



April 13, 2020

To the U.S. House of Representatives Science, Space, and Technology Committee Staff:

Thank you for the opportunity to submit a response to your request for information related to additional resources needed for near-term actions and longer-term economic stimulus activities to address and mitigate the impacts of the current COVID-19 crisis. On behalf of the nearly 100 organizations that are members of the Energy Sciences Coalition, we would like to offer recommendations that will support the U.S. Department of Energy (DOE) Office of Science's response to – and recovery from – COVID-19. Our recommendations include investments in shovel-ready construction of world-class science facilities, which would create jobs in the short term and expand the research and education initiatives that are essential to creating the workforce of the future. At least \$10 billion should be provided to help support response, recovery, and economic stimulus activities for Office of Science.

#### *COVID-19 Response*

The Coronavirus Aid, Relief, and Economic Security Act (CARES) Act made an important down payment on DOE Office of Science's ability to assist federal efforts in finding a vaccine and modeling the spread of the COVID-19 virus. Light sources and neutron sources, for example, are being made available to understand the underlying structure of the virus. High performance computing platforms, coupled with artificial intelligence and machine learning, are being used to rapidly screen thousands of chemical compounds to help develop a vaccine and antiviral compounds. They are also being used to model how COVID-19 infections spread and how people behave during outbreaks to improve public health responses.

However, additional resources are needed during this time to support DOE user facilities, high performance computing capabilities, and enabling infrastructure, and new resources are necessary to support research efforts at DOE national laboratories and research universities to help with the COVID-19 response. Additionally, partnerships with the National Institutes of Health and the Department of Health and Human Services should be further expanded to share available data and fully leverage scientific machine learning capabilities.

#### *COVID-19 Impacts*

While the Office of Science research network – including the 17 DOE National Laboratories, world-class scientific tools and facilities, and world-leading researchers at the national labs and research universities across the country – is playing a critical role in the COVID-19 response, this pandemic has impacted DOE Office of Science research efforts, facility and lab operations, and construction projects. Although the research community is still assessing the financial impact, it is clear that additional resources will be needed to restart operations of laboratories, user facilities and specialized equipment, and the enabling infrastructure at both DOE national laboratories and research universities. DOE should also be given additional resources and management flexibility in extending existing research grants as well as reimbursing researchers, faculty, students, contractors and subcontractors associated with DOE grants, cooperative agreements, and contracts, including those that could not report to work as a result of COVID-19.

*Research Infrastructure, Research Initiatives and Workforce Development*

The ESC July 2019 Infrastructure Statement to Congress (attached) provides recommendations on the types of Office of Science-supported research infrastructure at national laboratories and university research facilities that would immediately create construction jobs and stimulate the economy, as well as enable future scientific breakthroughs and discoveries vital to continuing American prosperity and security. This includes the construction of world-class user facilities and instruments that currently support 36,000 researchers from academia, industry and federal agencies; upgrades to and replacement of increasingly obsolete and unreliable support infrastructure to address growing deferred maintenance issues at DOE national laboratories; and expanded research initiatives to attract the best and brightest scientists and engineers to critical fields of science.

Not only is DOE Office of Science the largest government sponsor for basic research in the physical sciences, but it is also a leader in advancing critical industries of the future, including quantum information science, artificial intelligence, next-generation high performance computing, advanced communications networks, future energy technologies and engineering biology. To maintain American science and technology leadership over the next several decades in these industries of the future requires additional investments. The DOE Office of Science can leverage existing funding mechanisms, such as Energy Frontier Research Centers, Energy Innovation Hubs, and other center-level efforts, to bring together multi-disciplinary teams of researchers from national labs and research universities to tackle science and energy grand challenges and train the next-generation workforce. Additional funding can also be provided to support fellowships and early career research faculty awards. All of these centers and existing award mechanisms can be forward funded to support all activities for the four- to five-year award terms to avoid future mortgages.

Thank you for your consideration. We look forward to working with the Committee to advance these important efforts and are happy to answer any questions. Please stay healthy and safe.

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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.*