

U.S. DEPARTMENT of ENERGY | Hydrocarbons and Geothermal Energy Office

STRATEGIC PLAN

2026-2036

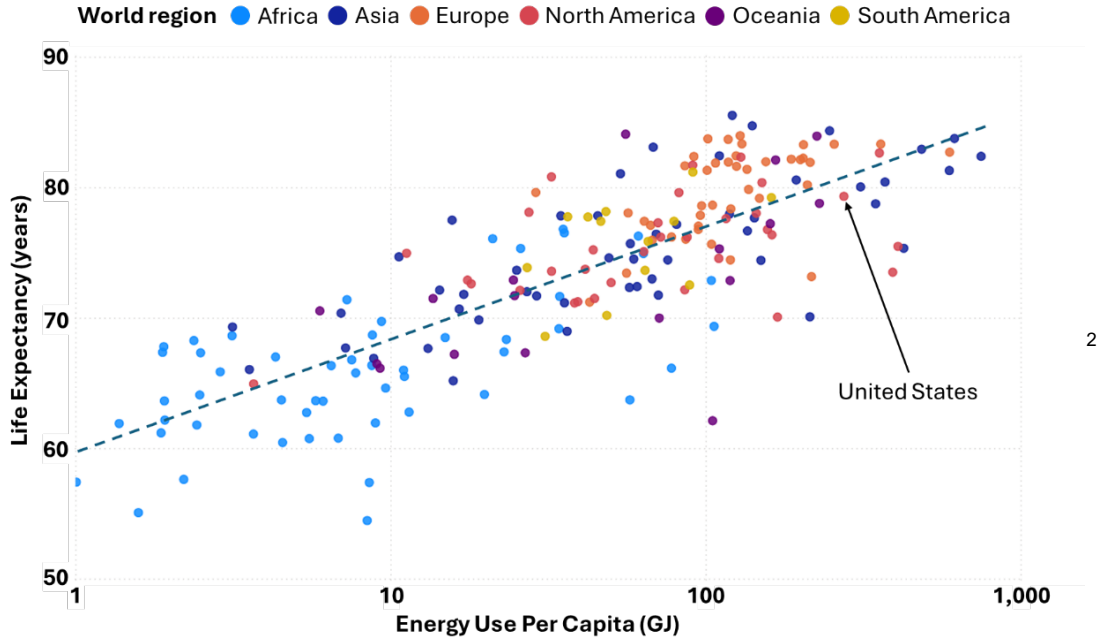
May 15, 2026

A Message from the Assistant Secretary

The energy landscape of the United States is at a pivotal juncture. We are experiencing a surge in demand for reliable, affordable, and secure energy—a demand driven by the critical needs of our national defense, the rapid expansion of manufacturing, the growth of data centers, the processing of critical minerals, and the strategic re-shoring of our industrial base. This increasing demand presents both a profound challenge and a critical opportunity for our nation.

Energy is crucial for modern life, yet many people around the world still lack reliable access to energy. Approximately two billion people in the world lack adequate, reliable, and affordable energy for lighting, cooking, heating, and other daily activities that are necessary for welfare and economic development. In many regions, low energy consumption is closely linked to lower life expectancy, as limited access to modern energy constrains overall quality of life.

Figure 1. Life Expectancy and Per Capita Energy Consumption by Country, 2023[1]



[2]

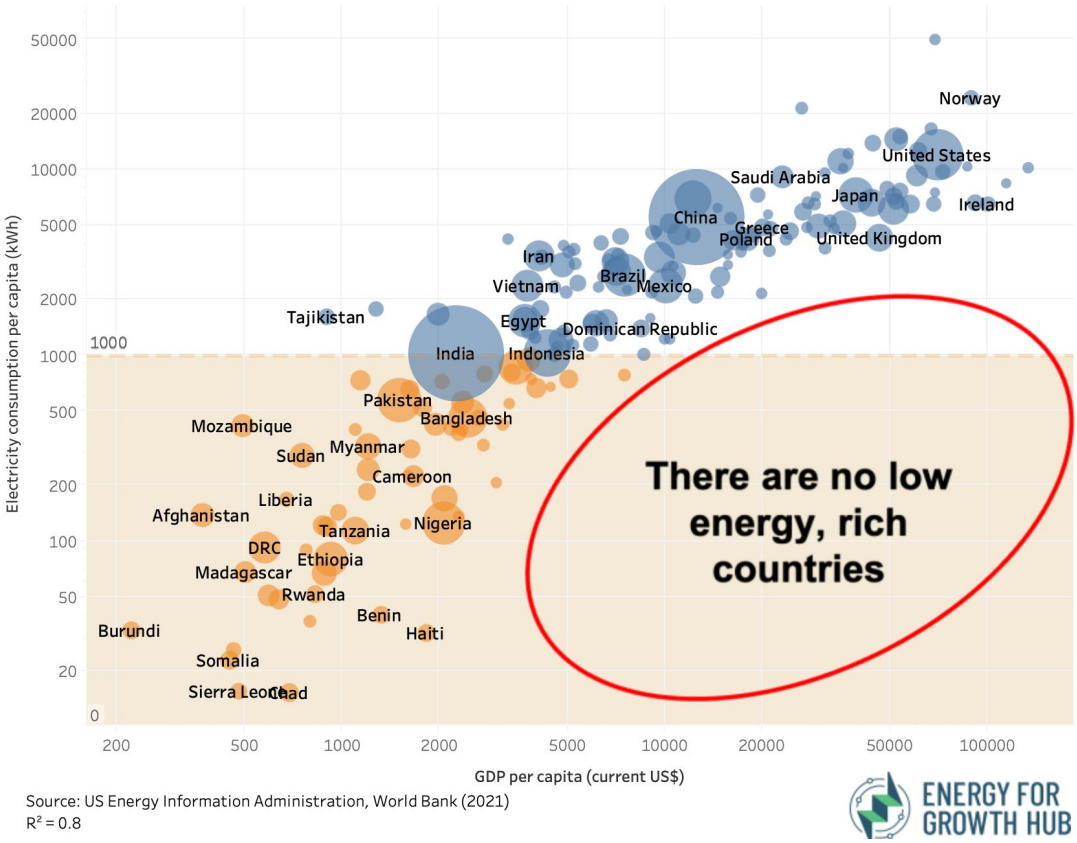
Data sources: U.S. Energy Information Administration (2025); Energy Institute - Statistical Review of World Energy (2025); U.N. Department of Economic and Social Affairs, Population Division: World Population Prospects (2024).

[1] Adapted from "Does more energy use increase life expectancy?" Institute for Global Sustainability, Oct 31, 2022, Cutler Cleveland and Xin Wang; Does more energy use increase life expectancy? - Visualizing Energy

[2] "Does more energy use increase life expectancy?" Institute for Global Sustainability, Oct 31, 2022, Cutler Cleveland and Xin Wang; Does more energy use increase life expectancy? - Visualizing Energy

Access to affordable, reliable, and secure energy is fundamental to national and economic security for every country. From an economic perspective, there are no low energy, rich countries.

Figure 2. Electricity vs Income, 2024



Over the past two decades, the American shale revolution—enabled by advances in horizontal drilling and hydraulic fracturing—has fundamentally reshaped domestic and global energy markets, transforming the United States into a global energy powerhouse. It unlocked vast domestic resources, driving record production, and establishing the United States as the world's largest producer of oil and natural gas.

Advanced techniques pioneered during the shale revolution—including horizontal drilling and hydraulic fracturing—are now being applied to geothermal power, making it possible to tap into vast subsurface heat sources and produce baseload power. As innovation accelerates, geothermal has the potential to revolutionize the American energy marketplace by providing reliable, scalable energy that strengthens grid resilience and complements gas, nuclear, and coal as cornerstones of America's power.

Through collaboration with DOE's national laboratories, industry partners, and academic institutions, HGEO is building on the legacy of the shale revolution by advancing the next generation of subsurface technologies that will strengthen United States energy leadership for

decades to come, moving breakthrough technologies from the laboratory to commercial deployment.

It is against this backdrop that the Hydrocarbons and Geothermal Energy Office (HGEO) steps forward, charged with a mission of fueling American energy dominance. Under Executive Order 14156, the U.S. Department of Energy (DOE) has been tasked with ensuring the stability and security of our energy supply. HGEO, by integrating the strengths of the former Geothermal Technologies Office and the Office of Fossil Energy and Carbon Management, as well as the Strategic Petroleum Reserve, is uniquely positioned to lead this charge, harnessing the full potential of America's hydrocarbon and geothermal resources.

This Strategic Plan represents our collective commitment to the American people. It outlines a clear, actionable roadmap designed to stabilize our energy supply and delivery, while innovating for a secure and prosperous future.

Our core values of America-first execution and scientific, economically driven decisions will guide every action. We will operate with urgency, transparency, and fiscal responsibility, ensuring that every taxpayer dollar is invested wisely to yield maximum impact. We will foster an environment of innovation, collaboration, and data-driven decision-making, leveraging the expertise of our national labs, industry partners, and our dedicated workforce.

The goals set forth in this plan are ambitious, but achievable. They represent our dedication to providing affordable, reliable, and secure energy that underpins our nation's prosperity, safeguards our freedom, and enables human flourishing. I am confident that, by working together, we will meet the challenges before us and solidify America's position as a global energy leader.

I. Introduction

The United States is witnessing a surge in energy demand, reflecting successful policies that are attracting jobs and revitalizing industry across the nation. As sectors like national defense, advanced manufacturing, artificial intelligence data centers, critical mineral processing, and domestic industrial re-shoring expand, they fuel dynamic growth in our energy supply and infrastructure. This momentum showcases America's commitment to perpetual improvement, ensuring that our energy systems evolve alongside our thriving economy and workforce.

Executive Order 14156, signed in January 2025, mandates that all relevant federal agencies, including the U.S. Department of Energy (DOE), fully leverage their statutory authorities to ensure the availability of reliable, affordable, and secure energy resources. The Hydrocarbons and Geothermal Energy Office was established to address the nation's most pressing energy challenges.

This Strategic Plan defines seven strategic goals that are supported by specific objectives. The plan serves as the strategic framework guiding HGEO efforts to deliver a robust, affordable, and secure energy future, providing the overarching vision, mission, core values, and strategic objectives that address both current energy opportunities and anticipate future needs through targeted research and development programs across the hydrocarbon and geothermal energy sectors. By executing this plan, HGEO will fortify the nation's energy resilience, support economic growth, and prepare the United States to meet the demands within an ever-evolving global energy landscape.

II. Vision, Mission, and Core Values

HGEO operates with a clear understanding of its role in securing America's energy future. Our mission statement articulates our fundamental purpose and contribution; the vision defines our aspirational future state; and our core values embody the enduring principles that guide every decision and action. These statements are the foundation upon which HGEO strategies, goals, and initiatives are built, and provide a transparent framework for our engagement with stakeholders, industry partners, and the American public.

Mission

Unleash the full potential of America's hydrocarbon and geothermal resources to provide affordable, reliable, and secure energy

Vision

An America that leads the world with affordable, reliable, and secure energy; powering prosperity, freedom, and human flourishing

Core Values

America-First Execution

We will work with a sense of urgency across offices and agencies as one team to advance President Trump's America-First energy agenda with a focus on results, not recognition.

We will eliminate and prevent fraud, waste, and abuse of taxpayer funding.

Scientific and Economically Driven Decisions

We will ground our work in science and economics, applying technology to work efficiently, partnering with industry, and leveraging national laboratory capabilities to solve challenges with commercial viability.

We will engage in healthy discussion, rooted in facts and data, to reach sound, durable decisions and deliver results for the American people.

III. Strategic Goals and Objectives

The HGEO strategic goals and objectives are crafted to address the complex energy challenges and opportunities facing the United States. Each goal is designed to provide a clear focus for our research, development, and deployment efforts and is supported by a series of specific objectives necessary for successful execution.

Goal 1. Stabilize, Optimize, and Grow the American Coal Industry

Coal plays an essential role in America's energy system, providing affordable, reliable, and secure power. Originally, it fueled the Industrial Revolution by powering factories, manufacturing steel, and producing electricity. Over 150 years, coal's uses have expanded—from being the main source of power and steel production to serving as a flexible resource for creating advanced materials and chemicals. Coal remains a globally leading fuel for electricity generation, underpinning energy security and economic growth worldwide.

Coal-fired power generation in the United States has been in long-term decline. Many older plants are being retired prematurely. DOE is investing to preserve coal plants and maintain their essential power supply. Investing in technologies that modernize and extend the operational life of current coal mines and coal-based power plants, while optimizing efficiencies throughout the value chain, will strengthen the resilience of the United States grid.

Goal 1 focuses on restoring coal as a cornerstone of United States power and its vital role in meeting both domestic and international energy needs.

Objectives

1.1 Modernize and extend the life of our existing coal mines and coal-based power fleet.

1.2 Optimize efficiencies across the extraction, capture, processing, and power generation value chain.

1.3 Support the growth of coal-based power generation, and product manufacturing.

1.4 Identify and support development opportunities for additional U.S. coal export capacity.

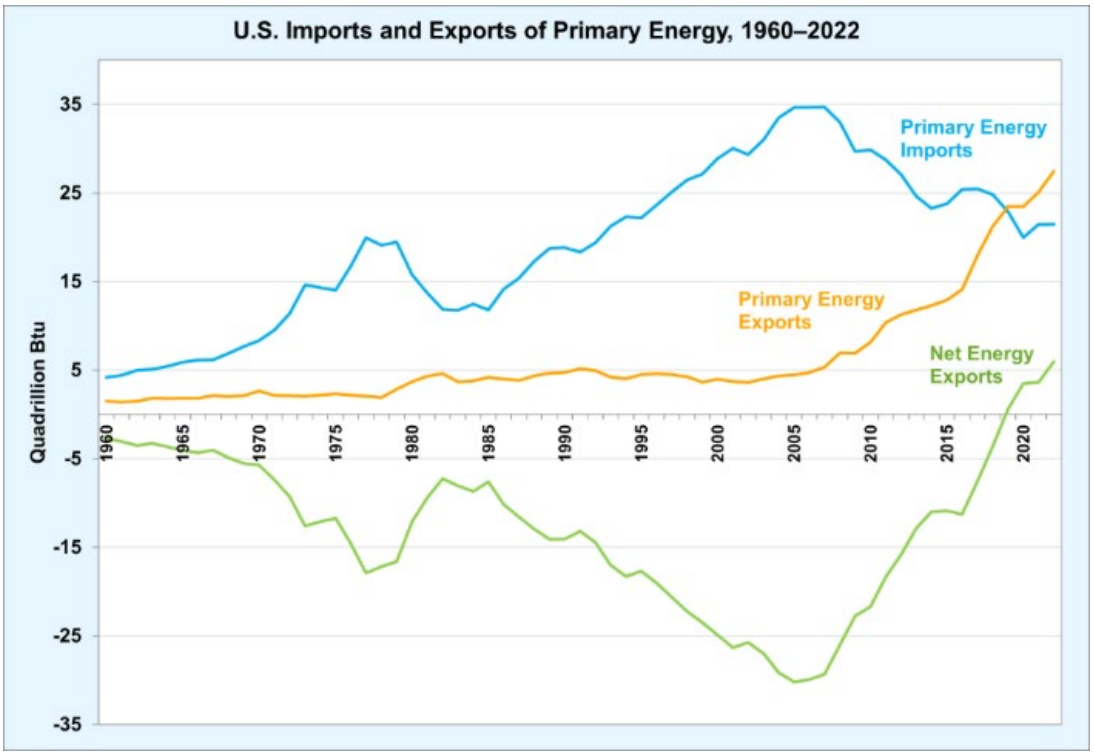
Goal 2. Ensure resilience of U.S. oil and natural gas production and infrastructure reliability.

United States oil and gas production and infrastructure evolved from 19th-century wildcatter wells and pipelines to a sophisticated, nationwide network of production, transportation, and digital systems that underpin modern energy dominance. Edwin Drake's 1859 oil well in Pennsylvania led to investment in drilling, refining, and distribution across our great nation.

Following the Pennsylvania oil boom, discoveries in Texas, Oklahoma, and California fueled regional expansion, rapidly increasing United States production. As technologies continued to advance, new resources, both onshore and offshore, became commercially viable, expanding production in the Gulf of America and Alaska.

The Shale Revolution established the United States as a net energy exporter, the leading global producer of crude oil and natural gas, and the largest exporter of natural gas worldwide. The Shale Revolution arrived in the 21st century and transformed domestic and global energy markets. The revolution solidified the United States as a net energy exporter, the world's largest crude oil and natural gas producer, and largest natural gas exporter.

Figure 3. U.S. Imports and Exports of Primary Energy, 1960-2022



Goal 2 focuses on ensuring the resilience of U.S. oil and natural gas production and infrastructure reliability.

Objectives

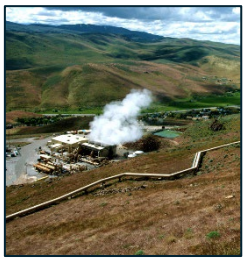
2.1 Increase the recovery factor in unconventional reservoirs.

2.2 Lower the break-even cost of primary recovery operations.

2.3 Transform produced water into an economic resource.

2.4 Increase efficiencies and reliability of midstream infrastructure.

2.5 Develop advanced energy systems that provide low-cost baseload power and products.



Goal 3. Accelerate the discovery and development of gigawatt-scale geothermal energy and position geothermal as a competitive domestic source for reliable baseload electricity generation.

Geothermal resources offer tremendous potential to the nation—from electricity for homes and businesses to energy storage for high-demand loads like data centers. The United States leads the world in geothermal power production, with approximately 4 gigawatts of installed capacity as of 2026. DOE analysis indicates geothermal could provide as much as 300 gigawatts of electricity-generating capacity by 2050. A recent rise in power purchase agreements—more than 25 since 2021—is an indicator that the geothermal power sector is primed for growth.

DOE is focused on realizing the nation's full geothermal power potential through technology research and development, exploration and characterization, data and analysis, and field demonstrations.

Goal 3 focuses on expanding geothermal research, development, and demonstration to drive industry growth and leverage the nation's untapped geothermal potential.

Objectives

3.1 Expand and improve resource characterization and advance the most economic opportunities for development.

3.2 Drive innovations that accelerate new geothermal development and optimization.

3.3 Modernize and extend the life of existing geothermal production.

3.4 Pursue methods to use and maximize the value of geothermal for storage and enhancing grid reliability.

Goal 4. Ensure the security, stability, and strategic value of the Nation's oil and gas exports.

In the past decade, the United States has transitioned from being a net importer of natural gas to the top global producer of both oil and natural gas and is now the top exporter of liquefied natural gas (LNG). United States LNG exports now surpass the exports of any other country by a wide and growing margin, with natural gas exports expected to approximately double from 2026 levels by the early 2030s once the export capacity under construction is completed. With this vast change in global positioning, HGEO is focused on how the United States contributes to global energy security and on assuring fair treatment of United States oil and gas exports on the global market, while also continuously acting to ensure supplies of reliable, affordable energy both domestically and abroad.

Goal 4 focuses on ensuring the security, stability, and strategic value of the nation's oil and gas exports.

Objectives

4.1 Strengthen national resilience by proactively managing critical hydrocarbon resources, mitigating vulnerabilities in global supply chains, and advancing policies that promote reliable, affordable, and secure energy domestically and abroad.

4.2 Develop and execute strategies that balance domestic energy needs, global demand, and long-term economic and national security.

4.3 Implement policies and solutions for securing supply for the United States and our allies.

Goal 5. Fill the Strategic Petroleum Reserve (SPR) to its maximum capacity and maintain drawdown readiness.

The Energy Policy and Conservation Act established the Strategic Petroleum Reserve (SPR) in 1975 to protect the United States economy from oil supply disruptions and to meet obligations under the International Energy Program. The SPR provides an insurance policy against potential petroleum oil supply disruptions caused by natural disasters, sabotage, or geopolitical events. By the spring of 2026, the SPR held 415 million barrels of crude oil stored in underground salt caverns in Louisiana and Texas, down from a peak inventory of 727 million barrels in 2009.

As a member of the International Energy Agency (IEA), the United States is required to maintain oil stocks equivalent to 90 days of net petroleum imports and to participate in coordinated IEA oil releases to address major global disruptions. As a net exporter, the United

States does not have a stockpiling requirement. However, as a major consumer, it is responsible for 43% of IEA collective action. For the 2026 IEA release of 400 million barrels to address supply outages in the Middle East, the United States released 172 million barrels.

Goal 5 focuses on maintaining the drawdown readiness of the Strategic Petroleum Reserve.

Objectives

5.1 Stand ready to release oil within 13 days of Presidential direction.

5.2 Establish and execute an integrated strategy to fill the SPR to capacity.

5.3 Efficiently maintain SPR infrastructure for reliability, safety, and flexibility.

5.4 Codify recommended drawdown and fill triggers for the SPR.

Goal 6. Drive execution of the HGEO mission through the implementation of leading edge, efficient, and fiscally responsible solutions across HGEO programs, processes, and systems.

Operations serve as the backbone of HGEO, providing agile processes and vital support to enable scientific, technical, and mission-focused work by over 725 federal employees and more than 1,750 contractors at HGEO headquarters, the National Energy Technology Laboratory, and the Strategic Petroleum Reserve. By ensuring business functions operate smoothly, efficiently, and are aligned with strategic objectives, operations facilitate daily tasks such as budgeting, communications and engagement, environmental safety and health, workforce management, IT, and administrative oversight. These functions are crucial for advancing HGEO's mission. Emphasizing innovative solutions to operational challenges will help maximize resource effectiveness, streamline workflows, foster a high-performing workforce, and drive efficient mission achievement.

Goal 6 sets the stage for operational enhancement through technology, resources, and partnerships that elevate execution of the HGEO mission.

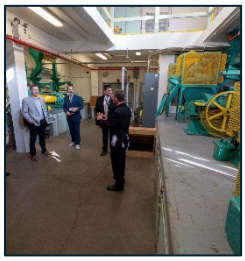
Objectives

6.1 Unleash the transformative power of technology, particularly AI, to revolutionize processes and capabilities, resulting in innovative, cost-effective operations.

6.2 Cultivate opportunities to foster a high-performing HGEO workforce and grow the nation's energy workforce.

6.3 Bolster strategic alliances, stakeholder engagement, collaboration and communication with key partners, and developing solutions to complex challenges.

6.4 Strategically align, safeguard and optimize resources in support of the HGEO mission.



Goal 7. Uphold gold standard science and advance industry-aligned technologies to commercial-scale.

HGEO's national laboratory, the National Energy Technology Laboratory (NETL), innovates and accelerates the nation's energy solutions in hydrocarbons, geothermal energy, and critical minerals production. With research sites in Albany, Oregon; Morgantown, West Virginia; and Pittsburgh, Pennsylvania, NETL operates as one laboratory, applying its expertise in subsurface materials and processes, materials engineering, energy conversion, systems analysis, computational science, and program deployment.

As the only DOE government-owned, government-operated national laboratory, NETL plays a key role in program execution and mission delivery, accelerating technology and developing strategic partnerships. Through its collaborations with industry, academia, and other stakeholders, and by advancing applied research and technology, NETL is strengthening national energy security and contributing to an America that leads the world with affordable, reliable, and secure energy to fuel human prosperity.

Goal 7 focuses on enhancing the capabilities of NETL to deliver research and technology critical to the HGEO mission.

Objectives

7.1 Advance mission-aligned applied research and technology solutions while serving as a resource to DOE as the only government-owned government-operated national laboratory.

7.2 Establish Centers of Excellence at each National Energy Technology Laboratory (NETL) campus aligned with key industry interests.

7.3 Revolutionize mission delivery and business excellence leveraging advances in AI and data science.

7.4 Attract, develop, and retain a world-class HGEO/NETL workforce.

7.5 Enhance operational best practices to protect the health and safety of all laboratory personnel and the environment.

IV. Conclusion

The HGEO Strategic Plan represents a response to the urgent energy opportunities facing our nation and the world. Abundant, reliable, and affordable energy is essential for human flourishing, economic opportunity, and national security. This comprehensive plan guides HGEO with a clear vision for American energy leadership and a mission to unleash the full potential of our hydrocarbons and geothermal resources.

This Strategic Plan provides a clear set of priorities that is guided by core values of America-first execution and scientific, economically driven decisions. Every action will be executed with urgency, transparency, and fiscal responsibility. The plan fosters an environment of innovation, collaboration, and data-driven decision-making, leveraging the expertise of national labs, industry partners, and a dedicated workforce.

The strategic goals outlined within this document—from restoring coal as a cornerstone and enhancing the resilience of oil and natural gas, to accelerating gigawatt-scale geothermal deployment, securing our reserves and exports, and driving operational excellence—are interdependent and vital. Successful execution of these goals and corresponding objectives is a critical component in supplying affordable, reliable, and secure energy for our defense, economy, and the well-being of every American citizen.

We recognize that the challenges are significant, but so too is the opportunity to solidify America's energy independence and leadership on the global stage.

We are confident that through dedicated effort, scientific rigor, and unwavering commitment to our America-first principles, HGEO will deliver on its promise, contributing significantly to the prosperity, security, and flourishing of the United States for generations to come.

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