



**ENERGY SCIENCES
COALITION**

August 11, 2022

The Honorable Jennifer Granholm
Secretary
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

The Honorable Shalanda Young
Director for Office of Management and Budget
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

The Honorable Alondra Nelson
Acting Director for Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Dear Secretary Granholm, Director Young, and Director Nelson,

As you prepare the fiscal year (FY) 2024 budget request to Congress, **the Energy Sciences Coalition (ESC) urges you to request \$9.5 billion for the Department of Energy (DOE) Office of Science.** This level of funding is consistent with the bipartisan *CHIPS and Science Act* signed into law on August 9 that authorizes research and infrastructure activities at the DOE Office of Science. The FY 2024 budget presents the first opportunity to provide full funding for the programs and activities laid out in this legislation and will be a critical step in boosting the research capabilities of federal agencies such as DOE and maintaining U.S. competitiveness.

There is universal agreement that the United States must maintain its leadership in science, technology and innovation, and the DOE Office of Science plays a pivotal and leading role in addressing this country's energy, national security, and environmental challenges. The DOE Office of Science is also uniquely positioned to advance all seven of the Biden Administration's FY 2024 research and development priorities outlined in the July 22 memo to federal agencies, especially tackling climate change, advancing national security and technological competitiveness, and cultivating an equitable STEM education, engagement and workforce ecosystem.

As the nation's primary sponsor of physical sciences research, the DOE Office of Science plays a vital role in the American scientific ecosystem – a proven model for success in discovery and innovation. The Office of Science sponsors research programs vital to American prosperity and security at research universities and national laboratories and helps maintain the U.S. pipeline of science and engineering talent. The Office of Science is also unique among federal science agencies, supporting the network of 17 DOE national laboratories—a competitive advantage for the nation's research and innovation ecosystem—and directly stewarding ten of them. The Office of Science also builds and operates the most

The Energy Sciences Coalition (ESC) is a broad-based coalition of organizations representing scientists, engineers and mathematicians in universities, industry and national laboratories who are committed to supporting and advancing the scientific research programs of the U.S. Department of Energy (DOE), and in particular, the DOE Office of Science.

sophisticated, world-class scientific user facilities used by universities, industry and other federal agencies.

Congress, with the Administration's strong support, has recognized that bold new investments are needed to stay ahead of international competition. The \$9.5 billion authorized for the DOE Office of Science in the *CHIPS and Science Act* is needed to:

- grow core research at national laboratories and research universities in the physical sciences, biological sciences, advanced materials, geosciences, computing and engineering to help develop future energy technologies and climate solutions, support general discovery science that serves as the seed corn of future technologies, and fully utilize new and updated world-class facilities and cutting-edge instrumentation.
- implement the 18 new research initiatives authorized in the *CHIPS and Science Act* to address energy and environmental challenges and help achieve economy-wide net-zero emissions no later than 2050.
- prepare the next generation of American scientific and engineering talent through competitively awarded grants and significantly expand existing workforce and education programs, such as the DOE Office of Science Graduate Fellowship and Computational Sciences Graduate Fellowship, while also creating new programs to address the nation's growing workforce needs in STEM and energy industries and meaningfully tackling issues of broadening participation and diversity, equity, and inclusion.
- accelerate the construction and upgrades of world-class scientific user facilities and maximize operations to support the more than 36,000 researchers from academia, industry and federal agencies who rely on these facilities for their science and engineering pursuits.
- advance new, strategic investments in innovative research areas, such as quantum science and technology; artificial intelligence and scientific machine learning; genomics, biotechnology, and other convergence science; fusion energy and plasma science; microelectronics; next-generation communications; accelerator and laser systems; and optical detectors.
- maintain and grow multi-disciplinary centers focused on addressing scientific grand challenges, such as Energy Frontier Research Centers, Energy Earthshot Research Centers, Bioenergy Research Centers, Energy Innovation Hubs, and national quantum information science research centers as well as artificial intelligence co-design and microelectronics research centers.

New investments in fundamental research are needed to stay ahead of international competition, maintain U.S. competitiveness, and create American jobs of the future in key energy sectors as well as new technology areas such as high-performance computing, artificial intelligence, biotechnology, microelectronics, and quantum information science. In particular, scientific breakthroughs and energy technology innovation are still necessary to decarbonize the U.S. economy and mitigate the worst effects of climate change. Office of Science-supported fundamental research forms the foundation for future energy technologies. The current imperative—energy systems that meet our energy security, economic, and environmental challenges—requires increasing investments in all areas of fundamental research to advance all energy systems, including energy storage, negative emission technologies, advanced nuclear, hydrogen, fusion, renewables such as wind and solar, carbon capture, storage and utilization, and next-generation fuels. The Office of Science helps lead scientific breakthroughs for the Energy Earthshots and is a key participant in energy technology working groups focused on cross-cutting energy challenges.

Groundbreaking research requires complementary investments in research infrastructure. The Office of Science is conducting international benchmarking studies and have generally found that the “era of unquestioned American scientific dominance is drawing to a close” and “there is world-wide competition for access to the latest, most powerful facilities.” However, it is not too late for the U.S. to reclaim

leadership. Accelerating construction of state-of-the-art facilities would help maintain and attract the best scientific talent and drive future discoveries and technological innovation. Further, more general DOE national lab infrastructure, such as office space and critical utilities, is the backbone of the DOE enterprise, but is aging and needs to be modernized. Modern, reliable infrastructure at the national labs is critical to support world class science facilities, attract top talent, and address science and technology challenges of the future.

As you know, the DOE Office of Science enjoys bipartisan and bicameral support in Congress. It is imperative that the Administration honor this bipartisan support, as well as the vision laid out in the *CHIPS and Science Act*, by requesting \$9.5 billion for the DOE Office of Science in FY 2024.

We look forward to working with you in advancing the critical missions of this invaluable agency.

Sincerely,

Leland Cogliani
Co-chair
202-289-7475
leland@lewis-burke.com

Julie Groeninger
Co-chair
202-220-1362
jgroenin@princeton.edu

ESC MEMBERSHIP

American Association for the Advancement of Science
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American Association of Physics Teachers
American Astronomical Society
American Chemical Society
American Crystallographic Association
American Geophysical Union
American Geosciences Institute
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