



ENERGY SCIENCES COALITION

November 7, 2023

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 Arati Prabhakar
Director of the Office of Science and Technology Policy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, DC 20504

Dear Secretary Granholm, Director Young, and Director Prabhakar,

As you prepare the fiscal year (FY) 2025 budget request to Congress, **the Energy Sciences Coalition (ESC) urges you to request no less than \$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* which authorized research and infrastructure activities at the DOE Office of Science. We recognize the constrained budget environment, but now is the time to double down on fundamental research programs and build world-leading research facilities to maintain U.S. competitiveness, drive economic growth, and build the next-generation workforce.

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 2025 research and development priorities outlined in the August 17 memo to federal agencies, especially advancing trustworthy artificial intelligence technologies, maintaining global security and stability by developing critical emerging technologies, tackling climate change through clean energy technology innovation to meet net zero greenhouse gas emission goals by 2050, driving regional development and job creation, and reducing barriers to STEM education and for emerging research institutions.

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

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.

ecosystem— and directly stewarding ten of them. The Office of Science also builds and operates the most 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. Despite the bold vision in the *CHIPS and Science Act*, the FY 2024 budget request fell short of the funding guidance for the DOE Office of Science. The FY 2024 authorized funding level for the DOE Office of Science is \$9.5 billion compared to the FY 2024 budget request of \$8.8 billion. The FY 2025 authorized funding level is \$10.07 billion. However, recognizing that the *CHIPS and Science Act* was passed after the FY 2024 budget request process was well underway and funding caps are now in place under the *Fiscal Responsibility Act*, ESC recommends no less than \$9.5 billion in FY 2025, consistent with the FY 2024 authorized funding level, to meet the intent of the legislation while addressing the critical and growing mission needs of the DOE Office of Science.

At least \$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 as well as support general discovery science that serves as the seed corn of future ideas, technologies, and job creation.
- **advance new, strategic investments in emerging technologies**, such as quantum science and technology; artificial intelligence and scientific machine learning; microelectronics; fusion energy; advanced computing; genomics, biotechnology, and other convergence science; next-generation communications; accelerator and laser systems; and optical detectors. Additional funding is needed for the DOE Office of Science to fully realize the potential and deliver on the ambitious goals in federal strategies such as the *Bold Decadal Vision for Commercial Fusion Energy, Harnessing Biotechnology and Biomanufacturing Research and Development to Further Societal Goals*, the *National Strategy on Microelectronics Research*, the National Quantum Initiative, and the *National Artificial Intelligence Research and Development Strategic Plan*. The DOE Office of Science plays a prominent role in all of these efforts.
- **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. The DOE Office of Science already maintains and operates 28 world-leading facilities.
- Fully fund the **operations and maintenance** of new and updated world-class facilities and cutting-edge instrumentation. All DOE Office of Science facilities are significantly oversubscribed, meaning many missed opportunities each year to advance high-impact and highly-rated research from national labs, academia, industry and start up companies, and other federal agencies.
- implement the **18 new research initiatives** authorized in the *CHIPS and Science Act* to address energy and environmental challenges, stay at the forefront of science and technology, and deploy state-of-the-art instrumentation.
- **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, and 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.
- **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, national quantum information science research centers, microelectronics science research centers, and AI co-design centers.

- **modernize national laboratory infrastructure**, such as utilities, roads, and general purpose lab space, to attract and retain the best scientific and engineering talent from around the world.

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. 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 eight 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 at least \$9.5 billion for the DOE Office of Science in FY 2025.

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
American Association of Physicists in Medicine
American Association of Physics Teachers
American Astronomical Society
American Chemical Society
American Crystallographic Association
American Geophysical Union
American Geosciences Institute
American Institute of Physics
American Mathematical Society
American Nuclear Society
American Physical Society
American Society for Engineering Education
American Society of Agronomy
Acoustical Society of America (ASA)
American Society of Mechanical Engineers
American Society for Microbiology
American Society of Plant Biologists
American Vacuum Society
Arizona State University
Association of American Universities
Association of Public and Land-grant Universities
AVS – The Society for Science and Technology of
Materials, Interfaces, and Processing
Battelle
Binghamton University
Biophysical Society
Boston University
Case Western Reserve University
City College of CUNY
Clemson University
Coalition for Academic Scientific Computation (CASC)
Consortium for Ocean Leadership
Columbia University
Computing Research Association
Council of Graduate Schools
Council of Scientific Society Presidents
Cornell University
Cray Inc.
Crop Science Society of America
Duke University
The Ecological Society of America
Florida State University
Fusion Power Associates
General Atomics
Geological Society of America
George Mason University
Georgia Institute of Technology
Harvard University
Health Physics Society
IBM
IEEE-USA
Iowa State University
Jefferson Science Associates, LLC
Krell Institute
Lehigh University
Long Island University
Massachusetts Institute of Technology
Materials Research Society
Miami University of Ohio
Michigan State University
Michigan Technological University
New York University
Northeastern University
Northern Illinois University
Northwestern University
Oak Ridge Associated Universities (ORAU)
Optica (formerly OSA)
Pace University
Penn State University
Princeton University
Purdue University
Rensselaer Polytechnic Institute
Rochester Institute of Technology
Rutgers, The State University of New Jersey
Society for Industrial and Applied Mathematics
Society for Science at User Research Facilities
Soil Science Society of America
South Dakota School of Mines
Southeastern Universities Research Association
SPIE
Stanford University
Stony Brook University
Tech-X Corporation
The Ohio State University
University of California System
University of Chicago
University of Colorado Boulder
University of Delaware
University Fusion Association
University of Hawaii
University of Illinois System
University of Iowa
University of Maryland, College Park
University of Michigan
University of Missouri System
University of Nebraska
University of North Texas
University of Oklahoma
University of Pennsylvania
University of Rochester
University of Southern California
University of Tennessee
University of Texas at Austin
University of Virginia
University of Wisconsin-Madison
Universities Research Association
Vanderbilt University
Washington State University
West Virginia University
Yale University