



## ENERGY SCIENCES COALITION

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September 2022

Dear Chairwoman Kaptur, Chairwoman Feinstein, Ranking Member Simpson, and Ranking Member Kennedy,

**As you prepare a final fiscal year (FY) 2023 Energy and Water appropriations bill, the Energy Sciences Coalition (ESC) urges you to appropriate at least \$8.1 billion in FY 2023 for DOE Office of Science, consistent with the Senate mark.**

New investments in fundamental research are needed to bolster the economy, stay ahead of international competition, maintain U.S. scientific and technological leadership, 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, and quantum information science. The funding increase in FY 2023 is needed to maintain a funding trajectory that ensures continued support for groundbreaking scientific discoveries, allows the construction and operation of world-class scientific facilities, helps advance energy technologies needed for the nation to meet net-zero carbon emissions economy wide, develops emerging technologies, and maintains the highly skilled science and technology workforce that is essential for the United States to compete globally.

As the nation's primary sponsor of physical sciences research, DOE Office of Science plays a vital role in the American scientific ecosystem and is a proven model for success in discovery and innovation. The DOE 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. DOE Office of Science is also unique among federal science agencies in its support of the 17 DOE national laboratories—a unique strength of the nation's research and innovation ecosystem—including directly stewarding ten of them. DOE Office of Science also builds and operates the most sophisticated, world-class scientific user facilities used by research universities, industry and most federal agencies.

Specifically, increased funding is needed to:

- grow core research at national laboratories and research universities in the physical sciences, biological sciences, advanced materials, geosciences, fusion energy, high performance computing and engineering to help develop future energy technologies and fully utilize new and updated world-class facilities and cutting-edge instrumentation, especially with ambitious goals to achieve net-zero emissions economy-wide no later than 2050;
- prepare and diversify the next generation of American scientific and engineering talent through competitively awarded grants, significantly expanding existing workforce and education programs, and creating new programs to address the nation's growing workforce needs in STEM and energy industries ; this must include broadening participation and meaningfully tackling issues related to diversity, equity, and inclusion;

*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.*

- continue making progress on 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 that rely on these facilities for their science and engineering pursuits;
- advance new, strategic investments in innovative, high-reward research areas, such as quantum science and technology; artificial intelligence and scientific machine learning; genomics, biotechnology, and other convergence science; microelectronics; next-generation communications; accelerator and laser systems; and optical detectors, and
- maintain and grow multi-disciplinary centers focused on addressing scientific grand challenges, such as Energy Earthshot Research Centers, Climate Centers, Energy Frontier 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.

Beyond FY 2023, ESC looks forward to working with you on advancing new DOE Office of Science research initiatives, science and technology centers, and infrastructure investments laid out in the DOE Science for the Future Act provisions of the *CHIPS and Science Act*. The broad and diverse program activities and funding levels for DOE Office of Science authorized in the *CHIPS and Science Act* are essential to maintain U.S. leadership and competitiveness in science and technology.

Thank you for your strong support for DOE Office of Science.

Sincerely,

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## ESC MEMBERSHIP

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American Association of Physics Teachers  
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