, DOE established the Office of Cybersecurity, Energy Security, and Emergency Response, more commonly known as CESER. This office has provided the Department with a focus on the cybersecurity of our energy industrial control systems. Protecting our critical energy infrastructure from is one the nation's most pressing security challenges facing the United States today. As recent incidents have shown, bad actors are persistent in their efforts to access our nation's infrastructure and these efforts are increasing in their number and level of sophistication.

- a. How does the cybersecurity work at the Idaho National Lab contribute to increasing our nation's cyber preparedness and response capabilities?

Answer 2a: Several DOE National Laboratories play a critical role in supporting the cybersecurity of the energy sector and our Nation with world-class and interdisciplinary expertise in cybersecurity, as well as other key areas including: energy systems, industrial control systems, modeling and simulation, and data analytics. At INL, DOE's Cyber Testing for Resilient Industrial Control System (CyTRICS) program enables DOE to evaluate software and firmware in energy sector equipment, with state-of-the-art, intelligence-informed analytic capabilities from the National Laboratories, to identify and mitigate

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cybersecurity vulnerabilities in the supply chain, helping to ensure the integrity and reliability of critical system components nationwide.

- b. Can you share your thoughts on the importance of CESER to protecting our nation's critical energy infrastructure?

Answer 2b: DOE established CESER to elevate the Department's energy security responsibilities and safeguard U.S. critical energy infrastructure against growing and evolving cyber and physical threats. This mission is critical to ensuring that our nation can meet its clean energy goals in a secure, reliable, and resilient way.

- c. Do you see value in having an Assistant Secretary focused on cybersecurity, energy security, and emergency response?

Answer 2c: Cybersecurity is a very important function within the Department that should be strengthened. If confirmed as Deputy Secretary, I look forward to working with Secretary Granholm and other DOE leadership as well you and other members of the committee on how to further strengthen our work in this critical area.

- d. Should you be confirmed, how will you ensure that DOE maintains its leadership as the sector specific agency for energy?

Answer 2d: If confirmed, I will ensure that DOE maintains and advances its leadership as the sector specific agency by continuing to enhance the security of critical energy infrastructure to all hazards, mitigate the impacts of disruptive events and risk through preparedness and innovation, and respond to and facilitate recovery from energy disruptions in collaboration with other Federal agencies, the private sector, and State, local, tribal, and territory governments. DOE cultivates trusted partnerships with the energy sector and provides deep and extensive subject matter expertise from within the Department and from across the National Lab complex. Importantly, this expertise is specific to the uniquely critical and complex nature of the energy system.

Question 3: Last year, the Nuclear Energy Leadership Act was signed into law. This bill is critical to reestablishing U.S. leadership in nuclear energy by developing and deploying the next generation of advanced nuclear reactors.

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- a. How does the development of advanced nuclear reactors and technologies fit into this administration's climate change plan and how will you implement the Nuclear Energy Leadership Act and other legislation enabling the development of advanced nuclear?

Answer 3a: The development of advanced nuclear reactors and technologies is an important component of achieving our climate goals. The Department's Office of Nuclear Energy has a rich portfolio of advanced nuclear technology development and demonstration underway. If confirmed, I can commit to working with and supporting the Office of Nuclear Energy as the Department moves to implement those portions of the Nuclear Energy Leadership Act that were signed into law in the Energy Act of 2020.

- b. These projects are expensive, and require a sustained funding commitment from both the Administration and Congress. What will you do to ensure that DOE seeks the funding necessary to keep these project moving forward?

Answer 3b: If confirmed, I will work you, Secretary Granholm, and our other Congressional partners to ensure an ambitious budget for nuclear energy research, development, and demonstrations.

Question 4: 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. I want to stress the importance of these cleanup activities at the Lab. 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 4: I understand the importance of continuing the Department's legacy cleanup activities at INL. If confirmed as Deputy 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 5: Last year DOE's Office of Environmental Management announced it would re-compete the Idaho Cleanup Project contract at INL. DOE required that contractor teams submit their proposals by July of 2020, and DOE announced that it would select a winner and begin transition by Monday, March 1, 2021.

The March 1st deadline has passed, and DOE has not announced when it will finally make an award decision. As Deputy Secretary, will you ensure that DOE finalizes the Idaho Cleanup Project procurement as quickly as possible, so that the hundreds of employees engaged in this important work can plan for which contractor is in charge, and when they can move forward?

Answer 5: Yes.

Question 6: Reasserting U.S. leadership in nuclear energy is critical for not only our domestic needs, but also for our national security. Russia and China are aggressively pursuing nuclear energy export agreements and

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have sought to dominate global nuclear energy markets to extend their global influence. As Deputy Secretary of Energy you would have an important role in both the promotion and control of nuclear energy exports.

- a. If confirmed, what actions will you take to support the development of advanced nuclear reactors in the United States?

Answer 6a: As Secretary Granholm has noted, the Department supports robust research, development, and demonstration of advanced nuclear technologies. The Department's Advanced Reactor Demonstration Program will enable the accelerated demonstration of many U.S. advanced reactor designs. If confirmed, I will work to ensure the success of this program and that our advanced nuclear technology development industry has the infrastructure and support needed to achieve demonstrations, licensing, and deployment of advanced nuclear technologies.

- b. What are the national security implications of allowing Russia and China to lead the world in nuclear energy exports?

Answer 6b: I believe that energy is a national security issue and the sale of nuclear energy technology and reactors provides 100-year relationships with our international partners. It is imperative that we are successful in the export of U.S. technology to ensure strong safety and non-proliferation standards internationally.

- c. What actions can the Department of Energy take to help the U.S. nuclear industry compete against these countries?

Answer 6c: 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, I will work across the Federal Government and with Congress to empower the U.S. nuclear industry to develop, demonstrate, and export American-made nuclear technology.

Question 7: In 2019, the IEA put out a report titled Nuclear in a Clean Energy System. You spoke to the Center for Strategic and International Studies about this report and highlighted the competitiveness of nuclear when lifetime license extensions were factored into the levelized cost of electricity. The report provided a number of recommendations to ensure a sound framework for lifetime extensions, including valuing the nature of nuclear power and clarifying safety requirements for longer life and more flexible operations.

- a. Should you be confirmed, will you support lifetime extensions for the existing nuclear fleet?

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Answer 7a: I believe that nuclear energy is an important part of carbon free baseload power and, as such, I think it is important that we work with the Nuclear Regulatory Commission on advancing lifecycle extensions of the current nuclear fleet, where appropriate.

- b. What actions would you support to prevent premature closure of existing nuclear reactors due to unfavorable electricity markets.

Answer 7b: If confirmed, I would support ongoing research, development, demonstration, and deployment (RDD&D) activities, and work with industry and the Nuclear Regulatory Commission (NRC) where appropriate to improve their competitiveness. I would also work with Congress, the Federal Energy Regulatory Commission (FERC), and regional and state policy makers to explore market reforms that could value the firm low-carbon attributes nuclear energy provides our energy system.

- c. Are there non-electrical products that nuclear facilities could utilize to enhance revenue?

Answer 7c: Yes, nuclear facilities could create industrial and chemical products, such as hydrogen, synthetic fuels, and clean water to enhance revenues. For example, it is my understanding that DOE is partnering with industry to demonstrate hydrogen production at two existing nuclear power facilities.

- d. What role does nuclear energy research and development play in ensuring the current fleet of nuclear reactors can continue to provide emission free energy?

Answer 7d: Nuclear energy RD&D has an important role in ensuring that the current fleet continues operation by improving performance and increasing revenue streams. RD&D also provides pathways to demonstrate how nuclear energy can be used to generate chemical and industrial products, opening the door to decarbonize other difficult to remediate sectors.

Question 8: Hydrogen technologies are considered an important component in mitigating climate change and supporting domestic energy independence.

- a. Can you discuss the integration of blue and green hydrogen into our future energy systems? Do you view hydrogen produced from nuclear energy as “green hydrogen?”

Answer 8a: Hydrogen produced using renewables (wind or solar) has been generally termed “green” while hydrogen produced by nuclear has been generally termed “pink.” Regardless of the color – both

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routes of hydrogen production are low-carbon when incorporating the life cycle considerations of the renewable and nuclear energy resources from cradle to grave.

- b. What role do you see the DOE National Laboratories playing in hydrogen R&D and how do we bring the labs' developments to the market?

Answer 8b: The DOE National Laboratories have major roles to play in fundamental R&D, applied R&D, interactions with academia and industry, and stewardship of world-class user facilities for all of these purposes. Our Labs also play a critical role in de-risking technology deployment through systems integration, demonstration, and strategic analyses to identify gaps and opportunities. In addition, through the Labs and universities, the Office of Science supports transition of fundamental hydrogen R&D to applied R&D and technology, often leading to follow-on awards from DOE technology offices, ARPA-E, or other agencies. The Labs' experimental and computational user facilities also enable these activities by providing instrumentation and expertise to the user communities, including industrial users from major companies and small businesses. All of these areas can be further supported and strengthened.

Question 9: The European Commission is in the process of developing a framework for sustainable financing that will guide EU policy towards technologies that are considered sufficiently clean. This taxonomy is expected to have impacts that will stretch beyond Europe. It is my understanding that this taxonomy is being driven towards an early conclusion before carbon-free nuclear energy can even be considered. How can the US Government as a whole, and you in particular, weigh in to ensure that the largest source of clean electricity is included in such a taxonomy?

Answer 9: It is my understanding that DOE remains very much engaged on the role of nuclear energy in international developmental finance to re-establish U.S. leadership in a critical national security space, promote a level playing field for U.S. industry, and assist partners and allies to meet clean energy goals. With these goals in mind, DOE is closely tracking the evolution of the EU taxonomy negotiations. If confirmed, I would be happy to further engage in those discussions.

Question 10: The Department's nuclear weapons enterprise has long been underfunded and undervalued. Meanwhile, Russia and China has 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

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neglect. Do you commit to ensure appropriate increases are approved and sustained to modernize the nuclear weapons enterprise?

Answer 10: Yes.

Question 11: The Bonneville Power Administration (BPA) plays a pivotal role in providing affordable and reliable electricity to communities in Idaho and the Pacific Northwest.

- a. Will you commit to engaging with the Administration to ensure that misguided proposals like these are not included in future budget submissions or other proposals?

Answer 11a: If confirmed as Deputy 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 11b: Yes, I believe that it is 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 12: Historically, the Bonneville Power Administration has reported directly to the Deputy Secretary. The past 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, such as the Columbia River Treaty. BPA is more than an agency with 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 12: I understand the unique nature of the Power Marketing Administrations (PMAs) and their importance to the regions they serve. If confirmed, I would work with Secretary Granholm and other senior leadership to undertake 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.

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Question 13: During the Obama Administration, the Department sought to drastically expand the mission of BPA to fund, develop and advance renewable energy projects. Fearing that this mission-creep would increase costs and risks, the proposal prompted strong opposition from BPA customers, the Northwest congressional delegation, and others. BPA's authorities and responsibilities are clearly spelled out in its authorizing statutes. Remaining focused on that mission is essential for BPA to remain a competitive power supplier. Will you commit to advance and respect BPA's mission and reject any effort to direct BPA to fund clean energy projects that are outside the agency's legal authority and mission?

Answer 13: The Department's mission is consistent with the priorities of the Bonneville Power Administration and respects all statutory authorities, operational issues, and regional policies. If confirmed, I look forward to maintaining an active dialog with Congress, the Northwest delegation, regional stakeholders, and BPA as we collectively address the challenges facing the region.

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

Answer 14: Yes.

Question 15: In bipartisan fashion, Congress has provided generous funding to DOE to support the development and deployment of advanced reactors, and has mandated that DOE be able to provide specialty fuel called High-Assay, Low-Enriched Uranium (HALEU) fuel to reactor developers within the next 5 years. Can I get your commitment that DOE will continue to support these important programs, both to fund these advanced reactors and to provide the specialty HALEU fuel they need to operate?"

Answer 15: If confirmed, I will commit to carrying out Congressional direction and supporting the U.S. nuclear industry with the resources and infrastructure needed to make them successful and help us meet the Administration's climate goals.

Questions from Senator Steve Daines

Question 1: Mr. Turk, American energy independence has led to a more secure domestic supply, strengthened our national security, and helped our allies. The Keystone XL Pipeline and other oil and gas pipelines would strengthen North American energy trade and security while enhancing our trade with European allies. The Nord Stream 2 Pipeline, however, would advance Russian energy dominance in Europe and ultimately negatively affect North American national security. From a national security and secure supply chain point of view, both domestically and with our European allies, what are your thoughts on the recent actions to shut down the Keystone XL Pipeline but not take similar actions regarding Nord Stream 2?

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Answer 1: Canada is a key partner of the United States in energy trade, as well as our efforts to address climate change and protect the environment. If confirmed, I would look forward to working with Canada counterparts to meet these challenges together. The Department of Energy does not manage the approval process for presidential permits related to cross-border liquid hydrocarbon pipeline infrastructure. That said, as the Administration continues to work through permitting decisions related to these permits, if confirmed, I would be engaged with the Department of State and the White House to feed into those decisions with the best expertise that DOE has to offer. Regarding Nord Stream 2, I share the Administration's opposition to the project. If confirmed, I look forward to working with you on this issue.

Question 2: Mr. Turk, the Small Refinery Exemption is a congressionally mandated tool that helps provide economic stress relief to the U.S.'s smallest refineries. Will you commit to working with me to ensure DOE follows congressional intent as it relates to the review and approval of exemptions?

Answer 2: Yes.

Question 3: Mr. Turk, DOE hosts the National Quantum Initiative Advisory Committee. This committee was created as part of legislation I helped lead and was signed into law in 2018. As the co-chair of the newly created Optics and Photonics Caucus and recognizing Montana is the home of a growing quantum computing cluster, I believe it is important the U.S. continue its leadership in quantum computing and cutting edge technology. What steps will you take to enhance the role of DOE in quantum research and development?

Answer 3: 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 Deputy Secretary, I will review DOE's quantum efforts to help best position the Department to meet the goals set out in the Act and also work with you and other congressional leaders to ensure DOE is best positioned to attain success in this endeavor.

Question 4: Mr. Turk, as we discussed in the hearing, CCUS technology is an important tool for the reduction of carbon emissions. This committee has passed and signed into law numerous CCUS related bills that have

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direct instructions to DOE. One of those bills created a large-scale pilot project at an existing coal or natural gas plant. I believe Montana is uniquely qualified to host one of these DOE projects. Will you commit to working with me on finding ways for DOE to be more involved with CCUS development in Montana?

Answer 4: Yes.

Question 5: Mr. Turk, what remaining hurdles do you see CCUS technology needing to get over before it can be commercially available throughout the U.S.? What role will DOE play in removing those hurdles?

Answer 5: DOE is working on taking carbon capture out of its silo and dedicating efforts to low-carbon supply chains for private and public procurement of products. More and more corporations are making net-zero targets and are looking for opportunities to purchase sustainable and low-carbon products. If confirmed, I will help the Department further engage in public-private partnerships where we can assist in coupling front-end engineering and design studies to deployment with shared financing – similar to some of the projects currently funded in the Office of Fossil Energy.

Question 6: Mr. Turk, grid reliability and sustainability remains a major concern and priority especially in light of the recent rolling blackouts we have seen in California, Texas and other states.

- a. What actions do you think DOE and Congress should take to ensure lights stay on when they are most needed?

Answer 6a: Grid reliability and sustainability is a major concern, especially in California, Texas and New England. Congress, the Department, FERC, NERC and the states all have important roles to play. If I am confirmed, I will recommend the Department review results of the inquiry by FERC, past recommendations from the previous reliability events, and within DOE's jurisdiction work with industry to address the weather and cyber threats facing our electric system.

- b. What role do you believe baseload power plays in grid reliability?

Answer 6b: The electric grid is a modern machine and system that requires generation to provide essential reliability services and allow for grid operators to dynamically manage supply and demand. Baseload power is an essential component of grid reliability.

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Question 7: Mr. Turk, pumped hydro-storage can be used to help make intermittent energy act more like baseload and help stabilize the grid. How can DOE promote storage technologies like pumped hydro to better secure the grid?

Answer 7: Energy storage, such as pumped hydro, is a critical component of the U.S. energy system because it gives grid operators flexibility to balance supply and demand, enables both systems and facility resilience, and supports increased penetrations of renewable and other clean energy technologies that are essential for meeting our nation's goal of decarbonized power sector by 2035 and a net-zero economy by 2050. DOE has a wide range of basic and applied research activities across the Department to help support storage technologies, including work to develop the next generation of pumped storage hydropower. Supporting and strengthening these activities could bring about transformational change.

Question 8: Mr. Turk, hydropower and nuclear energy have provided the vast majority of carbon-free electricity for the United States for decades. Both also provide consistent baseload power. Unfortunately, for many, when they discuss 'green-energy' they mean only 'wind and solar', forgetting the role that nuclear and hydro already play in carbon-free electricity generation. Further, we have already seen certain areas move to close nuclear plants or propose to breach hydro-dams. What role do you think nuclear power and hydropower should play in the future of energy production?

Answer 8: I agree that hydropower and nuclear energy are a critical part of our energy future, especially as a source of carbon free energy. If confirmed as Deputy Secretary, I will actively support the Department's substantial hydropower and nuclear RD&D efforts, including the newly announced Energy Transitions Initiative Partnership Program, and the continued development and demonstration of advanced nuclear technologies to ensure these critical sources of power generations are available to provide energy supplies while helping to meet our emissions reductions goals.

Question 9: Mr. Turk, do you believe we should increase hydropower production?

Answer 9: Yes.

Question 10: Mr. Turk, what advancements or innovation do you see in hydropower production in the future?

Answer 10: With the advent of greater levels of variable renewable generation on the U.S. grid, hydropower's role as a flexible and renewable generation source takes on even greater importance. At the same time, it is essential that hydropower is developed and operated in a way that supports healthy

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rivers and the communities that depend on them. As such, I understand DOE will be investing in new innovative technologies such as new turbines and control systems that can enhance hydropower's flexibility to help maintain grid reliability and resilience, while improving the environmental impacts of all water power technologies. In addition, we are exploring ways to use advanced manufacturing concepts to lower costs associated new hydropower projects and replacement parts for the existing fleet.

Question 11: Mr. Turk, in-stream hydrokinetic power allows for small scale, low impact hydropower generation. How can DOE work to increase the use of in-stream hydrokinetic power?

Answer 11: DOE has a significant research effort underway to continue to improve in-stream hydrokinetic power technologies and demonstrate their use, from the East River in Manhattan to the Kvichak in Igiugig, Alaska. In-stream hydrokinetic, as well as small-run-of-river hydropower, are important sources of clean energy and have particular value in smaller, more remote communities and microgrids. Like with all hydropower, it is important that systems are designed with minimal environmental impacts, and DOE supports significant research to improve the environmental performance of all water power technologies. DOE will also continue to work directly with coastal and rural communities to facilitate deployment of all forms of water power technologies.

Question 12: Mr. Turk, the Bonneville Power Administration (BPA), under DOE, relies on hydropower for the bulk of their energy market. Recently there have been calls to breach hydropower dams in the Columbia Snake River system. Do you support any breaching of dams as part of BPA's electricity market?

Answer 12: The federal hydropower system on the Columbia and Snake Rivers provides clean, renewable, and low-cost baseload and flexible hydropower to the Pacific Northwest and throughout the west in times of surplus power. This existing hydropower is critical to meeting our nation's decarbonization goals. The Biden Administration's goal is to maintain as much existing clean energy as possible to continue to meet our decarbonization goals and I commit to supporting this goal.

Question 13: Mr. Turk, administrations from both parties have suggested to sell or privatize BPA. I have long opposed these proposals and believe BPA plays an important role in Montana's electricity market. When advising the President or drafting DOE's budget, will you suggest that BPA be sold or privatized?

Answer 13: No.

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Question 14: Mr. Turk, it is my opinion that the Paris Agreement should have been sent to the Senate for ratification, as is required for international treaties under the Constitution, and that congress should continue to be consulted in these matters. It is my understanding the Administration is in the process of developing Nationally Determined Contributions (NDCs).

- a. If confirmed, what role do you believe DOE should play in developing NDCs?

Answer 14a: DOE is the solutions agency and is responsible for developing technologies that will help us meet our emissions targets. DOE also has the capabilities to model emissions under different deployment scenarios. If confirmed, I look forward to working with Congress and the Administration on this issue.

- b. Will you commit to providing the Senate with a briefing on NDCs before they are submitted?

Answer 14b: If confirmed, I would advocate within the U.S. interagency process for this to happen.

Question 15: Mr. Turk, according to IEA, in 2019 the United States saw the largest decline in energy-related CO2 emissions on a country basis. In the most recent report (2020) released a few days ago, the U.S. continues to be a world leader in emissions reductions. China and other signatories to the Paris Agreement, on the other hand, continued to see emissions rise in recent years. Much of the U.S. reductions over the years have been driven by innovation and the free-market, not heavy handed regulations.

- a. If confirmed, how will DOE prioritize innovation over regulation when advising the Administration on NDCs and other climate-related policies?

Answer 15a: DOE is the solutions agency and is responsible for developing technologies that will help us meet our emissions targets. DOE also has the capabilities to model emissions under different deployment scenarios. DOE's important work helps to provide options to public and private sector players seeking to reduce emissions.

- b. When considering costs vs. benefits, how will you factor in job loss and the challenges faced by rural communities when advising on national climate policies?

Answer 15b: As the world invests in the clean energy economy, millions of good-paying union jobs are being created that have the ability to lift up communities that have been left behind – whether that's communities facing pollution from nearby fossil industry, or whose workers are facing economic uncertainty. If confirmed, I will work with Secretary Granholm to fulfill her pledge to make sure those

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hardest-hit places benefit from these clean energy solutions. This is an issue to which I am very personally committed.

Questions from Senator Martin Heinrich

Question 1: Temporary Consolidated Storage Facilities for Spent Nuclear Fuel and High-Level Waste

There are two pending applications with the NRC to site a consolidated temporary storage facility for commercial spent nuclear fuel. One of the proposed sites is in New Mexico. I continue to be concerned that without an approved site for permanent geologic disposal, any proposed “temporary” storage facility could easily turn out to be de facto “permanent” storage. Do you support the recommendation of the Blue Ribbon Commission to require state approval of any temporary consolidated storage facility for spent nuclear fuel and high-level waste?

Answer 1: Yes.

Question 2: Los Alamos National Laboratory Cleanup

New Mexico is host to three important DOE facilities: Los Alamos National Laboratory (LANL), Sandia National Laboratories (SNL), and the Waste Isolation Pilot Plant (WIPP). Assuring these facilities are managed in a manner that is protective of New Mexico’s citizens and the environment is paramount. There is a growing concern in New Mexico with the slow progress of the clean-up of legacy contamination at Los Alamos National Laboratory. The previous administration proposed to cut the funding by almost 50%, and the ongoing COVID-19 pandemic has also impacted the work. Under the existing consent order, milestones are determined each year based on the funding level instead of the long-range risk to the environment. If you are confirmed, will you commit to working with New Mexico to determine appropriate risk-based annual milestones and ensure the budget requests for the clean-up work at LANL are sufficient to complete the full achievable scope of work for each year?

Answer 2: I understand the importance of continuing the Department’s legacy cleanup activities at LANL. If confirmed as Deputy Secretary, I commit to working with you and your staff to help ensure the cleanup of LANL is conducted in a safe, effective and cost-efficient manner. I also understand the frustration with previous budget requests, and, if confirmed, I look forward to working to make sure that funding and budgeting can be helpful in advancing our shared priorities.

Question 3: Transportation Routes to WIPP

The Waste Isolation Pilot Plant (WIPP) is vital to clean-up and waste disposal across the entire DOE complex. To serve WIPP, New Mexico’s road infrastructure and all transportation routes to WIPP must be properly

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maintained and safe. Historically, DOE provided funding through the Land Withdrawal Act directly to New Mexico to improve and maintain WIPP transportation routes, but funding has not been provided for several years. If you are confirmed, will you commit to working with New Mexico to restore annual funding to ensure WIPP transportation routes in New Mexico are well maintained and safe?

Answer 3: The Department is committed to the safe transportation of defense-related transuranic waste to WIPP. It is my understanding that the Department has examined how to potentially support appropriate economic assistance to ensure safe highways and infrastructure in New Mexico for shipments to WIPP. If confirmed, I look forward to learning more about this issue and to working with you and the state of New Mexico to continue to ensure safe transportation in your state.

Question 4: Green Hydrogen

I'm increasingly excited by the prospect of electrolyzers powered by renewable electricity to produce green hydrogen to decarbonize the transportation, industrial and power sectors.

What are your views on the prospects for green hydrogen and what do you see as the critical barriers to increased use of hydrogen to offset fossil fuels, especially in hard-to-decarbonize industries?

Answer 4: I believe green hydrogen can be a versatile part of our clean energy future, especially in hard-to-decarbonize industries and long-distance freight. Reducing cost is a priority, and I understand DOE has 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. If confirmed, I very much look forward to working further with you and your staff on this critical technology.

Question 5: Transmission

I believe the country needs to do a better job of developing new power transmission capacity to help unlock our best large-scale wind and solar energy resources needed to support full electrification. Clearly, FERC plays a central role in transmission planning and incentives to build new capacity.

What more can DOE be doing to help stimulate additional investment in new transmission capacity, including offshore, to support widespread deployment of renewable energy?

Answer 5: The Department of Energy has and continues to work on reducing the cost of technologies (dynamic line ratings, power flow control, power transformers) and supporting coordinated integrated

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resource planning approaches and modeling capabilities for transmission development and deployment in order to effectively increase transmission capacity that could be applied to developing an optimized off-shore transmission network. Additionally, the Department is investigating innovative approaches for permitting transmission projects. Our Power Marketing Administration also have the authority to construct transmission projects that benefit the customers in their region.

Question 6: Clean Energy Standard

President Biden has expressed support for achieving a carbon pollution-free power sector by 2035. A well-structured Clean Energy Standard would greatly advance the emissions reductions needed to meet this type of robust target.

What are your views on a Clean Energy Standard as a method of driving decarbonization in the energy sector and helping achieve this 2035 goal?

Answer 6: In order to realize the administration's goal of a fully decarbonized power sector by 2035, we will have to accelerate the deployment of clean and renewable electricity generation while at the same time ensuring the grid is reliable and resilient to physical and cyber threats. This will require a comprehensive approach of policy and technology support to drive innovation, manufacturing and installation of clean energy and grid modernization technologies. A clean energy standard is one of many potentially powerful tools to consider. If confirmed, I look forward to working with you as you and other Members of Congress in considering all potential tools.

Question 7: Smart Grid

I am very excited about the opportunities for smart grid technologies to improve the capacity and efficiency of the existing transmission grid. And I was pleased to support Sec. 8001 of the Energy Act of 2020, which directs the Secretary to establish a smart grid regional demonstration initiative. Commercial smart grid technologies that can deliver more power over existing lines or reduce transmission congestion include power flow control, dynamic line ratings, and storage-as-transmission.

What are your thoughts on smart grid technologies and how best to expand deployment?

Answer 7: Smart grid technologies including smart sensors, power electronic devices, switches, power flow technology, dynamic line ratings and storage-as-transmission technologies are great opportunities to increase the capacity of transmission lines, flexibility of the electric grid, and allow more clean energy

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deployment across the system and improved operations. Expanding deployment can be done through partnerships with utilities and federal/state regulators on deployment programs that will achieve the maximum benefit for the nation.

Question 8: Energy Storage

For several years, I've led bipartisan legislation to provide a modest tax incentive for energy storage.

- a. What do you see are the top research priorities at DOE for energy storage technologies, including long-term storage?

Answer 8a: There are many complementary research initiatives being pursued across Department programs. For example, in the DOE Office of Science (SC), among the highest priorities in energy storage research are the scientific foundations, including new battery materials and chemistries, that will enable next-generation storage for both transportation and the grid. Key topics include higher energy capacity and power, use of recyclable materials from a secure supply chain, long cycle life, safety, and lower cost. Advances have been enabled by integrating experimental and theoretical research with data science, including machine learning, and with the help of DOE user facilities for real-time high-resolution characterization of batteries and other energy storage systems during operation.

- b. Do you also see a role for DOE to support domestic manufacturing of energy storage systems?

Answer 8b: Yes. Through coordination with DOE technology offices, SC supports communication of industrial drivers to the basic research community and supports the transition of basic energy storage R&D to applied R&D and technology, often leading to follow-on awards from DOE technology offices, ARPA-E, or other agencies. The transition mechanisms include Energy Frontier Research Centers (EFRCs) and the Batteries and Energy Storage Energy Innovation Hub, which have substantial interactions with industry. Small Business Innovation Research (SBIR) topics related to energy storage have been successful in attracting a domestic industrial base for key research areas.

Questions from Senator Lisa Murkowski

Question 1: I was encouraged to see President Biden issue last week's Executive Order to review the global supply chains for critical minerals and large-capacity batteries, among others. Now we have to turn these

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reviews into actions to improve not only our domestic supply of minerals, but also the processing of these minerals to turn the raw material into commercially valuable products. What do you know about our nation's mineral security, and how do you suggest we address the lack of supply and processing of minerals here in the U.S. to make us more competitive with Asian and European markets?

Answer 1: I agree with you that this is a very important opportunity for the United States. DOE can 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 Deputy Secretary, I look forward to further discussing this issue with you and your staff, and 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 2: Are there any resources or insights that you can take away from the previous administration's efforts to secure our mineral supply chain?

Answer 2: Yes. Waste products from mining (e.g. stockpiled tailings) can be used for the extraction of minerals. This was work heavily funded in the last Administration.

Question 3: Alaska has the second-highest capacity for geothermal energy in the country and is one of eight states that generates electricity from geothermal resources. We have a real opportunity to grow geothermal energy in Alaska to displace existing diesel generators with emissions-free energy through the Makushin geothermal project in Unalaska.

Answer 3: I fully agree that growing geothermal resources are a critical part of our nation's energy future.

Question 4: What is your long-term vision for the Arctic Energy Office and the Cold Climate Housing Research Center's partnership with NREL?

Answer 4: The Arctic Energy Office is an incredibly important office that is too small right now. If confirmed as Deputy Secretary, I look forward to working with you on how we can expand this office and expand on our commitments to addressing energy challenges for communities in Alaska.

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Question 5: It is clear that President Biden is taking steps to address climate change here in the U.S. and abroad. And I fully support this renewed interest in U.S. climate policy, but recent executive actions threaten the economic recovery of my State. How can we address climate change in a way that helps - not hurts - economies and communities that depend on responsible resource development?

Answer 5: I am committed to working with you and other members of the committee to ensure we are creating good-paying jobs in the clean energy sector in communities that are in transition. I believe that the United States is blessed with an abundance of talent as it relates to energy jobs. DOE is committed to working to capitalize on the talents of our American workforce taking into account their skills and abilities in advancing place-based jobs initiatives. We need to look closely at where we have a strategic advantage including clusters of skilled workers and take advantage of those skills in advancing technologies like CCUS and carbon dioxide pipelines, among other opportunities.

Question 6: Will you commit to meeting with Alaskan stakeholders to understand our unique social and geographic challenges to producing and delivering affordable and reliable energy across the State?

Answer 6: Yes. I would very much look forward to doing so.

Question 7: During your time with the State Department, you mentioned working closely with the Arctic Council and where you had the opportunity to visit some of the Arctic countries. I hope you recognize that the Arctic is a region rich with resources, opportunities, and responsibilities and is of increasing importance as the polar sea routes open up, technologies advance, and global demand for resources rises. Will you accept my invitation to visit Alaska to see some of our innovative projects?

Answer 7: Yes. I would be very eager to further work with you, your staff, and your constituents.

Question 8: Can you tell us what other Arctic countries are doing to coordinate and advance research and development in the Arctic, and what your plans are to grow DOE's work in the Arctic?

Answer 8: The principal forum for international Arctic cooperation is the Arctic Council, which, as you know, consists of the United States and the 7 other Arctic states. I have had the good fortune to work on Arctic Council issues while previously at the State Department. While the State Department leads U.S. participation in the Arctic Council, DOE engages through its program offices and laboratories. Most Arctic states have created, or are in the process of creating, new Arctic strategies and offices to provide greater support for Arctic research and development. In addition, DOE is an active partner in the multiple research centers, sites, and field campaigns across the Arctic.

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The Arctic Energy Office (AEO) manages DOE Arctic activities. AEO is conducting an arctic research gap analysis for DOE and is coordinating with the Interagency Arctic Research Policy Committee, the U.S. Arctic Research Commission, and other stakeholders to enhance the effectiveness of DOE and U.S. arctic research. It also convenes the Arctic Lab Partnership collaboration forum to enhance situational awareness of ongoing DOE research between the national labs and university partners.

Question 9: There is a significant long-term economic and security value to U.S. LNG, particularly in Alaska. We have trillions of proven natural gas reserves, we are uniquely situated for LNG exports, and there is no domestic market we would be competing in. As you may know, the Alaska LNG project received a final export license from DOE in August of last year, a major milestone in developing infrastructure to support Alaska's LNG exports. Do you agree that U.S. LNG will continue to be an important part of the global energy mix?

Answer 9: Yes. Natural gas is an important part of our energy mix. We must work hard to reduce methane emissions associated with natural gas production as well as emissions that come from burning natural gas. The Department of Energy has an important role to play in helping to develop technologies that help reduce emissions in order to help ensure that our energy supplies continue to help meet our energy needs in domestic and international markets.

Question 10: Can you commit to using the Department of Energy's authority to approve and support projects to commercialize Alaska's natural gas?

Answer 10: Where appropriate, I look forward to applying the Department's authorities toward a cost and benefit assessment on natural gas and other projects. If confirmed, I would always be available to further discuss these important issues with you and your staff.

Question 11: Will you advocate for natural gas as a bridge fuel to support carbon-intensive economies' transition to cleaner sources of power generation?

Answer 11: If confirmed, I look forward to exploring any and all pathways that will help reduce global greenhouse gas emissions.

Question 12: What role will U.S. natural gas play in the nation's energy transition, and what is the impact of U.S. natural gas on developing countries to meet their climate targets?

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Answer 12: Natural gas can play an important part of nations' energy transition strategies provided we strive to reduce emissions that are produced from extracting, transporting, and burning natural gas.

Question 13: The Energy Act supports carbon capture, utilization, and storage to make these technologies commercially viable for power generation and industrial facilities. I want to ensure that CCUS will be used to support not only renewable energy sources but the production of low-emission fossil fuel resources. If confirmed, will you commit to advancing CCUS technologies at fossil fuel producing facilities in the U.S. and particularly in Alaska?

Answer 13: Yes. CCUS holds great potential on newer natural gas fired power plants. If confirmed, I look forward to working with you on this critical technology.

Question 14: My Nuclear Energy Leadership Act supports the development of advanced reactors and small modular reactors, which have the potential to transform energy systems in rural Alaska by providing affordable, reliable energy while decreasing emissions from diesel generators. Can you discuss the importance of advanced nuclear technologies for rural applications and how the Department of Energy will ensure the success of the advanced reactor demonstration program?

Answer 14: The development of advanced nuclear reactors and technologies is critical to achieve the Administration's climate goals, including reducing emissions from diesel generators in rural communities. The Department's Office of Nuclear Energy has a rich portfolio of advanced nuclear technology development and demonstration underway. If confirmed, I can commit to working with and supporting the Office of Nuclear Energy as the Department moves to implement your NELA.

Question 15: A key provision of the Nuclear Energy Leadership Act requires that the Department of Energy provide High-Assay, Low-Enriched Uranium to support the deployment of advanced reactor designs. DOE currently has in place a three-year program to demonstrate the production of HALEU using a domestic enrichment technology. Will you consider expanding this program to ensure that a U.S. HALEU capability exists to meet the demands of the U.S. advanced reactor community?

Answer 15: If confirmed, I will commit to carrying out Congressional direction and supporting policies that will help advance America's leadership in the nuclear space. If confirmed, I would also be happy to further discuss the particulars of your question with you and your staff.

Question 16: High assay, low enriched uranium (HALEU) is vital for a new generation of advanced nuclear reactors – including nine out of the 10 designs selected for the Department of Energy's Advanced Reactor Demonstration Program. The Department of Defense is considering deploying microreactors that would require

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HALEU and have an effort underway, called Project Pele, to build a prototype in the next three years. The problem is that HALEU is only commercially available today from one source – Russia. Our intent should be to provide a fully-American source of materials such as HALEU, an idea that has bipartisan, bicameral support. Do you agree that DOE should develop a robust domestic HALEU enrichment capacity so that the United States can reclaim leadership in advanced nuclear fuels and not depend on any form of foreign supply?

Answer 16: If confirmed, I will commit to carrying out Congressional direction and supporting policies that will help advance America’s leadership in the nuclear space. If confirmed, I would also be happy to further discuss the particulars of your question with you and your staff.

Questions from Senator James Lankford

Question 1: During the extreme cold weather event in mid-February, the grid in Oklahoma and other states in the region experienced significant challenges with regard to keeping the power on. Over about a week, wind generation dropped precipitously and coal generation provided sustained high levels of power to the grid. While this event certainly put a spotlight on wind’s ability to nearly instantaneously plunge its generation level, this is not a new or rare occurrence. As an intermittent source, wind did during this event what wind does: it behaved in a manner that is completely detached from electricity demand. If we replaced every coal facility with wind generation before storage technology exists at commercial scale, in your opinion what would be the impact on reliability of the system?

Answer 1: All forms of generation were impacted by the polar vortex in ERCOT. Going forward, weatherizing all our energy assets and ensuring better interconnection will help to make the grid more resilient.

Question 2: The Biden Administration has taken many different actions to try to limit development of traditional fuels, such as suspending and limiting leasing and permitting actions for oil and natural gas on federal lands. While these actions may reduce production from those lands, it will not do anything to reduce demand for the product in the near-term. However, it could jeopardize the energy independence that we have worked hard to earn. It also could put us in a position where we cannot help our strategic partners secure their energy needs.

- a. An IEA report from March 2, 2021, credited natural gas, in part, for reducing emissions. In your opinion, does natural gas have a role to play in lowering our emissions? If so, what is the scope of that role?

Answer 2a: Per unit of power generated, natural gas emits half the CO2 as coal. We also need to reduce methane emissions during production and transmission of natural gas to ensure its overall climate

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benefits when compared to coal. DOE will continue to work on efforts to make natural gas cleaner. If confirmed as Deputy Secretary, I will make sure the Office of Fossil Energy continues to invest in approaches that minimize the leakage of the natural gas supply chain in addition to retrofits of CCS on natural gas fired power plants.

- b. Over a few short decades, we have gone from having concerns about not having enough natural gas resources to support domestic consumption to being able to counter the geopolitical threats posed from countries looking to use their exports as a weapon, such as Russia. Do you agree that we should use our energy resources to help our allies? Do you believe that it is in the public interest to continue exporting our abundant natural gas?

Answer 2b: Our allies have greatly benefited from U.S. leadership on energy, and we should continue to use our energy resources to help them. The Department has specific Congressional authorities when it comes to exporting natural gas, specifically the Natural Gas Act. If confirmed, I look forward to being a part of the effort to make individualized determinations of public interest on particular applications.

Question 3: Mr. Turk, in the past you have shared that job losses as a result of companies downsizing or shuttering is very personal to you because of your experience seeing the impact of a local steel mill downsizing in your community growing up. You have also said that you have high confidence in the Biden Administration's ability to reduce emissions in the near term and address the job losses that would undoubtedly come with any policies targeting specific sectors or industries.

- a. Mr. Turk, do you believe that we are currently positioned to provide renewable energy jobs to every individual whose job gets cut as a result of this Administration's executive actions, like the one that halted the Keystone XL Pipeline or another that halted some energy development on federal lands?

Answer 3a: DOE needs to be at the forefront of scaling up a wide variety of clean energy technologies that will put Americans in construction, skilled trades, and engineering to work building a new American infrastructure and clean energy economy. Directly supporting workers affected by the energy transition will be a critical part of this. This is not going to be easy, and it will require day-in-and-day-out focus and a sense of urgency to create the jobs our communities need today and well into the future as well.

- b. Do you believe the skillsets are transferrable between jobs that already have been lost as a result of this Administration's executive actions and those jobs you hope will spring up in their place?

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Answer 3b: The United States is blessed with an abundance of talent as it relates to energy jobs. DOE is committed to working to capitalize on the talents of our American workforce taking into account their skills and abilities in advancing place-based jobs initiatives. We need to look closely at where we have a strategic advantage including clusters of skilled workers and take advantage of those skills in advancing key technologies like CCUS and carbon dioxide pipelines, among other opportunities.

- c. Do you believe these jobs are in the same geographic location? If not, how would you advise President Biden to deal with this very real, very personal consequence of this Administration's agenda?

Answer 3c: If confirmed as Deputy Secretary, I look forward to working with Secretary Granholm, others in the Administration, and our congressional colleagues to advance a unified strategy to claim those jobs, achieve emissions reductions, and secure opportunities moving forward. As you note in your question, it is very important that we take a place-based approach. If confirmed, I very much look forward to working further with you and your staff on this vital effort, which, as you note, is very personal for me.

Question 4: 2020 was historic in many tragic ways, but it was also historic in that domestic greenhouse gas emissions dropped an estimated 10.3 percent – the largest single year decline in the post-World War II era. While many other nations also saw reductions in emissions driven by the economic slowdown, there is one notable exception: China. Despite a decline in emissions in the first half of 2020, their emissions ramped up so significantly in the second half of the year that their emissions in 2020 actually *increased* by about 1.5 percent over 2019. This is reportedly in part due to increased coal demand, particularly in the second half of 2020. It is concerning to me that even in the middle of a global pandemic, the largest emitter could notch an increase in emissions – this portends even higher emissions to come as we continue to see more light at the end of the tunnel regarding reopening the US economy and economies around the world.

- a. If confirmed, how would you advise the President to approach nations that have a large emissions footprint – particularly those whose emissions are still rising year-over-year?

Answer 4a: As you rightfully note, all countries around the world will need to be aggressive on greenhouse gas emission reductions in order for the world to meet our shared climate goals, and it is certainly the case that many countries around the world – including China – need to do much more. The United States needs to play a strong leadership role, and we need to have an aggressive, eyes-wide-open strategy with regard to other top emitters, especially China. If confirmed, I would look forward to working with the full DOE team to continue innovating a wide range of clean energy technologies. DOE

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can also play an important role in helping – and in many cases pressuring – other countries to deploy additional clean energy technologies and to reform their processes to drive down emissions. DOE also has extensive modeling capabilities that can be helpful as part of this robust international strategy. If confirmed, I look forward to further discussing these important issues with you and your staff at your convenience.

- b. Given that we are currently taking steps to reduce emissions domestically while also allowing other nations to continue increasing their emissions, are you concerned that we are simply exporting our emissions and jobs overseas without achieving a net reduction? Why or why not?

Answer 4b: When it comes to climate change, we need to have both an ambitious domestic strategy and an ambitious, eyes-wide-open international strategy. Moreover, the fundamental premise of this Administration’s approach to climate change is that solving this problem also represents an unparalleled opportunity to create jobs and to capture clean energy markets around the world. If confirmed, I look forward to working with you and other members of the Committee to help ensure those job opportunities are maximized for all Americans.

Question 5: The past year has demonstrated that we must not be ignorant to the location from where we are sourcing the goods and materials that we depend on for our health and livelihood. Mr. Turk, should you get confirmed, something you will be tasked with on day one will be assessing the risks of our battery supply chains pursuant to the President’s executive order on supply chains. And at DOE, you will be responsible not only for pointing out the problems, but delivering some of the solutions to this critical issue.

- a. Mr. Turk, what tools do you believe DOE has at its disposal to strengthen our domestic expertise and manufacturing of these types of goods? How do you intend to use these tools?

Answer 5a: The DOE has multiple efforts aimed at strengthening the U.S. battery supply chain, including conducting RD&D to improving the domestic supply and manufacturing capability for critical materials used in batteries; developing substitute materials; and improving reuse and recycling. 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. I would also explore whether DOE’s Loan Program Office can also play an expanded role in supporting the domestic battery supply chain within existing authority.

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- b. Securing supply chains does not just mean ensuring we have the ability and capacity to produce certain goods here; it also means working with our allies to secure their supply chains, and diversifying sourcing to guard against unforeseen disasters. Mr. Turk, your experience is heavily in international cooperation on a variety of issues. How would you advise the President on how best to bolster our cooperation and coordination with our allies specifically regarding supply chain security?

Answer 5b: The President has indicated his intent to work with partners and allies on supply chains through his recent Executive Order, especially on products that are critical to our future energy needs. While we look for every opportunity to build and strengthen domestic manufacturing and production, we cannot do it all by ourselves. In confirmed, I would look to coordinate with others in DOE and throughout the U.S. government to continue to work with partners and allies to diversify supply chains, mitigate single points of failure, find alternatives to suppliers of concern, and prevent potential market manipulations.

Questions from Senator Catherine Cortez Masto

Question 1: When you came before the Senate Energy and Natural Resources Committee in June last year, you highlighted the IEA's *Sustainable Recovery Plan*, which shows that in planning for recovery from the pandemic, governments have the opportunity to boost economic growth, create millions of new jobs, and reduce global greenhouse gas emissions.

- a. If confirmed, will you be looking to incorporate any aspects of this plan in DOE's efforts to Build Back Better?

Answer 1a: If confirmed as Deputy Secretary of Energy, I would certainly look to take any lessons I have learned at the IEA and, where applicable, look to apply them in to the U.S. context. Many of the IEA's recommendations are already featured in President's Biden's Build Back Better plan.

- b. Are there particular recommendations you would like to see adopted in the U.S.?

Answer 1b: The IEA's Sustainable Recovery Plan provides a whole host of suggestions for governments around the world to incorporate into their respective stimulus plans. I would particularly highlight the wide variety of energy efficiency measures highlighted in the IEA analysis that provide substantial jobs, economic benefits and greenhouse gas emissions.

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Question 2: Nevada's utility-scale electricity generation from geothermal resources contributed roughly one-third of the state's total renewable generation in 2019. Moreover, Nevada ranks second in the nation for geothermal production, and the industry accounts for more than 400 jobs in the Silver State.

Geothermal energy has a key role to play in Nevada's and the nation's energy future; but as with many renewable technologies, the large-scale deployment of geothermal will require additional, reliable transmission.

- a. In your opinion, what more can the U.S. be doing to accelerate transmission upgrades across the country to better facilitate the expansion of renewable energy technologies, like geothermal?

Answer 2: Transmission is one of the key technology advancements that will allow for increased access to renewable energy resources, including geothermal. Upgrading existing transmission line voltages/reconducting is a near-term opportunity. Especially important opportunity would be to increase Direct Current (DC) transmission capacity along the interconnection seams of the Eastern-Western-ERCOT interconnections. Accelerating transmission will require state and federal coordination for siting and permitting, methods for cost allocation and the development interconnection-wide transmission planning processes.

Question 3: The Biden Administration has underscored the need for smart investments and incentives in energy efficiency. Our nation's school buildings represent an excellent opportunity for these investments not only to make communities healthier and improve learning conditions for our students, but also 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.

I will be reintroducing the *Renew America's Schools Act* this Congress to help schools invest in energy efficiency, build-out renewables, and purchase zero-emission buses and charging equipment. The bill would also be complementary to the work being done through the 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 3: Yes.

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Questions from Senator Bill Cassidy

Question 1: In your opinion, what is the biggest challenge DOE faces in commercializing emission reduction technology and if you are to be confirmed, how would you work to solve the “valley of death problem” i.e., the gap between academic-based innovations and their commercial application in the marketplace?

Answer 1: While we have technologies that can be used to achieve deep decarbonization, too few real-world projects exist, especially at scale. For example, there is limited economic incentive today to capture CO₂ and store it deep in the earth. In addition, as you point out, many promising technologies can’t pass the “valley of death”. The combination of Research and Development, funding opportunities, tax incentives, and the use of programs such as the Department of Energy’s Loan Program Office can all help to support the commercialization of promising energy technologies. If confirmed, I would be eager to further discuss these important issues further with you and your staff.

Question 2: What actions will you take to ensure DOE can effectively partner with the private sector to accelerate the deployment of clean energy technologies such as nuclear energy, carbon capture, direct air capture, and others?

Answer 2: More and more companies are making net-zero targets and are looking for opportunities to purchase sustainable and low-carbon products. Through engaging in public-private partnerships we can assist in coupling front-end engineering and design studies to deployment with shared financing – similar to some of the projects currently funded by the Office of Fossil Energy.

Question 3: The Energy Act of 2020 that was passed at the end of last year authorizes funding for more than 20 technology demonstration projects, including advanced nuclear energy, carbon capture, geothermal, energy storage, hydropower, direct air capture, and fusion.

Will you prioritize the success of these ambitious technology moonshot demonstration projects that are essential to meeting our objective here at home and to cost-effectively driving down global emission?

Answer 3: Yes.

Question 4: In 2015, Congress authorized the creation of a modernization fund to construct, maintain, repair and replace SPR facilities. The Secretary was authorized to draw down and sell crude oil from the SPR up to \$2 billion between fiscal years 2017 through 2020 to carry out a SPR modernization program. My staff tells me the Department will soon be issuing a decision memo to cap the fund at \$1.4B rather than ask Congress for more time to fill the fund to the authorized amount. I know you are not at the Department, but I am concerned about this. We are short changing efforts to modernize assets at the SPR.

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- a. How can we ensure the safe storage of energy resources in the future if we are not making the maximum investments possible?

Answer 4a: I completely agree with you that the security of the SPR should be a priority. We should also examine strategies that will make these sites more resilient to severe weather impacts. If confirmed, I look forward to further working with you and your staff.

- b. Will you work with Secretary Granholm to request Congress further extend DOE's authority to sell crude oil in order to further fund the SPR modernization fund?

Answer 4b: My understanding is that DOE is heeding the modernization sales, but there have been delays due to the COVID-19 pandemic. If confirmed, I look forward to working with you and with Secretary Granholm further on this issue.

Question 5: Over the past several years, Beijing has brought online more new coal power plants than the rest of the world combined. In 2020, China's government approved plans to build twice as many more-

How might the global impacts of China's energy production improve if it used American LNG to meet the country's energy needs?

Answer 5: I agree with you that China needs to do much more to reduce its greenhouse gas emissions. A priority of DOE is to decrease the leakage of the natural gas supply chain, which is necessary to ensure that natural gas maintains its edge with respect to coal when it comes to greenhouse gas emissions. Assuming we take care of this methane emission leakage problem, U.S. produced natural gas can lead to lower emissions when displacing coal both domestically and overseas.

Question 6: Many experts believe that the advent of United States as a natural gas exporter has made global natural gas markets more competitive, diminished the ability of countries like Russia to use energy supply as a coercive tool, and lowered the cost of decarbonization for countries transitioning to lower carbon economies.

Do you believe this to be true, and do you support the continued exports of US liquefied natural gas (LNG) as a useful tool that strengthens US foreign policy?

Answer 6: The Natural Gas Act requires the Department of Energy to make determinations if export applications to non-FTA countries are in the national interest of the United States. As you know, each application is unique and needs to take into account the full circumstances surrounding that particular

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application. That all said, it is certainly true that it is a good thing for other countries to receive energy supplies and technologies from the United States as opposed to countries whose interests do not align with our own.

Questions from Senator Cindy Hyde-Smith

Question 1: In a recent Washington Post article, you stated, “Growing up in a small Midwestern town, I saw up close our community struggle when the local steel mill downsized and laid off more and more workers. If confirmed, I’ll carry this experience to my work at the Department of Energy to make sure we listen to the voices of workers and families impacted by changing economic conditions so the clean energy future we build creates good-paying jobs in all corners of our country.” As I am sure you are aware, halting production of essential fossil fuels in my state alone would leave families without a source of income, thousands of jobs in our ports, refineries, and processing plants will be heavily affected. Although listening is an important component to help in a time of crisis, what would be your detailed plan to help my constituents who have lost their jobs to the Biden energy policy?

Answer 1: Growing up in Rock Falls, Illinois, I saw firsthand the impacts that communities and families faced from industry transitions. Through my experience at IEA and elsewhere, I am a firm believer that energy is good – it powers livelihoods and fuels our nation; it is emissions that are the challenge. If confirmed, I would be committed to working with you and other members of the committee to ensure we are creating good-paying jobs in communities that are in transition. The United States is blessed with an abundance of talent as it relates to energy jobs. DOE is committed to working to capitalize on the talents of our American workforce taking into account their skills and abilities in advancing place-based jobs initiatives. We need to look closely at where we have a strategic advantage, including clusters of skilled workers and take advantage of those skills in advancing technologies like CCUS, carbon dioxide pipelines, hydrogen (whether so-called “blue” or “green”), among other opportunities. 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 scale to create jobs for Americans.

Question 2: On January 20, 2021, President Biden rejoined the Paris Agreement. After the Trump Administration left the agreement, America achieved energy independence from foreign competitors and began exporting natural gas for the first time in 60 years. How do you foresee the U.S.’s involvement with the Paris Agreement when studies have concluded that by rejoining the Agreement, there would be an overall loss of nearly 400,000 jobs, half of which will be in manufacturing, energy prices will be driven higher for the vast

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majority of Americans, and some of the world's largest polluters, countries like China, India, Pakistan, and Russia, will continue polluting without true consequence?

Answer 2: As you rightfully note, all countries around the world will need to be aggressive on greenhouse gas emission reductions in order for the world to meet our shared climate goals, and it is certainly the case that many countries around the world – including China – need to do much more. The United States needs to play a strong leadership role, and we need to have an aggressive, eyes-wide-open strategy with regard to other top emitters, especially China. While I am not familiar with that particular report you reference, the analyses that I have seen suggests that action on a broad range of clean energy technologies presents the United States with a major opportunity to be a global leader in developing clean energy technologies that can be used in the United States and sold around the world. This outcome could bolster our manufacturing sector and create good-paying jobs for American workers. If confirmed, I look forward to further discussing these important issues with you and your staff at your convenience.

WILLIAM FLYNN MARTIN

February 26, 2021

The Honorable Joe Manchin III
Chairman, Committee on Energy & Natural Resources
United States Senate
306 Hart Senate Office Building
Washington, DC 20510

Dear Chairman Manchin:

As Ronald Reagan's Deputy Secretary of Energy (1986-88), I want to give my strong support for the nomination of David Turk to be United States Deputy Secretary of Energy. He has shown great skill and sensitivity in his many jobs at the State Department, Department of Energy and the National Security Council.

David's role at the International Energy Agency (IEA) as Deputy Executive Director shows that he is also respectful of the importance of energy security. His personal leadership and reputation at the IEA will ensure that other nations will collaborate more closely with the Department on climate and energy issues. It is the balance of energy security and climate preservation on an international level that will be the most important issues of our time. David will be a leader domestically and internationally to pursue these initiatives. He will be a multiplier of the interests of sound US energy, environment and international policy.

I also believe that David's experience in government is a real plus in providing leadership to the vast and important nuclear energy enterprise and scientific endeavors of the Department of Energy (DOE). I had the honor of serving Presidents Barak Obama and George W. Bush as Chairman of the DOE Nuclear Energy Advisory Board and I believe that David will do an excellent job managing the DOE nuclear facilities. I expect he will give high priority to environmental management as well as pursuit of safe development of nuclear power to help assist in climate protection and national security.

You will be calling him frequently for hearings on a variety of subjects and I know from my personal experience that a close relationship between the chief operating officer of the Department and the Congress is vitally important. I believe that he will perform this duty exceptionally well.

I would be grateful if my letter could be entered into the Record of the Committee's deliberations over what I hope will be the speedy confirmation of Mr. Turk.

Respectfully,



William F. Martin
United States Deputy Secretary of Energy (1986-88)
Chairman of the DOE Nuclear Energy Advisory Board (2002-2012)

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