

Attachment—Additional Questions for the Record

**Subcommittee on Energy
Hearing on
“Securing our Energy Infrastructure: Legislation to Enhance Pipeline Reliability”
Wednesday, January 19, 2022**

The Honorable David M. Turk, Deputy Secretary, U.S. Department of Energy

QUESTIONS FROM THE HONORABLE FRANK PALLONE, JR. (D-NJ)

- Q1. The Energy Product Reliability Act (H.R. 6084) instructs the Energy Product Reliability Organization to consult with the Secretary of Energy in developing energy product reliability standards for cybersecurity.
- Q1a. Can you please elaborate on the Department of Energy’s role in coordinating cybersecurity for the energy sector, including the oil and gas industries?
- A1a. The Department of Energy (DOE) is the Sector Risk Management Agency (SRMA) for the Energy Sector. In that capacity, DOE, through the Office of Cybersecurity, Energy Security, and Emergency Response (CESER), works closely with the entire U.S. energy sector to prepare for and respond to risks and threats to energy infrastructure. One specific way in which DOE coordinates cybersecurity with the energy sector is through the Energy Government Coordinating Council (EGCC). The EGCC is co-led by DOE and the Department of Homeland Security (DHS) and includes multiple agencies, including The Department of Transportation’s Pipeline and Hazardous Materials Safety Administration, the Transportation Security Administration, the Federal Bureau of Investigation, the Office of the Director of National Intelligence, among others, and acts as the counterpart to the industry-led Oil and Natural Gas Subsector Coordinating Council (ONG SCC). The ONG SCC includes the entire oil and natural gas supply chain (e.g., upstream, midstream, and downstream) and acts the primary forum between to discuss all risks and threats to oil and natural infrastructure in the United States.

In addition to the formal EGCC-ONG SCC coordination efforts, DOE is engaged in a number of efforts to improve energy sector cybersecurity. These activities include threat information sharing, supply chain risk management, cyber training for owners and operators, workforce development, and the development of cyber frameworks and tools.

DOE recently released version 2.0 of its Cybersecurity Capability Maturity Model (C2M2), which helps energy companies assess the maturity of their cybersecurity programs. C2M2 version 2.0 was developed through input from 145 energy sector cybersecurity practitioners representing 77 organizations including electricity, oil, and natural gas subject matter experts.

Q1b. Do you agree that the Energy Product Reliability Organization should consult with the Secretary of Energy in establishing energy product reliability standards for cybersecurity?

A1b. The Department of Energy's (DOE) subject matter expertise could be leveraged in the referenced process. Similarly, DOE provides subject matter expertise to the Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC) on electricity sector reliability, security (cyber and physical), and resiliency.

Q1c. Are there any mandatory cybersecurity standards for oil and gas pipelines, and if so, when do those standards expire?

A1c. The Transportation Security Administration (TSA) has the authority to regulate pipeline cybersecurity. Under this authority, TSA recently released emergency mandatory security directives for select oil and natural gas pipelines and can provide the latest information on the requirements.

Q1d. Do Russia and China pose a cybersecurity threat to critical energy infrastructure, including oil and gas pipelines?

A1d. Yes, Russia and China continue to pose a cybersecurity threat to critical infrastructure, including oil and gas pipelines, as highlighted in the U.S. intelligence community's annual threat assessment.

Q1e. If your answer to Question 4 was yes, do you think mandatory cybersecurity standards for oil and gas pipelines would help guard against the threats posed by Russia and China?

A1e. The Department of Energy supports the need for additional cybersecurity oversight of the oil and natural gas sector broadly, including pipelines, through a collaborative government-industry approach.

QUESTIONS FROM THE HONORABLE TOM O'HALLERAN (D-AZ)

- Q1. It is critical that we continue to strengthen our cyber defenses against malicious threats. While larger utilities often have the resources to invest in strong cybersecurity infrastructure, smaller utilities and rural utilities do not. Creating and funding the Rural and Municipal Utility Advanced Cybersecurity Grant and Technical Assistance Program in the bipartisan infrastructure bill, was a key part of addressing this issue.
- Q1a. Do you have an update on the status of that program and do you anticipate that DOE will start awarding grants and technical assistance this year?
- A1a. The Department of Energy (DOE) has a long history of working with municipal and rural electric utilities to address the cybersecurity of their systems. DOE intends to build upon those relationships and partnerships to implement the Infrastructure Investment and Jobs Act's (IIJA) technical assistance program to support those utilities. The Department is working diligently to develop plans to execute those funds.
- Q1b. Are tribal entities eligible for the program? If not, are there other programs within the Department that allow tribal-affiliated organizations to apply and receive cybersecurity funding and technical assistance?
- A1b. Tribal-affiliated organizations are eligible to apply for and receive funds and technical assistance under the IIJA's Grid Resilience Provisions: 40101 and 40103(b), which are also being implemented by offices within the Office of the Undersecretary for Infrastructure. Congress did not explicitly include Tribal entities as eligible entities in this program. Eligible entities for this program are rural electric cooperatives, municipal utilities, certain not-for-profits, and small investor-owned utilities, which could include direct or indirect involvement of Tribal entities.

QUESTIONS FROM THE HONORABLE FRED UPTON (R-MI)

- Q1. On his first day in office, President Biden issued an Executive Order revoking the cross-border permit for the Keystone XL pipeline. The Keystone XL pipeline would have created tens of thousands of jobs and ensured a stable supply of nearly 800 thousand barrels per day of crude oil from a close ally and trading partner, Canada. If President Biden had not revoked the permit, the Keystone pipeline would allow the U.S. to produce more gasoline and diesel, while helping the U.S. to reduce imports from the Middle East and Russia. The Administration is also considering closing down Michigan's Line 5 pipeline, which supplies a large portion of the Midwest's propane and essential fuels for heating, agriculture, and manufacturing.
- Q1a. What is the Administration's position on the potential closure of Line 5?
- A1a. The Department of Energy cannot comment on the situation concerning Line 5 or the Administration's position on its potential closure. DOE does not have a direct role in any of the legal issues associated with this project. We are tracking the engagement between the State of Michigan and Enbridge on matters related to Line 5 and hope the parties can come to a mutually agreeable resolution.
- Q1b. Has DOE conducted analysis to determine the impact of closing Line 5? If so, please provide that analysis.
- Q1c. In 2018, the operator of Line 5 and the State of Michigan reached an agreement to build a tunnel beneath the Straits of Mackinac to replace Line 5 with a new pipeline. Do you support the 2018 agreement?
- A1c. For the reasons stated in response A1(a) above, DOE does not have a position concerning the 2018 agreement.
- Q2. What is DOE doing to prevent the use of renewable energy technologies and raw materials that were imported from China and mined, produced, or manufactured with forced labor?
- A2. While DOE does not have any regulatory authority to prevent imports, we are assisting the interagency in the Forced Labor Enforcement Task Force and will continue to work with the Department of Homeland Security and others to implement the Uyghur Forced Labor Prevention Act, and other laws prohibiting the importation of goods produced with forced labor. We also continue, through research, development, demonstration and

deployment activities, to support development of the domestic industry that will reduce the need for imported materials.

Q3. What is DOE doing to prevent the use of renewable energy technologies and raw materials that were imported from China and mined, produced, or manufactured in a manner that would violate U.S. environmental laws and regulations? How do you prevent the offshoring of emissions and verify the lifecycle environmental impacts of renewable projects with imported components?

A3. DOE does not have authority to regulate imports; however, DOE is committed to proactively revitalizing domestic clean energy manufacturing and making these critical technologies and raw materials in America. In February, DOE released the first-ever industrial strategy to strengthen our clean energy supply chains, *America's Strategy to Strengthen the Supply Chain for a Robust Clean Energy Transition*.

Through implementation of the Bipartisan Infrastructure Law, DOE is making progress on addressing vulnerabilities and is taking significant steps to further secure U.S. energy supply chains. DOE recently released two Notices of Intent totaling \$6 billion in battery funding that will allow companies to expand and build new American factories with quality job opportunities in regions throughout the country. DOE released a Request for Information for the \$140 million allocated from the Bipartisan Infrastructure Law for a first-of-a-kind facility that will accelerate U.S.-made rare earth elements processing technologies that will boost domestic manufacturing of rare earth metals crucial for clean energy and national defense industries.

Q4. Under procedures established through Executive Order, DOE may authorize exports of electricity and issue Presidential Permits for the construction, operation, and maintenance of electric transmission facilities.

Q4a. Is DOE required to treat electric transmission lines the same as pipelines with respect to the environmental analysis and lifecycle GHG analysis?

A4a. Consistent with longstanding CEQ and Federal agency experience and practice, DOE engages in context-specific NEPA analysis to identify the reasonably foreseeable effects of proposed actions. The pipeline reviews by FERC and the Department of State have different requirements than DOE's review of electric transmission lines, and DOE is not required to follow the same evaluation criteria or procedures as those agencies.

Q4b. Does DOE evaluate the impact of the transmission line on reliability and cost to American consumers?

A4b. Yes. In determining whether issuance of a Presidential permit is consistent with the public interest, DOE reviews the project's impact on reliability to the United States electric grid. This is done through an assessment of system impact studies and other analyses conducted by, for example, the project proponent and the relevant regional Reliability Coordinator or Regional Transmission Organization. Additionally, DOE expects owners and operators of border facilities to provide access across the border in accordance with the principles of comparable open access and non-discrimination contained in the Federal Power Act and articulated in the Federal Energy Regulatory Commission's Order No. 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities, as amended.

Q5. Did DOE conduct an analysis on the negative impact of the Federal oil and gas leasing moratorium on U.S. energy security and gasoline prices? If so, please share the analysis.

A5. DOE did not prepare such an analysis.

Q5a. Will the Federal leasing moratorium and the Administration's proposals to raise the cost of energy production on public and private lands contribute to further gasoline price increases?

A5a. Gasoline prices are influenced by many factors, with the cost of crude oil being the major component of prices. Crude oil prices have many drivers, including physical market factors as well as those related to trading and financial markets.

Since the time of the hearing, one of the more significant drivers increasing the cost of crude oil and in turn, gasoline, is the Russian invasion into Ukraine on February 24. The invasion, and the subsequent escalation of armed conflict, which had been preceded by increasing tensions in earlier weeks, has had a drastic impact on global markets and crude oil prices. On February 28, the front-month Brent crude oil price settled at over \$100/b for the first time since September 2014 and with the United States (U.S.) and others signaling that they will be eliminating or reducing their purchases of Russian fuel

supplies, further increases of global prices of crude oil and subsequently, gasoline, have ensued.

Q6. I am concerned the Biden Administration's anti-fossil fuel regulatory proposals are contributing to the energy crisis that Americans are facing today. Given DOE's responsibility to inform policies that could affect energy supply and prices, I expect you to be familiar with EPA's recently proposed methane regulations targeting the oil and gas industry. Additional methane regulations are unnecessary because they are duplicative of Federal and State regulations under the Clean Air Act, and because EPA already determined that new methane regulations will establish no additional health protections, and are, thus, unnecessary.

Do EPA air regulations have the potential to impact energy supply and prices?

A6. The Department of Energy (DOE) does not have statutory authority under the Clean Air Act. However, E.O. 12866 requires federal agencies that author significant regulatory actions to assess the costs and benefits as defined by E.O. 12866. The Environmental Protection Agency (EPA), which has the statutory authority to promulgate Clean Air Act regulations, is responsible for developing regulatory impact assessments to meet the requirements of E.O. 12866 for significant regulatory actions under the Clean Air Act.

Q6a. Was DOE consulted to evaluate the impact of new methane regulations on domestic energy production and gasoline prices? If so, what was the finding? If not, do you believe DOE should have been consulted?

A6b. The Department participated in the standard interagency review process for several proposed methane rules and regulations that is used for all new significant regulatory actions. This included reviewing both technical support documents and regulatory impact analyses.

As an independent statistical and analytical branch of the U.S. DOE, the Energy Information Administration (EIA) provides outlooks and assessments on a variety of energy-related topics, including energy production and gasoline prices. The Short-Term Energy Outlook (STEO) provides a monthly forecast on production, commodity prices, and carbon dioxide (CO₂) emissions that includes key economic and regulatory factors through the next calendar year. The [Annual Energy Outlook](#) (AEO), supported by the [National Energy Modeling System](#) (NEMS), provides projections and analysis of U.S.

energy supply, demand, and prices through 2050 based on a number of different scenarios. We note, however, that as the Federal oil and gas leasing moratorium was not in effect at the time of the most recent AEO, its potential impacts on supply and demand were not considered.

Additionally, the U.S. Environmental Protection Agency (EPA) carried out a regulatory impact analysis of its proposed methane regulations.

Q7. Do you agree that the Nord Stream 2 pipeline strengthens Russia and decreases Europe's overall energy security?

A7. We support the recent decision by European authorities to cancel the Nord Stream 2 natural gas pipeline, which would have maintained Europe's reliance on Russian natural gas while further enabling Russia to threaten Ukraine's economic, energy, and national security. The Biden Administration has consistently opposed Nord Stream 2 and encouraged our European partners and allies to diversify their energy supplies by country of origin, path of delivery, and fuel type, including renewable energy. As we look forward, Europe must strengthen its energy security while advancing its energy transition policies. Among other things, that means reducing the Continent's reliance on Russian energy imports. The European Commission has set ambitious targets in this respect, and we will do everything we can to help Europe achieve those goals.

Q7a. Do you agree with the 2019 NETL Report that showed U.S. LNG exports are 41% cleaner than Russian natural gas delivered to Europe? Has DOE conducted a more recent analysis?

A7a. The National Energy Technology Laboratory's (NETL) 2019 Update to the 2014 Life Cycle Analysis Greenhouse Gas Report was based on the most current available science, methodology, and data from the U.S. natural gas system at the time. NETL notes within the report that due to the wide range of scenario variability and uncertainty, expected values for the various scenarios considered in the report should not be interpreted as the most likely value, but should be interpreted as general guidance to provide perspective on trends. The 2019 Update is the most recent lifecycle analysis of liquefied natural gas (LNG) exports that DOE/NETL has completed.

Q7b. Do you agree that U.S. LNG exports contribute to global lifecycle GHG emissions reductions by replacing more carbon intensive sources of fuel?

A7b. NETL's Update to the Lifecycle Greenhouse Gas Report concluded that the use of U.S. LNG exports for power production in European and Asian markets will not increase global greenhouse gas (GHG) emissions when compared to regional coal extraction and consumption for power production. However, it is not clear that all U.S. LNG exports displace regional coal extraction and consumption for power production. Under some circumstances, U.S. LNG exports could contribute to increased global lifecycle GHG emissions, especially if the LNG exports allow for incremental energy consumption as opposed to displacing existing fossil fuel supply.

Q7c. Will you commit to incorporating the benefits of U.S. LNG exports to global GHG emissions reductions when reviewing LNG export authorizations?

A7c. DOE considers a range of relevant factors when evaluating applications for LNG exports to non-free trade agreement countries, including GHG emissions and other environmental impacts. NETL's studies on the lifecycle analysis of U.S. LNG exports and the impacts of unconventional production continue to be analytic tools relied upon in DOE's reviews of LNG export applications.

Q8. In January, DOE initiated the biggest staffing expansion since the agency was established in 1977, with the announcement to hire 1,000 workers for a newly developed program called the Clean Energy Corps. The Clean Energy Corps appears to mirror the Green New Deal's proposed Civilian Climate Corps.

Q8a. Please describe the legal authority for DOE to establish this new office.

A8a. This is not a new office, but rather is being used to fill identified hiring needs within existing offices tasked with Congressionally-mandated Bipartisan Infrastructure Law (BIL) implementation. In order to fill the number of positions necessary to support the implementation of the historic BIL provisions, the Department of Energy has created a centralized hiring process under a unified branding—the Clean Energy Corps. The Clean Energy Corps is agency-branding to recruit and retain specialized clean energy and other professionals at the Department. More information on the Clean Energy Corps can be found at www.energy.gov/CleanEnergyCorps.

Q8b. What is the estimated budget of the Clean Energy Corps and how will this new office derive its funding?

A8b. As noted above, the Clean Energy Corps is not a newly created office, and is supporting programs already funded by Congress. DOE is hiring talented, diverse, clean energy professionals into roles funded by the program direction allocation of 3% of funds in the BIL through a central hiring process and central branding.

Q8c. How many full-time equivalent employees will be required for the Clean Energy Corps?

A8c. The Department of Energy has identified close to 1,000 new positions that are expected requirements to successfully implement the investments of the BIL. These FTEs will be hired under Clean Energy Corps branding into existing program offices.

Q8d. Will new employees of the Clean Energy Corps be hired as career DOE employees or contractors?

A8d. Hires made under the Clean Energy Corps branding will be career DOE employees.

Q8e. What number of Clean Energy Corps employees are preexisting DOE employees or contractors?

A8e. As the hiring process is ongoing and positions are open to all DOE employees and the public, it is premature to speculate how many of these positions will be filled for BIL related activities by existing DOE employees or contractors. As noted on www.energy.gov/CleanEnergyCorps, "DOE's Clean Energy Corps is comprised of the staff from more than a dozen offices across DOE —current staff and new hires —all working together to research, develop, demonstrate, and deploy solutions to the world's greatest challenge. The Clean Energy Corps is a diverse group of talented individuals committed to public service and with a mission of supercharging the clean energy revolution." This includes staff in the applied programs of the Under Secretary for Science and Innovation and the programs under the Under Secretary for Infrastructure.

Q9. During your testimony, you made several references to cybersecurity risks at refineries. What is DOE doing, and with which industry organizations is DOE working, to address these concerns?

A9. The Department of Energy (DOE) is the Sector Risk Management Agency (SRMA) responsible for the Energy Sector. In this role, DOE works closely with the entire U.S. energy sector to prepare for and respond to risks and threats to energy infrastructure, including pipelines.

As the energy sector SRMA, DOE co-chairs the Energy Government Coordination Council (EGCC) with the Department of Homeland Security (DHS). The EGCC is the government counterpart to the industry's Oil and Natural Gas Subsector Coordinating Council (ONG SCC). The ONG SCC includes representatives from all segments of the oil and natural gas supply chain, including refineries. DOE's products and tools (threat briefings, cyber tools and technologies, training, etc.) are generally applicable to all segments of the energy sector.

QUESTIONS FROM THE HONORABLE MICHAEL BURGESS, M.D. (R-TX)

Q1. The biggest threat to pipeline system reliability is not the lack of another federal regulator in the already heavily regulated pipeline industry. Instead, the primary challenge is that permitting-related obstacles have prevented the expansion of pipeline infrastructure where it's needed.

Q1a. Do you believe the expansion of America's natural gas infrastructure over the past decade has made our energy system more reliable?

A1a. According to a 2014 study by the Massachusetts Institute of Technology [MIT](#), it was determined that the U.S. natural gas infrastructure network has "few single points of failure that can lead to a system-wide propagating failure". The reasoning for the resiliency of the natural gas infrastructure lies within the large number of both producing and drilled but uncompleted wells (DUCs), a nationwide storage footprint, robust engineering of pipelines to handle elevated in-line pressures (even if half of the nation's compressors were to fail), and the ability of the network to run without supervision or power.

U.S. natural gas interstate pipeline capacity additions have averaged about 11 billion cubic feet per day per year since 2015, according to the EIA.^[1] The expansion of natural gas pipeline infrastructure has increased the ability of the producers in key regions to access more markets, and that has improved the reliability of the market to provide consumers with natural gas. In a few areas however, such as the Northeast and the Northwest, pipeline constraints can lead to higher natural gas prices than in other areas of the country. Rather than build new natural gas pipeline capacity, the Biden administration prioritizes reducing natural gas consumption through increased energy efficiency and electrification of building space and water heating, consistent with the administration's climate and equity goals.

^[1] [Natural gas interstate pipeline capacity additions decrease in 2021 - Today in Energy - U.S. Energy Information Administration \(EIA\)](#)

QUESTIONS FROM THE HONORABLE KELLY ARMSTRONG (R-ND)

- Q1. The Department's Fiscal Year 2022 budget zeroes out the Unconventional Fossil Energy Technologies budget line. While the Department is seeking to eliminate future funding for this program, will you commit to the Department funding key unconventional energy projects that have already been awarded and are underway in North Dakota?
- A1. The unconventional energy projects in North Dakota are multi-year projects that, once awarded, are legally binding. The FY 2022 Omnibus Bill provides funds for unconventional test sites that allow the Department to continue to honor its commitments for these projects.
- Q2. Through the Energy and Environmental Research Center in Grand Forks, North Dakota is integrally involved in the Department's Regional Carbon Sequestration Partnerships. With over 120 public and private sector stakeholders, the Plains CO2 Reduction Partnership is laying the groundwork for permanent, safe, and practical underground storage of carbon dioxide from industrial facilities in the region.
- Q2a. Will the Department honor the commitment to provide continued funding to regional partnerships, including the Plains CO2 partnership?
- A2a. DOE's Office of Fossil Energy and Carbon Management (FECM) had supported the Regional Carbon Sequestration Partnerships for over twenty years. Their efforts have been instrumental in developing the technical capacity and providing assistance in the U.S. for the commercial deployment of carbon capture and storage (CCS). Many of the same organizations in the Partnerships are now supported through the Regional Initiatives and continue to support developers of commercial storage facilities with technical assistance, regulatory strategies, and public engagement. DOE is committed to supporting the Regional Initiatives with the additional appropriations provided in FY 2022 to provide technical assistance to CCS project developers.
- Q3. In addition to working on carbon sequestration, the EERC has assembled a key test center for Solid Oxide Fuel Cells for the Department of Energy. It is anticipated, through a previously approved proposal, that this center will receive \$2 million in Fiscal Year 2022 to continue to support research efforts.
- Q3a. Will the Department commit to honoring the Solid Oxide Fuel Cell test center and other previously approved proposals?

A3a. DOE has paid \$2,250,000 so far and has yet to obligate the remaining \$1,750,000 in incremental funding for the Solid Oxide Fuel Cell (SOFC) Test Center. DOE's FECM has also supported Energy and Environmental Research Center through competitive awards. Presently, support continues under the SOFC project "Coal Syngas Cleanup for Commercially Viable SOFC Performance", which continues through FY 2023.