

Testimony of Jennifer Granholm
Secretary
U.S. Department of Energy
Before the Committee on Oversight and Accountability
U.S. House of Representatives
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Introduction

Thank you, Chairman Comer, Ranking Member Raskin, and Members of the Committee. It is an honor to represent the Department of Energy (DOE)'s activities before the House of Representatives. My testimony will discuss at a high level the topics of interest identified by Committee staff.

Update to the Analysis supporting Liquefied Natural Gas (LNG) Export Decisions

Under Section 3 of the Natural Gas Act, DOE is required to review and approve or deny applications for the import or export of natural gas, including liquefied natural gas (LNG), to or from a foreign country, based on whether they are “consistent with the public interest.”

The first LNG exports from the lower-48 United States began in 2016. Just seven years later, in 2023, the U.S. became the top global exporter of LNG. Following the Russian invasion of Ukraine, the U.S. is now the top supplier of LNG to Europe. Last year, U.S. LNG exports reached a new high – averaging nearly 12 billion cubic feet per day (Bcf/d), and they are expected to increase to over 14 Bcf/d next year as new projects come online.¹ By the time all authorized projects currently under construction are complete later this decade, our export capacity is set to reach over 26 Bcf/d, more than double our current level of exports. The United States will have more LNG export capacity than any other country by more than 40%, even taking into account announced capacity additions in other countries. Beyond all this capacity, operating and under construction, we have over 20 Bcf/d of additional, already-approved exports waiting for private sector investment. Altogether, DOE has authorized exports of over 48 Bcf/d to countries that do not have a free trade agreement (FTA) requiring national treatment for trade in natural gas – four times our current LNG export levels, and nearly twice the anticipated export volumes at the end of this decade. This level of authorized exports to non-FTA countries represents approximately 45% of our current domestic natural gas production levels.

With that context in mind, DOE needs to refresh evaluations of the impacts of authorizing further exports to understand how additional authorized exports could impact our economy, workers, communities, domestic consumers and manufacturers, international partners, and the environment. To that end, on Friday, January 26th, DOE announced that we are undertaking a review of our analyses that underpin public interest determinations of applications to export

¹ U.S. Energy Info. Admin., Short-Term Energy Outlook Data Browser (May 7, 2024), <https://www.eia.gov/outlooks/steo/data/browser/#/?v=15&f=A&s=0&maptype=0&ctype=linechart>

LNG to non-FTA countries. While the update to our analyses is being completed, DOE will defer making determinations on all pending non-FTA LNG export applications. Also, during this period while the update is being completed, several types of applications will still be reviewed and processed, including applications to export to countries with which there is a free trade agreement in effect requiring national treatment with respect to natural gas (which are automatically deemed in the public interest pursuant to the statutory language of the Natural Gas Act) as well as applications submitted under DOE's small scale rule² and applications to amend the date to commence exports for current authorization holders.³ DOE's update to our analyses has no impact on any current volumes of exports, any export facilities operating today, any facilities under construction, or any previously approved exports awaiting private investments.

This effort is similar to prior analytic updates in that DOE will evaluate the economic and environmental impacts of U.S. LNG exports. But one key difference is that when past analytic updates were undertaken, the reality of U.S. LNG exports was speculative or nascent. Now, after several years of a burgeoning U.S. natural gas export sector, there exists extensive data and many key global events and trends to acknowledge and incorporate. As mentioned earlier, U.S. LNG is playing a pivotal role in safeguarding global energy security. We have also seen periods during which U.S. LNG exports had a noticeable influence on domestic prices, especially when demand outpaced supply following the post-COVID economic recovery. And we are seeing how LNG exports affect local communities in both positive and negative ways. Finally, we have learned a lot more about greenhouse gas emissions from the natural gas supply chain and what actions can and should be taken in order to mitigate them.

The update to our studies is a key step so that DOE can avoid reliance on stale data and analyses in our review of non-FTA applications under NGA section 3(a). We are working as quickly as we can to complete this work in a conscientious and defensible manner, and are planning for a 60-day comment period as part of the process. Together with the public comment process, we estimate that the update will be completed by the end of the first quarter of 2025.

DOE is proud of its strong record of relying on well-supported and up-to-date analyses to evaluate and make decisions on non-FTA export applications. The update ensures that DOE relies on the most up-to-date and robust data and analyses, which has broad benefits for U.S. consumers, and the applicants for non-FTA export authorizations themselves.

Critical Minerals

DOE is taking critical steps to advance technologies and approaches to ensure secure domestic critical minerals and materials (CMM) supply chains.

The U.S. Geological Survey (USGS) has identified 50 critical minerals for multiple economic

² Under DOE's regulations, "[s]mall-scale natural gas exports are deemed consistent with the public interest under section 3(a) of the [NGA]." 10 C.F.R. § 590.208(a).

³ Dep't of Energy, The Temporary Pause on Review of Pending Applications to Export Liquefied Natural Gas (Feb. 23, 2024), <https://www.energy.gov/fecm/articles/temporary-pause-review-pending-applications-export-liquefied-natural-gas>.

sectors.⁴ Critical minerals are defined in the Energy Act of 2020 as “any mineral, element, substance, or material designated as critical by the Secretary [of the Interior].”⁵ Under the Act, critical minerals are essential to U.S. economic or national security; vulnerable to supply chain disruptions; and serve an essential function in the manufacturing of a product, the absence of which would have significant consequences for the economic or national security of the United States.⁶ For 31 of these critical minerals, the U.S. relies on other countries for more than 50 percent of our requirements, and we rely entirely on foreign sources for more than a dozen of these minerals.⁷ Our current reliance on foreign sources for critical minerals is made more challenging as the world transitions to a clean energy and industrial economy, while at the same time understanding the growing awareness of labor abuses in these global supply chains as the demand for critical minerals increases.

In response to these challenges, President Biden signed Executive Order 14017, *America’s Supply Chains*, on February 24, 2021, directing each Department to assess potential supply-chain risks within their jurisdiction and develop strategies to mitigate these deficiencies.⁸ In February of 2022, DOE released a report titled *America’s Strategy to Secure the Supply Chain for a Robust Clean Energy Transition*, followed by a Critical Materials Assessment in July of 2023.⁹ DOE designated our Critical Materials List based on the Energy Act of 2020 and the results of the Assessment. It includes all of the critical minerals on the 2020 USGS list and four additional critical materials that were identified based on projected future needs for energy applications: copper, electrical steel, silicon, and silicon carbide.

To meet the projected demand for CMMs, the U.S. must develop multiple sources (upstream) for critical materials. However, that alone will not be sufficient to establish resilient supply chains. A lack of processing and refining capabilities (midstream), as well as manufacturing (downstream), often poses a greater risk to supply chain robustness than the sources themselves. For example, the U.S. mines the largest amount of rare earth elements (REEs) of any country other than the People’s Republic of China (PRC), but we ship much of our REE concentrate to the PRC for future processing and refining.¹⁰ With support from the Defense Production Act (DPA) provided to the Department of Defense, the U.S. has made progress in establishing a

⁴ U.S. Geological Survey. 2022 Final List of Critical Minerals. Federal Register. February 24, 2022. Available at <https://www.federalregister.gov/documents/2022/02/24/2022-04027/2022-final-list-of-critical-minerals>

⁵ 30 U.S.C. 1606(a)(3)(A).

⁶ 30 U.S.C. 1606(c)(4)(A).

⁷ U.S. Geological Survey. Mineral Commodity Summaries 2023. Available at <https://pubs.usgs.gov/publication/mcs2023>

⁸ Executive Order on America’s Supply Chain. February 24, 2021. Available at <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/>

⁹ <https://www.energy.gov/policy/articles/americas-strategy-secure-supply-chain-robust-clean-energy-transition>; <https://www.energy.gov/sites/default/files/2023-05/2023-critical-materials-assessment.pdf>

¹⁰ Rare earth elements are 17 elements on the periodic table that play a critical role in many advanced technologies. Some REEs, but not all, are among the Department’s list of energy critical materials. <https://pubs.usgs.gov/periodicals/mcs2023/mcs2023.pdf>; <https://mpmaterials.com/articles/mp-materials-reports-second-quarter-2023-results/>

domestic rare earth element supply chain, producing separate rare earth oxides in 2023, but there is still a strong need for U.S.-based processing and refining.

The PRC maintains a dominant position in the midstream processing capabilities for several different critical materials, REEs and the critical minerals graphite and cobalt. By intervening in each stage of the supply chain for over three decades, PRC non-market policies and practices and resulting market distortions have made it very difficult for mining, manufacturing, and especially midstream processing capabilities to be built in the U.S. or other countries. Dependence on a single source for CMMs leaves the U.S. and our allies vulnerable. Therefore, we must ensure sufficient worldwide supplies of critical minerals and materials, and rare earth elements, from responsible sources to protect U.S. national security and enable a clean energy and industrial economy, including one that supports the rights of workers.

With expected demand for critical materials to increase substantially over the next three decades, no single country will be able to satisfy global demand. This situation provides both a challenge and an opportunity to diversify critical material supply chains, improve labor standards and environmental protections worldwide, and create new technologies that can be deployed domestically. For the U.S. to be globally competitive, we should lead on innovation to develop sustainable approaches to our domestic critical material supply chains across the entire innovation pipeline, increasing efficiency and circularity and creating quality jobs while driving down environmental and health impacts and costs.

Accordingly, DOE's Critical Materials Research, Development, Demonstration, and Deployment (RDD&D) program seeks to develop reliable, resilient, affordable, diverse, sustainable, and secure domestic critical mineral and material supply chains with a strategy consisting of four pillars:

- **Diversify and expand supply:** Identifying new feedstocks for CMMs, including unconventional and secondary sources such as mined coal and wastes from coal and hard rock mining and industrial processes, as well as expanding traditional sources from existing mining and international partners.
- **Develop alternatives:** Developing new materials, components and systems as replacements that can reduce or eliminate dependence on critical materials.
- **Improve material and manufacturing efficiency:** Designing mining, processing, refining, and manufacturing technologies that require less energy, water, heat, and chemical inputs; produce fewer environmental impacts; and generate little to no waste containing critical materials.
- **Build a more circular economy:** Reducing the need for new CMM supply by enabling reuse, recovery and recycling of CMMs and extending their lifetimes when in use.

These pillars are supported by enabling activities: analysis and advanced tools; market assessment and development; international engagement and standards; and education and workforce development. DOE is also working with other agency partners to enable strong international environmental protections and labor standards for CMM supply chains, robust life cycle and technoeconomic analyses, advanced modeling and machine learning capabilities, and mineral source traceability and verification capabilities. With so much work supported from

offices throughout the Department, collaboration is key. In 2023, DOE launched the Critical Materials Collaborative (CMC) to improve and increase communication and coordination among DOE, other government agencies, and stakeholders working on critical materials projects. It serves to grow and coordinate funding for the innovation ecosystem for CMM research in the United States.

DOE's CMM activities span multiple program offices. To highlight a few priority efforts here:

- **Recycling materials from spent batteries:** Recycling from end-of-life systems like electric vehicles and offshore wind turbines could eventually be able to fulfill a significant percentage of the Nation's CMM requirements. As authorized in Section 40207 of the Bipartisan Infrastructure Law, in 2022 DOE's Office of Manufacturing and Energy Supply Chains (MESC) awarded \$316 million to Ascend Elements for a facility in Hopkinsville, Kentucky that will support the extraction of critical cathode materials from spent lithium-ion batteries and enable domestic production of cathode active material (CAM). The CAM can then be used in new lithium-ion batteries. The new "Apex" facility will be the first domestic, commercial-scale, integrated metal extraction and CAM facility in the United States.
- **Developing Domestic Graphite Sources.** MESC is also supporting domestic graphite production through a \$117 million grant to Anovion to produce synthetic graphite in Bainbridge, Georgia, and a \$100 million grant to Novonix to produce synthetic graphite anode materials in Chattanooga, Tennessee. Novonix has also received a \$103 million allocation through the 48C tax credit program.
- **Advanced Mining Techniques:** Conventional mining practices use large amounts of energy and water and produce substantial greenhouse gas emissions. In addition, the success rate for finding new mines is low, often taking a decade or more and hundreds of millions of dollars to identify and prove a resource. Innovative approaches would help extract resources in a responsible and environmentally sustainable manner. DOE is investing in "surgical" technology approaches to extract minerals from ever-deeper sources, minimize surface and environmental impacts, and improve public confidence in responsible mining techniques. In addition, just last month, DOE's Loan Programs Office issued a public blog post affirming that it is open to applications that would support domestic mining of critical minerals, consistent with Congressional intent.¹¹
- **Critical Materials Supply Chain Research Facility:** As authorized in Section 41003 of the Bipartisan Infrastructure Law, DOE's Office of Fossil Energy and Carbon Management has selected the National Energy Technologies Laboratory (NETL) of Pittsburgh, PA, Morgantown, WV, and Albany, OR, for a \$75 million award to lead the Minerals to Materials Supply Chain Facility (METALLIC) project, which includes participation from eight other DOE national laboratories. METALLIC is supporting critical minerals and materials research, development, demonstration, and deployment by providing rapid validation optimization and commercialization of critical minerals and

¹¹ <https://www.energy.gov/lpo/articles/how-lpo-can-support-all-stages-critical-minerals-supply-chain>

materials production and utilization technologies. This builds on decades of investment in DOE's national laboratories by DOE's Office of Science and CMI Hub.

- **The Critical Materials Innovation Hub (CMI Hub)**, managed through the Advanced Materials and Manufacturing Technologies Office (AMMTO) is led by Ames National Laboratory and involves several other labs, universities, and private industry. By bringing together scientists and engineers from diverse disciplines, the CMI Hub is addressing challenges in critical materials, including mineral processing, manufacture, substitution, efficient use, and circular economy; integrating scientific research, engineering innovation, manufacturing and process improvements; and developing a holistic solution to the materials challenges facing the nation.

In the meantime, domestic sources are not sufficient in the near-term to satisfy the Nation's CMM needs. U.S. collaboration with other countries could expand the sources and quantities of responsible supplies of critical materials. As part of this process, it is important to build capabilities for tracing and verifying the mineral origin for advanced batteries, magnets, and other manufactured products. Currently, countries such as the PRC that hold monopolies on the midstream and downstream processing of these CMMs are investing heavily internationally to ensure a diverse feedstock that will feed their supply chains for years to come. To this end, the Department is proactively engaging with our international partners to promote secure and diversified supplies, market transparency, and responsible practices across the supply chain.

DOE appreciates the bipartisan support in Congress for CMM research, development, demonstration and deployment, and we look forward to continuing our work with the appropriate committees on additional critical materials policy going forward.

Energy Conservation Standards

General Information

Energy conservation standards are one of the federal government's most important tools to save energy in homes and businesses nation-wide. The Energy Policy and Conservation Act (EPCA), signed into law in 1975, established a federal program consisting of test procedures, labeling, and energy targets for consumer products and equipment. Since the program's inception, the cumulative utility bill savings to consumers resulting from appliance standards are estimated to be more than \$1 trillion by 2020 and more than \$2 trillion by 2030.¹² As consumers replace their appliances with newer models that comply with the standards adopted, households can expect to save over \$529 annually by 2030. These standards are intended to increase the nation's energy security while protecting the environment and lowering consumer costs over the long term. Improvements in energy efficiency can be made today to yield significant near-term and long-term economic and environmental benefits for the nation.

In addition, DOE's energy conservation standards provide certainty and uniformity for industry.

¹² U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, "Saving Energy and Money with Appliance and Equipment Standards in the United States," (updated Jan. 2017), available at <https://www.energy.gov/eere/buildings/articles/appliance-and-equipment-standards-fact-sheet>.

Our test procedures ensure all covered products sold in the United States are evaluated against the same methods and criteria, so that consumers and industry can compare competing models and make informed purchasing decisions based on energy efficiency. National test procedures and energy standards preempt a patchwork of product efficiency regulations across the United States, ensuring manufacturers do not have to develop and market separate types of products to sell in various states, and reduce compliance costs.

Process for issuing energy conservation standards

EPCA requires DOE to review at least once every six years the existing standards for covered products and determine, based on an analysis of statutory criteria, whether to amend the existing standard or to determine that the standards do not need to be amended. Under EPCA, DOE may not prescribe a standard if DOE determines by rule the standard is not technologically feasible or not economically justified or does not result in significant conservation of energy.¹³ In deciding whether a proposed standard is economically justified, DOE must determine whether the benefits of the standard exceed its burdens.¹⁴ DOE must make this determination after receiving comments on the proposed standard, and by considering, to the greatest extent practicable, the following seven statutory factors:

1. The economic impact of the standard on the manufacturers and on the consumers of the products subject to such standard;
2. The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered products which are likely to result from the imposition of the standard;
3. The total projected amount of energy (or as applicable, water) savings likely to result directly from the imposition of the standard;
4. Any lessening of the utility or the performance of the covered products likely to result from the imposition of the standard;
5. The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard;
6. The need for national energy and water conservation; and
7. Other factors the Secretary [of Energy] considers relevant.

The Department evaluates these factors qualitatively and quantitatively and presents its analysis in the proposed and final rules themselves, along with any other notices the Department publishes in the rulemaking process, such as requests for information (RFIs), preliminary analyses, and notices of data availability (NODAs). The Department uses comments and data received from stakeholders to inform its findings with regards to these seven factors during both the process of developing the proposed rule, and when receiving and analyzing comments on a proposed rule in making any final decisions about the standard.

The effectiveness of this process was apparent earlier this year, when DOE finalized energy conservation standards for distribution transformers. DOE proposed new standards for three

¹³ 42 U.S.C. 6295(o)(3)(B).

¹⁴ 42 U.S.C. 6295(o)(2)(B)(i).

categories of distribution transformers in January of 2023. After extensive feedback from stakeholders, including electrical utilities and domestic manufacturers, DOE finalized a rule that ensures continued growth for domestic steel production, provides a longer compliance timeframe of five years, and increases the resiliency and efficiency of America's power grid. The energy savings over 30 years of shipments is 4.6 quadrillion btus (quads), which presents a savings of 10% relative to the energy use of products currently on the market. Over 30 years, the new standards are expected to save Americans over \$14 billion in energy costs, while also reducing nearly 85 million metric tons of dangerous carbon dioxide emissions—equivalent to the combined annual emissions of nearly 11 million homes. The final rule maintains the supply chain labor workforce and sends a signal to increase domestic production of e-steel, the material used to build distribution transformers.

DOE's energy conservation standards apply to products manufactured (or imported) after a period of time once a final rule is published in the Federal Register. Any DOE conservation standard under these provisions cannot and will not apply retroactively to products already purchased by the consumer.

Where possible, the Department adopts new or amended standards based on the receipt of a private consensus agreement or by entering into a negotiated rulemaking with a group of representative stakeholders. In 2007, Congress recognized the importance of consensus or negotiated standards, amending EPCA to allow for an expedited rulemaking process in the event a representative group of stakeholders could reach agreement.

Accordingly, in September of 2023, industry and energy efficiency advocates jointly announced a consensus proposal to the Department with recommended energy standards and associated compliance dates for six home appliances that DOE is required to regulate under EPCA: Clothes dryers, Clothes washers, Dishwashers, Cooktops, Refrigerators (residential), and Wine chillers. DOE has since finalized energy conservation standards for all of these product categories in alignment with the private consensus agreement.

Note that sometimes the Department evaluates a product and determines the evidence does not support more stringent energy standards because new standards are not technologically feasible, economically justified, or would not result in significant energy savings. In these instances, after receiving public comment, the Department will proceed through a final determination that simply states a more stringent standard is not justified at that time.

The standards rulemaking proceedings are transparent. Proceedings are recorded at the Federal eRulemaking Portal at www.regulations.gov with a separate docket for each rulemaking. DOE hosts public meetings and webinars for its standards rulemakings, and comments received are posted to the docket. The formal rulemaking documents are published in the Federal Register and timely posted on the Department's website. In these materials, the Department includes detailed discussion on its methodology, how the projected energy and cost savings associated with various policy scenarios were determined, and how those figures support the overall technical feasibility and economic justification for a proposed standard. Such rulemaking documents include analysis on projected impacts, including on consumers, the nation, manufacturers, greenhouse gas emissions, employment, and small businesses.

Commercial Nuclear Energy

The United States is home to 94 operating nuclear power reactors across 54 facilities in 28 states. They are responsible for generating about 20% of the electricity on the U.S. power grid. The existing nuclear fleet has a remarkable safety and performance record and represents our largest zero-emission energy source. Nuclear energy remains one of the safest and most reliable generation sources. Our newest reactor is the Plant Vogtle Unit 4 in Georgia, which entered commercial operation in April 2024. The Department supported the construction of Plant Vogtle with a series of loan guarantees through its Loan Programs Office. The average age of U.S. commercial nuclear power reactors is about 42 years, and Plant Vogtle is the first new nuclear power plant to be licensed and begin construction in the U.S. in more than 30 years.

Nuclear energy provides emissions-free, firm power necessary to fundamentally underpin the transition to a carbon-free energy electric grid by 2035. To swiftly reduce our carbon emissions and rebuild U.S. leadership globally, the Biden-Harris Administration is prioritizing activities that keep the existing fleet of nuclear power plants in operation, deploy advanced reactor technologies, secure and sustain the nuclear fuel cycle, strengthen nuclear safety, security, and safeguards, and expand international nuclear energy cooperation and nonproliferation.

To this end, in 2021, President Biden signed the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law, which included \$6 billion for the Civil Nuclear Credit (CNC) program. Under this DOE-led program, owners or operators of commercially operating U.S. reactors that are at risk of closure for economic reasons could apply to bid on credits to support their continued operations and credits would be allocated until September 30, 2031. The Consolidated Appropriations Act of 2024 repurposed the CNC program funding for nuclear fleet support programs across DOE. As a result, the CNC Program will not initiate an award cycle in 2024. In addition, the Inflation Reduction Act (IRA) of 2022 introduced historic clean energy prevailing wage tax credits, including the section 45U zero-emission nuclear power production tax credit, which will support the continued operation of our 94 nuclear reactors through this decade.

The Administration has also taken several actions to secure our civil nuclear supply chain and continues to lead on the international stage to ensure our allies and partners are no longer dependent on our adversaries.

The Russian Federation's brutal invasion of Ukraine has demonstrated the grave threat to global energy security posed by dependence on Russian-supplied fuels. Russia, the largest global enricher of uranium, currently supplies a significant portion of the nuclear fuel supply chain to the United States and our international allies and partners. Conversion and enrichment services from trusted sources are insufficient to replace current U.S. imports from Russia. Without expansion of the fuel cycle capacity of domestic entities and international allies and partners, the United States cannot reliably make sufficient low enriched uranium (LEU) or high-assay LEU (HALEU) available to support the needs of today's power reactor fleet, advanced reactors, future needs for research reactors, and medical isotope production facilities. This strategic vulnerability is unsustainable.

To decouple U.S. dependence on Russian enriched uranium, in October 2023 President Biden requested supplemental funding to improve our long-term domestic enrichment capabilities. Following this request, on March 8th, Congress appropriated \$2.72 billion to expand the domestic uranium enrichment and conversion capacity using a revolving fund. On April 30th, the Senate passed H.R. 1042, the *Prohibiting Russian Uranium Imports Act*, and President Biden signed it into law on May 13. The Act prohibits imports of unirradiated low enriched uranium from the Russian Federation or from a Russian entity and unlocks the \$2.72 billion for domestic nuclear fuel production.

The Secretary of Energy may grant a waiver to this prohibition for specific imports if it is determined it is the national interest or that there is no alternative viable source of low-enriched uranium available to sustain the continued operation of a nuclear reactor or U.S. nuclear energy company. The Department will soon issue a process for requesting waivers to the prohibition. Any waiver granted must terminate by January 1, 2028.

There is no quick, easy path to reduce our dependence on Russian-supplied nuclear fuels. Expanding our domestic fuel capacity will require strategic investments coupled with import restrictions that protect those investments well into the future. DOE will act swiftly to support domestic enrichment capabilities and prepare our industry for this transition, and we appreciate Congress' help in addressing this national security vulnerability.

Strategic Petroleum Reserve (SPR)

The SPR is the world's largest supply of emergency crude oil, with a long history of protecting the economy and American livelihoods in times of energy supply disruptions.

The Administration remains committed to maintaining a robust and well-functioning SPR. In 2022, in response to Russia's invasion of Ukraine and the resulting disruptions in the oil market, the President directed the sale of 180 million barrels. The emergency sales provided supply certainty and acted as a bridge until domestic production increased, which in turn helped to mitigate the cost increases for American families.

In the December 2022 budget agreement, Congress cancelled the sale of 140 million barrels from the SPR that Congress had previously mandated. As of May 7, 2024, DOE has purchased 32.3 million barrels to replenish supplies. These purchases were made at an average price of \$79 per barrel, significantly lower than the average \$95 per barrel that SPR crude was sold for in 2022. In addition, DOE has accepted or scheduled about 4 million barrels in exchange returns, which include a premium of oil above the volume delivered.

Note also that the necessary emergency sales that took place in 2022 did not damage our SPR pipelines or caverns. The Nation's top geoscientists at DOE's Sandia National Laboratory continue to closely monitor cavern integrity, and the SPR remains operationally ready to respond to future supply disruptions, should they occur. Also note that, since the SPR levels peaked in 2011, Congress has required DOE to sell over 140 million barrels so far, and DOE will be required by law to sell an additional 99.6 million barrels between now and the end of fiscal

year 2031. DOE will continue to work with Congress to ensure the SPR remains a critical national emergency response tool, protecting the economy and consumers in times of emergency oil shortages for the years to come.

Grid Reliability

U.S. electricity demand is growing. DOE’s Energy Information Administration (EIA) anticipates that projected power demand in the U.S. will rise to 4,100 TWh this year, up from a record 4,000 TWh in 2018.¹⁵ Globally, EIA projects that electricity generation will increase by 30-76% by 2050.¹⁶

Against this backdrop of increasing demand, the Department is also working to reduce the greenhouse gas impacts of the electricity sector. The goals of resource adequacy, emissions reductions, and economic growth are not mutually exclusive: In 2023, energy-related CO₂ emissions in the U.S. decreased by 3%,¹⁷ as the U.S. economy grew by 3.1% and added 2.7 million jobs.¹⁸

This is not the first time electricity demand has grown – the energy industry saw similar levels of demand growth in the 1980s, 1990s and early 2000s. Just as we met these past demand increases, we will do so again, and this time the sector has more tools than in decades past. We can deploy renewables with storage, get more out of our current grid through grid enhancing technologies and advanced conductors, and leverage innovative demand management technologies like managed charging, bidirectional chargers, demand flexibility, and virtual power plants.

We also have so many more incentives, provided by Congress through the IIJA and IRA, than 20 years ago, including tax credits, loans, technical assistance, and grants. As we work towards President Biden’s goal of 100% carbon pollution-free electricity by 2035, the Federal government must continue to invest to ensure reliability, resilience, and affordability. Our transmission and power transformers are aging— more than 30% of transmission lines need to be replaced and more than 60% of distribution lines are operating past their prime.¹⁹

To address these issues, the Administration is investing in electricity service and reliability at a scale not seen since the New Deal. DOE is deploying \$20 billion in new resources provided by the IIJA and IRA to support grid reliability.

This includes:

- \$10.5 billion in competitive grants under the Grid Resilience and Innovation Partnerships (GRIP) program, administered by the Grid Deployment Office, to enhance grid flexibility and improve the resilience of the power system; and

¹⁵ <https://www.eia.gov/outlooks/steo/>

¹⁶ <https://www.eia.gov/outlooks/ieo/narrative/index.php>

¹⁷ [https://www.eia.gov/todayinenergy/detail.php?id=61928#:~:text=Based%20on%20analysis%20in%20our,\(MMmt\)%2C%20in%202023.](https://www.eia.gov/todayinenergy/detail.php?id=61928#:~:text=Based%20on%20analysis%20in%20our,(MMmt)%2C%20in%202023.)

¹⁸ <https://www.whitehouse.gov/briefing-room/statements-releases/2024/01/25/statement-from-president-joe-biden-on-fourth-quarter-2023-gdp-report/>

¹⁹ <https://liftoff.energy.gov/innovative-grid-deployment/>

- Three new programs with incentives totaling \$5.26 billion to support the siting and development of new transmission lines.

DOE estimates that these investments will unlock over 4,000 MW of transmission capacity across the country and enable the addition of more than 35 GW of clean energy, expanding the U.S.'s current clean energy capacity by 10.5%.²⁰ And the \$20 billion figure does not include the billions of dollars of investments the Administration is making in:

- Improving energy efficiency, which helps reduce pressure on the grid 365 days a year; and
- Long-duration energy storage, which helps smooth grid operations and avoid outages wherever it is deployed.

At the same time, the United States is seeing unprecedented new clean power generation coming online. The EIA projects that the U.S. will add 62.8 GW of electricity generation capacity in 2024, 81% of which will be solar and storage. This is a significant increase from the 40 GW in total capacity added to the U.S. grid in 2023.²¹

Oversight and Waste Prevention with DOE Financial Assistance

As the Department works to deploy billions in new project funding provided by the Bipartisan Infrastructure Law and Inflation Reduction Act, it is critical for DOE to conduct stringent oversight of program design and implementation for our financial assistance and loan programs. We are taking extra steps to protect the taxpayers' investment, keep program operations running efficiently, meet goals set forth by Congress, and avoid any potential for fraud, waste, or abuse wherever possible.

The first stage of implementation is program design, and in order to take advantage of the extraordinary expertise across DOE, reduce redundancies, and learn lessons from past experiences, our infrastructure team has developed a system of intra-departmental coordination for project and program design, in which staff from across program offices review and provide feedback on programs that are in the development phase.

In addition, our program offices and Departmental leadership routinely engage with the Office of Inspector General (OIG) to mitigate risks. The OIG plays a critical oversight function in ensuring that new programs mitigate the risk of fraud, waste, and abuse. The OIG has coordinated with Department leadership to review spending plans and has recommended prospective actions that DOE and its program offices can take to best protect taxpayer dollars and program integrity. The OIG will also continue to engage in periodic performance reviews and audits while also responding to complaints and tips from DOE employees and the general public.

Beginning in January 2022, the Office of the Under Secretary for Infrastructure began engaging

²⁰ Based on sum total of projected impacts for projects supported under the Grid Deployment Office's Transmission Facilitation Program and through the Grid Resilience and Innovation Partnership (GRIP) programs.

²¹ <https://www.eia.gov/todayinenergy/detail.php?id=61424>

with the OIG to better understand how DOE could proactively improve its oversight of BIL funding. Through a series of regular meetings, the Office of the Under Secretary for Infrastructure and program officials from across the Department provided transparency to the OIG into DOE plans and activities. In exchange, the Office of the Under Secretary gained insights from the OIG on the latest scams and methods that criminals are using to defraud the government as well as common mistakes that funding recipients make. With this knowledge, DOE is better positioned to maximize the impact of BIL funding and reduce fraud, waste, and abuse.

The Department appreciates the OIG's prospective considerations for the implementation of the BIL, which came in the form of several Special Reports in 2022. While these were not the end products of traditional audits – which normally provide the Department with repeated opportunities to engage with OIG staff and review draft reports and to provide context, suggested factual corrections, and feedback, and which generally contain formal recommendations – they contain and collect helpful historical context and guidance on best practices going forward. Additionally, the U.S. Government Accountability Office (GAO) issued reports in 2021 and 2022 with recommendations on how the Department can refine its internal oversight processes with respect to larger clean energy demonstration projects. Those reports have informed both the design of our Office of Clean Energy Demonstrations and its business practices, as well as the Department's updated approach to demonstration programs.

One key recommendation from the Inspector General relates to adequate staffing to provide critical oversight of funded programs and projects. Accordingly, we have been focused on hiring sufficient staff from day one, particularly on hiring project and program oversight specialists, grant management and contracting specialists, and financial and audit oversight staff to responsibly oversee the tremendous investment Congress has made in the Department.

Closing

Thank you for the opportunity to testify, and I look forward to your questions.