**U.S. Senate Committee on Energy and Natural Resources**
**April 10, 2025 Hearing: *The Griffith & Gil Nominations***
**Questions for the Record Submitted to Dr. Dario Gil**

## Questions for the Record from Ranking Member Martin Heinrich

**Question 1:** A primary role of the federal government is to do the high-risk, high-reward research that industry may not do. Should we, as a nation, be making more bets on foundational AI technologies, and how can we do that in a way that improves competition, respects individual privacy, and protects intellectual property?

Response: The U.S. Department of Energy (DOE) must be a catalyst for innovation and global leadership in Artificial Intelligence (AI). By advancing competition around foundational AI technologies – through research and development, open infrastructure and strategic partnerships – we can unlock transformative breakthroughs while protecting against consolidation and foreign exploitation. As adversaries invest heavily in AI for strategic advantage, the DOE's leadership is vital to ensure secure, U.S.-led innovation that strengthens our economic competitiveness, safeguards national security, and keeps America at the forefront of global technological leadership.

**Question 2:** The Under Secretary for Science will have a major role to play in ensuring the continued success of the National Quantum Initiative. If confirmed, what would your strategic plan be for ensuring that the Department of Energy is using quantum computing and classical computing technologies in concert to solve DOE mission problems? How would you ensure that DOE's quantum computing efforts are appropriately considering all technological modalities?

Response: To ensure success of America's quantum computing efforts, the DOE must continue leading across the landscape of quantum modalities. It is also time to mobilize the nation's best teams to achieve the final frontier of building an error-corrected quantum supercomputer before the end of this decade. By leveraging the unique strengths of our national labs and fostering collaboration with industry and academia, the DOE can accelerate breakthroughs, scale quantum infrastructure and safeguard U.S. leadership in this critical frontier of technology and security.

## Questions for the Record from Senator Steve Daines

**Question 1:** Dr. Gil, the United States must continue to be a leader in advanced computing. China is already graduating ten times more STEM graduates than the United States. The surprise announcement of DeepSeek AI shows that China will continue to innovate even with the U.S. export restrictions. This means the U.S. needs to run faster. Will you commit to working with congress and the administration to ensure the U.S. maintains leadership in quantum computing and semiconductor design and manufacturing?

Response: To maintain innovation and our competitive advantage over foreign adversaries like China, the U.S. must double down on foundational research, domestic computing capacity, and workforce development. The DOE plays a pivotal role in this effort by mobilizing the national labs, securing advanced semiconductor supply chains and ensuring trusted AI systems are developed on American soil. We cannot afford to cede leadership in AI innovation to regimes that do not share our values or commitment to openness, security and responsible use. This also

true for quantum computing, an industry of the future that the U.S. must dominate, as it has profound scientific, economic, and national security implications.

**Question 2:** Dr. Gil, if confirmed to this position, you will play a key role in supporting and advancing U.S. in innovation and working with industry to address the increasing need for power to support innovation. Will you commit to working together with Mr. Griffith to ensure we have the power and the resources to be world leaders in high-tech innovation?

Response: If Mr. Griffith and I are confirmed, I will absolutely commit to working with him and others at the Department to ensure we have the necessary energy to drive high-tech innovation. The DOE must take the lead to ensure our energy infrastructure can meet the growing demands of high-tech innovation like AI data centers, quantum computing and advanced manufacturing. This means accelerating grid modernization, transmission capacity and generating more baseload power.

**Question 3:** Dr. Gil, my bipartisan *Department of Energy Quantum Leadership Act* would reauthorize DOE's portion of the National Quantum Initiative Act. Will you commit to working with me and my colleagues to reauthorize and prioritize the National Quantum Initiative programs at DOE?

Response: I am aware of the Act and its efforts to expand DOE's quantum research and development efforts. I also know that the DOE's five National Quantum Information Science Research Centers are designed to accelerate quantum research and technology by delivering novel platforms and major scientific breakthroughs. If confirmed, I look forward to hearing your perspectives and priorities for reauthorization. In so doing, I would like to encourage us to not only support the field of quantum information science, but to also challenge the nation to deliver an entirely new capability, namely, to build the world's first error-corrected quantum supercomputer before the end of this decade.

## Questions for the Record from Senator Ron Wyden

**Question 1:** Will you work with Congress to drive American innovation that is essential for maintaining US global leadership, national competitiveness, and national security? What do you think the role of DOE research is to ensure the US maintains our global leadership on innovation and energy security for the future? How can the DOE Office of Science leverage inter-governmental collaborations to better streamline the US research development pipeline to maintain and secure leadership in emerging industries? What is needed to do so?

Response: To maintain U.S. leadership in innovation and energy security, the DOE must continue driving world-class research and invest in the next generation of scientists and engineers. By advancing breakthroughs in material science, fusion energy, quantum technology, the Office of Science can enable the discovery-to-development pipeline that fuels economic competitiveness and national security. By defining ambitious technological goals and road maps on our most important priorities, we have the opportunity to align directions across agencies, reduce unnecessary duplication, and allow resources to be utilized to drive success.

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**Question 2:** Multiple National Labs have been affected by Trump's spending freeze. For example, $37 million of research activities was suspended at Argonne National Lab and a $7 million grid resiliency project was defunded at Lawrence Livermore National Lab. As the Undersecretary of Science, how will you protect critical research activities in National Labs, especially those related to clean and renewable energy and/or authorized through the Bipartisan Infrastructure Law and the Inflation Reduction Act?

Response: I am not aware of any specific plans to freeze or suspend funding. I do believe that the DOE national laboratories have some of the world's premier engines of scientific discovery and innovation. We should strengthen lab capabilities and foster collaboration with industry and academia to accelerate technology breakthroughs and secure America's global leadership in science and innovation.

**Question 3**: Diverse energy sources will be key to meeting growing energy demand, particularly with the rise of data centers and artificial intelligence. With grid complications, co-location is one way for data centers to ensure energy supply. Within DOE's jurisdiction, how will you support innovative co-location strategies, e.g. hydrokinetic-powered data centers? Do you see potential for the development and commercialization of offshore data centers?

Response: I believe the most critical challenge for powering AI data centers is ensuring high-capacity, reliable electricity that can scale quickly without compromising grid stability. This requires investments in transmission infrastructure, siting coordination and access to dispatchable power sources like nuclear, natural gas and advanced storage.

**Question 4:** The US has a multi-agency and cross-sector approach to our scientific research and data sharing ecosystem. For instance, the DOE has a longstanding partnership with the National Science Foundation (NSF) on large physics experiments, quantum information sciences, and artificial intelligence. The National Labs also share their cutting-edge facilities with academic institutions to support research in areas such as bioscience and advanced materials. Do you plan to continue and strengthen collaboration with federal science agencies such as the NSF and with academic institutions? As undersecretary, how do you plan to support this collaboration?

Response: I believe DOE's partnership with the National Science Foundation (NSF) should continue and be strengthened. To meet the scale of today's energy and technology challenges, the DOE must expand strategic collaborations with other federal agencies, private industry, national laboratories and academia.

**Question 5:** The National Labs are home to world-class research facilities and develop critical and emerging technologies such as artificial intelligence, quantum computing, and semiconductors. How will you protect the security of the American research enterprise not only from malign foreign actors but also from individuals within the federal government who have financial ties to foreign powers?

Response: To maintain a competitive and innovation advantage over foreign adversaries like China, the U.S. must double down on foundational research, domestic computing capacity, and workforce development. The DOE plays a pivotal role in this effort by mobilizing the national labs, securing advanced semiconductor supply chains and ensuring trusted AI systems are developed on American soil. We cannot afford to cede leadership in AI innovation to regimes that do not share our values or commitment to openness, security and responsible use.

**Question 6:** The National Labs have provided crucial support to the pilot of the National AI Research Resource (NAIRR) by providing access to their supercomputers for researchers advancing the state of the art in trustworthy AI. Will you advocate for continuing to invest in research that keeps the United States at the forefront of developing AI that is reliable and broadly beneficial? Will you advocate that the discoveries of taxpayer-funded AI research should be publicly available, in order to promote innovation, competition, and access to its benefits?

Response: National lab research should continue to be broadly available to the public where it drives innovation, spurs private-sector competition, and maximizes taxpayer investment. Open science has been a powerful engine of American leadership in technology and discovery. However, we must also be clear-eyed about national security. Research tied to critical technologies must be protected from exploitation by adversaries like China. The DOE must safeguard sensitive data, enforce export controls and work closely with the intelligence community to prevent the misuse of federally funded research.

## Questions for the Record from Senator Maria Cantwell

**Question 1**: **Pacific Northwest National Laboratory**
Dr. Gil, the National laboratories bring tremendous capabilities and intellectual horsepower in key areas of energy and national security including grid reliability, energy storage and cybersecurity.

- Will you advocate for robust resources for our national labs and continued investments in improving the capabilities and infrastructure of our national labs?

Response: I believe the DOE national laboratories have some of the world's premier engines of scientific discovery and innovation. We should strengthen lab capabilities and foster collaboration with industry and academia to accelerate technology breakthroughs and secure America's global leadership in science and innovation.

Last year I attended the dedication of the Grid Storage Launchpad (GSL) at Pacific Northwest National Laboratory. As you may know, GSL is a grid energy storage research and development facility that will help accelerate development of next-generation grid energy storage technologies.

- How will you as the leader of the Department utilize GSL to advance America's energy storage competitiveness to eliminate/reduce our reliance on foreign owned critical minerals and foreign supply chain risks?

Response: I am aware that the Grid Storage Launchpad at the Pacific Northwest National Laboratory (PNNL) is a key part of our national effort to advance energy storage innovation. The facility brings together grid operators, industry partners and researchers to validate new storage technologies under real-world conditions. By accelerating the transition from research to deployment, the Launchpad strengthens scalable energy storage solutions. I look forward to learning more about the Grid Storage Launchpad and opportunities to strengthen domestic supply chains.

Starting in the first Trump Administration, DOE has invested in advancing the role of energy innovation in the blue economy—ports, maritime, marine energy and ocean observation—and advancing our nation's energy security. Some of those key investments have been made at the Department's Marine and Coastal Research Laboratory at PNNL-Sequim.

- Will you commit to continuing DOE's support for these investments, and visit PNNL-Sequim?

Response: I know DOE's PNNL Marine and Coastal Research Laboratory in Sequim offers unique capabilities to advance our interests in the blue economy. I am not aware of their current funding or future plans for investments. If confirmed, I will review the status of opportunities at Sequim and a possible visit to the lab.

As you know, DOE has a key role to play in AI. In my home state for example, PNNL is a leader in applying AI to grid modernization, advancing scientific discovery in chemistry, and national security. It is critical that DOE is properly included as the Trump Administration approaches AI, including utilizing national laboratory assets.

- How will you ensure that DOE's capabilities are brought to bear in AI, across the Trump Administration and for the nation? How will you ensure that DOE and its national labs can continue advancing AI work?
- As artificial intelligence continues to transform our world, including at our national labs, what role do you see for national labs and the Department of Energy in driving innovation in, and application of, AI technologies?
- Where are the most critical areas for the national labs to advance the development and application of AI to DOE's mission?

Response: To maintain innovation and our competitive advantage over foreign adversaries like China, the U.S. must double down on foundational research, domestic compute capacity, and workforce development. The DOE and the PNNL play a pivotal role in this effort by mobilizing the national labs, securing advanced semiconductor supply chains and ensuring trusted AI systems are developed on American soil. We cannot afford to cede leadership in AI innovation to regimes that do not share our values or commitment to openness, security and responsible use.

The national labs contribute to U.S. national security in many ways; the Pacific Northwest National Lab is the lab of choice for the Defense Nuclear Nonproliferation program and supports the nuclear deterrent.

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**April 10, 2025 Hearing: *The Griffith & Gil Nominations***
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- Given the strategic contributions of the labs beyond the traditional weapons labs to national security, what is your view on ensuring that all national labs continue to advance both scientific innovation and national security?
- What role will the Department continue to play in supporting nuclear nonproliferation?

Response: The DOE national labs are pillars of the U.S. national security apparatus. The PNNL plays a critical role in that mission by developing advanced technologies for nuclear material detection to prevent the spread of nuclear weapons and monitor compliance with international agreements. Through its deep scientific expertise and close coordination with NNSA, the Department of Defense and intelligence agencies, the PNNL help ensure the United States remains secure and prepared against nuclear threats.

The national labs play a pivotal role in advancing a wide range of scientific disciplines, from quantum computing to developing the world's most sensitive instruments.

- What is your view on the importance of continued investment in these research areas at the national labs to maintain U.S. leadership in technological innovation and national security?
- Where do you see the biggest opportunity for continued biological research in addressing our nation's energy abundance and resilience? What role do you see for the national labs here?
- How will you use your position to elevate the STEM workforce to develop the next generation of scientists and engineers?

Response: The DOE national laboratories offer unmatched opportunities to advance quantum science and instrumentation, like foundational research in qubit technologies and precise measurement systems. To sustain advancements, we need a highly skilled workforce. I believe we should partner with universities and industry to serve as a development pipeline for talent.

**<u>Question 2</u>: Fusion Energy**

Dr. Gil, one of the great energy successes we have had in recent years is in fostering public-private partnerships. These partnerships are especially critical for supporting the rapid expansion of newer energy technologies.

- Can explain how you believe the Department of Energy can continue to support the development of public-private partnerships to help the commercial deployment of emerging technologies such as fusion energy.

Response: Fusion energy presents a transformative energy goal, and it will require collaboration between public and private sectors. The DOE should leverage public-private partnerships to accelerate the translation of scientific progress into commercial fusion systems. By aligning federal assets with private-sector agility, we can make fusion energy a reality.

As the US looks to lead on the development of next generation power technologies, like fusion, but also advanced nuclear, and enhanced geothermal, what role do you envision for the DOE in helping bring these new technologies to the market?

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**April 10, 2025 Hearing: *The Griffith & Gil Nominations***
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- In particular, what role do you see the DOE Loan Programs Office (LPO) in helping financially support new generation technologies not yet at commercial scale?
- What other actions do you believe the Department of Energy should take to ensure the U.S. remains the world leader in fusion technology?

Response: I believe DOE should focus on investments in next-generation power technologies like fusion, advanced nuclear and geothermal where we have the greatest return in national benefit and the strongest path to near-term success. We should concentrate efforts on scalable, high-impact demonstrations, supporting public-private partnerships that can rapidly deploy viable technologies, aligning resources with commercial readiness.

Fusion energy is an inherently safe and predictable, geographically unconstrained baseload power source that could contribute to the resilience and reliability of America's energy grid right as domestic power demands are increasing rapidly. We are in a global race to develop fusion energy, and in order to maintain energy dominance and global leadership, the U.S. needs to win that race.

As co-chair of the Commission on the Scaling of Fusion Energy, I want to point you to the commission's recently released preliminary report that recommends "the United States should establish an explicit National Fusion Goal of starting construction on the world's first commercial fusion power plant this decade. Achieving this goal would solidify the United States as the world's leader in fusion energy, and catalyze a thriving and ultimately self-sustaining commercial fusion industry."

- Will you commit to reviewing this report that lays out the case for fusion energy and steps we need to take now to ensure the United States is in position to win this race?

Response: If confirmed, I will review the report and I look forward to learning more about your perspectives from your work on the Commission.

## Questions for the Record from Senator Catherine Cortez Masto

**Question 1:** If confirmed as Under Secretary of the Office of Science, how will you collaborate with other offices, agencies, and private companies to leverage investments made in basic research?

Response: The US spends annually over $850 billion in R&D, with the Federal government providing slightly less than $200B. Securing U.S. scientific leadership requires that we optimize cross-agency and cross-sectoral collaboration to draw on the strengths of all parts of our S&T ecosystem. If confirmed, this will be a top priority of my tenure.

**U.S. Senate Committee on Energy and Natural Resources**
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**Question 2:** The Office of Science interacts with a variety of firms, including Fortune 500 companies. If confirmed, how would you work to support small businesses as the overseer of the Department of Energy's Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) funding programs?

Response: DOE public-private partnerships offer many benefits and collaboration opportunities. By aligning national lab capabilities with small business innovation, DOE can maximize the use of funds and support regional economic developing while supporting scientific breakthroughs.

**Question 3**: The Department of Energy's (DOE) Office of Science Mission Statement features the following – the Office of Science is "the lead federal agency supporting fundamental scientific research related to energy." Do you support continued federal support of research projects to enhance energy efficiency and develop new energy sources and storage systems for the grid?

In recent decades, would you agree there have been continued improvements in energy efficiency, producing more efficient homes and appliances, and that these innovations have benefited from government research funding?

Response: I believe the DOE should prioritize energy efficiency research that delivers measurable results across different sectors, including next-generation semiconductors as well as cross-cutting technologies that benefit grid and transmission objectives. By aligning fundamental science with practical outcomes, we can ensure investments advance long-term innovation and deliver tangible savings in the near-term.

**Question 4:** Dr. Gil, you previously served as the Chair of the National Science Board (NSB), which oversees the National Science Foundation (NSF). What is your understanding of the current relationship between NSF and the Office of Science?

If confirmed, would you commit to fostering this relationship in order to leverage federal investments and partnerships to accelerate discovery and innovation?

Response: I am aware of the partnership with the National Science Foundation (NSF) and the opportunities ahead to strengthen the collaboration. To truly meet the scale of today's energy and technology challenges, I believe the DOE must expand strategic collaborations with other federal agencies, private industry, national laboratories and academia in addition to the existing work with the NSF.