ENERGY SCIENCES COALITION

Fiscal Year 2018 Funding Statement for the U.S. Department of Energy Office of Science

The Energy Sciences Coalition (ESC) is strongly opposed to President Trump's FY 2018 budget blueprint for the DOE Office of Science. The proposed $900 million cut – a nearly 20 percent decrease – would jeopardize U.S. leadership in critical scientific fields responsible for creating new jobs, spurring economic growth and supporting vital national security missions. This dramatic cut would also cause the United States to fall further behind other countries in building the next generation of world-class scientific facilities, which are essential to our global competitiveness. Because these are investments in basic research that private industry will not make, these are opportunities that will be lost to the American economy.

Instead, ESC urges the President in his final FY18 Budget Request, and the Congress to increase funding for the DOE Office of Science to $5.7 billion in FY 2018, an increase of 4 percent real growth above the FY 2016 enacted levels. This level of funding will enable the Office of Science to: support and advance scientific research programs that are essential to our economic growth, energy security and national security; support training for the next generation of American scientific and engineering research talent; continue to build world-class scientific tools and facilities; and support the network of the DOE National Laboratories.

The U.S. can no longer claim to be the undisputed global leader in science, technology and innovation. The Global Innovation Index 2016 now ranks the United States 4th among world innovators, and the U.S. has fallen to 10th in national research investment as a percentage of GDP. Reversing the decline in American leadership in science and technology – essential to ensuring our energy security and national security – cannot be achieved without increasing support for scientific research and research facilities.

The DOE Office of Science plays an essential role in propelling U.S. science and innovation by:

Sponsoring Vital Research: The Office of Science is an integral component of the U.S. scientific ecosystem, providing funding to researchers across scientific fields in pursuit of both fundamental discoveries and advances to our energy and national security. It is our Nation's largest supporter of basic physical sciences research and is the primary government sponsor for research in subdisciplines, such as high energy physics, heavy-element chemistry, plasma physics, and catalysis. Additionally, the Office of Science plays a critical role in U.S. leadership in other fields, including the biological sciences, advanced materials, geosciences, computing and engineering.

Preparing the Next Generation of American Scientific and Engineering Talent: The Office of Science supports a diverse portfolio of research at colleges and universities nationwide. Through competitively awarded grants, the Office of Science supports approximately 22,000 Ph.D. scientists, engineers, graduate students, undergraduates and technical personnel at more than 300 institutions across all 50 states and the District of

Columbia. DOE-funded research and education programs strengthen our Nation's scientific knowledge base and prepare the next generation of scientists and engineers by providing hands-on experience for students.

Stewarding World-Class Scientific Facilities: The Office of Science supports the operation of the largest collection of major scientific user facilities in the world. Located at national laboratories and universities across the country, these open-access facilities include particle accelerators, experimental reactors, X-ray synchrotron and free-electron laser light sources, leadership-class supercomputers and other high-precision instruments. Annually, more than 32,000 researchers from academia, industry and federal agencies use these facilities to support their scientific and engineering needs. Nearly half of the DOE facility users are university and federal researchers working to answer fundamental science questions. Additionally, more than 50 Fortune 500 companies and 150 small businesses use these facilities to conduct the underlying research required to develop new technologies and products that drive the economy. Without these state-of-the-art facilities, U.S. researchers and businesses would not have domestic access to these vital scientific tools and instead would carry out their research abroad, resulting in their contributing to another country's innovation enterprise.

Supporting U.S. Economic Growth: During the last decade, the DOE Office of Science has made key science investments to advance U.S. leadership in energy technologies. For example, fundamental research in nanostructured cathode materials led to the production and deployment of high-energy, lithium ion batteries used by car companies for electric vehicles; better understanding of the chemistry of sprays of diesel fuel led to the design of new, more energy-efficient diesel engines; and interest in how organic films harvest light and generate electricity resulted in the commercialization of a thin film that uses solar energy to power tablets, digital signage, wearable devices, and even buildings as a type of window coating. These are all examples of high-risk, long-term research and beyond the scope of what industry can or will support.

Ensuring National Security: DOE Office of Science facilities offer researchers from the National Nuclear Security Administration (NNSA), Department of Defense (DOD), Department of Homeland Security and Intelligence Agency unique capabilities necessary to advance a broad range of national security applications. NNSA scientists, for example, rely on Office of Science facilities to understand the material properties of an aging nuclear weapons stockpile and how to harden electronic components against radiation. Additionally, Office of Science-supported research has helped develop lighter, stronger armor for our soldiers, increased the electric grid's resilience to cyber attacks, and improved our ability to detect nuclear and radiological smuggling at our borders.

For these reasons, we request Congress provide $5.7 billion for the DOE Office of Science in FY 2018. ESC looks forward to working with Congress and the Administration to enact a budget that will strengthen our economy, improve our global competitiveness and ensure our national security.

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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.

Agronomy, Crop and Soil Science Societies
American Association for the Advancement of Science
American Astronomical Society
American Chemical Society
American Geophysical Union
American Geosciences Institute
American Institute of Physics
American Mathematical Society
American Physical Society
American Society for Engineering Education
American Society of Agronomy
American Society of Mechanical Engineers
American Society for Microbiology
American Society of Plant Biologists
Arizona State University
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Boston University
Case Western Reserve University
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Coalition for Academic Scientific Computation (CASC)
Columbia University
Computing Research Association
Consortium for Ocean Leadership
Cornell University
Council of Scientific Society Presidents
Cray Inc.
Crop Science Society of America
CUNY City College
Duke University
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