# Congress of the United States
## Washington, DC 20515

April 5, 2017

The Honorable Mike Simpson
Chairman
Energy and Water Development, and
Related Agencies
House Appropriations Committee
2362-B Rayburn House Office Building
Washington, DC 20515

The Honorable Marcy Kaptur
Ranking Member
Energy and Water Development, and
Related Agencies
House Appropriations Committee
1016 Longworth House Office Building
Washington, DC 20515

Dear Chairman Simpson and Ranking Member Kaptur:

As Members with a strong interest in ensuring our nation's future energy security, we thank the subcommittee for continuing to fund several key Department of Energy (DOE) research and innovation programs and request that these programs are given high priority as you consider the Fiscal Year (FY) 2018 Energy and Water Appropriations bill. We are specifically writing to support four complementary approaches to tackling the critical energy innovation challenges before us: the Advanced Research Projects Agency-Energy (ARPA-E) program, Energy Innovation Hubs, and Energy Frontier Research Centers (EFRCs), and the Regional Clean Energy Innovation Partnerships.

As you know, DOE plays an important role in the development and incubation of clean energy innovation that benefits our nation and the economy. DOE programs such as these support scientific research and technological advances at multiple stages of the innovation pipeline. These programs represent a robust portfolio of energy R&D investments, each of which complements the others to maximize our nation's ability to achieve energy breakthroughs as quickly as possible. These programs, outlined below, deserve your highest consideration.

- **ARPA-E: $356.8 million**
- **Energy Innovation Hubs: $110.5 million**
- **EFRCs: $146.6 million**
- **Regional Clean Energy Innovation Partnerships: $112.1 million**

**Advanced Research Projects Agency-Energy (ARPA-E):** With significant federal investments, the DOD-funded Defense Advanced Research Projects Agency (DARPA) has been responsible for some of the most innovative technological breakthroughs of our time, from Global Positioning Systems (GPS) to the Internet. ARPA-E was created to replicate the successful DARPA model by incentivizing researchers to develop promising research into game-changing technologies that can meet our future energy needs. Despite the potential for a huge payoff, the private sector does not invest sufficiently in this kind of "high-risk, high-reward" energy research. Supporting ARPA-E is a bet on Americans' proven ability to turn creative ideas into market-creating, job-growing businesses. ARPA-E has used approximately $1.5 billion to fund more than 580 projects through 36 focused programs and three open funding solicitations. Since 2015, 74 of these projects have attracted more

than $1.8 billion in private sector follow-on funding. For FY 2018, we request $356.8 million to enable ARPA-E to continue to invest in innovative ideas.

**Energy Innovation Hubs (Hubs):** The Hubs are large, integrated research centers involving multiple disciplines, investigators, and institutions with a focus on bridging the gap between scientific breakthroughs and industrial commercialization. The Hubs use a centralized, mission-oriented research approach like that employed by the Manhattan Project or at AT&T's Bell Laboratories. To date, DOE has established and Congress has supported four hubs focusing on: Fuels from Sunlight; Modeling and Simulation for Nuclear Reactors; Batteries and Energy Storage; and Critical Materials. We also support the finalizing of the Energy-Water Desalination Hub. For FY 2018, we request $110.5 million to fully fund the five hubs.

**Energy Frontier Research Centers (EFRCs):** EFRCs consist of small groups of researchers focused on the fundamental science that underlies roadblocks to revolutionary energy technologies, such as interfacial chemistry for solar energy conversion and electrical energy storage. Unlike the Hubs and ARPA-E, these centers specifically focus on long-term chemical and materials science for energy applications. The centers also play a significant role in training graduate students in scientific disciplines central to overcoming energy-related grand challenges. After 2014, there are now 36 EFRCs with related research activities being conducted in 34 states and Washington, DC. For FY 2018, we request $146.6 million to support these centers.

**Regional Clean Energy Innovation Partnerships:** These partnerships will support activities to strengthen the regional innovation ecosystems around energy concerns, accelerate technology transfer, and encourage collaborations for commercialization between national labs, industry, small businesses, universities, state governments, and other partners. They provide a unique opportunity to leverage regional energy resources, to identify regional energy challenges, and to develop new partnerships that facilitate technological solutions to addressing these challenges. For FY18, we urge your support for $112.1 million for these partnerships.

America's innovation history is built on a foundation of robust federal investment in fundamental scientific research. At the same time, the public sector has a deep history of working hand-in-hand with the private sector to bring the fruits of this research to market, address market failures, provide needed expertise, and raise capital for high-payoff, though riskier, projects in which industry would not otherwise invest. Without such partnerships, the stories of the transcontinental railroad, the aviation sector, and biotechnology industries would be dramatically different. As in these past projects, the government has a critical role to play in helping to support and foster the new ideas that will serve as the foundation for the nation's future energy economy.

Thank you for your consideration of these important DOE innovation programs.

Sincerely,

Donald S. Beyer Jr.

Anna G. Eshoo

Mark Takano

Bobby L. Rush

Gerald E. Connolly

Mark Pocan

Peter DeFazio

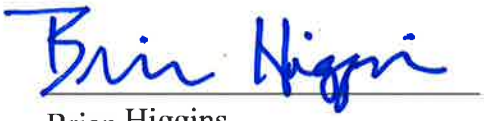
Eleanor Holmes Norton

Mark DeSaulnier

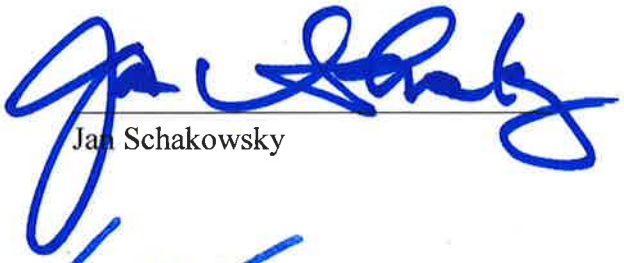
Elizabeth H. Esty

Eliot L. Engel

Barbara Lee



Brian Higgins



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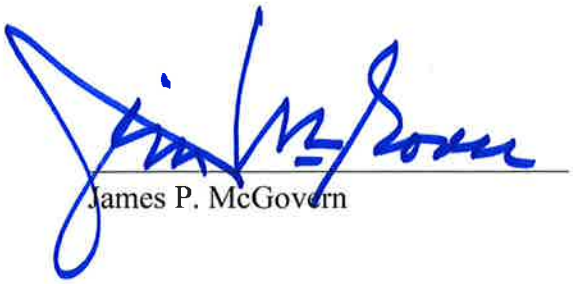
Donald M. Payne, Jr.

Eric Swalwell

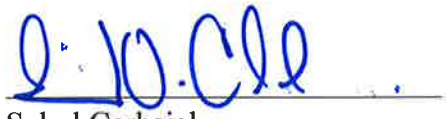
Debbie Dingell

Alcee L. Hastings

John Sarbanes



James P. McGovern



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Michael E. Capuano

Scott Peters

Suzanne Bonamici

Zoe Lofgren

Jared Polis

Jared Huffman

Ruben J. Kihuen

Josh Gottheimer

Danny K. Davis

Tony Cárdenas

Raúl Grijalva

John Garamendi

Alan Lowenthal


Linda T. Sánchez


Judy Chu


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Bill Pascrell, Jr.


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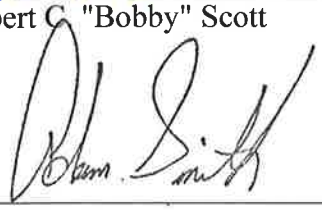
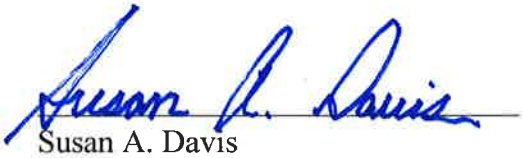
Seth Moulton


Robert C. "Bobby" Scott


Sean Patrick Maloney


Adam Smith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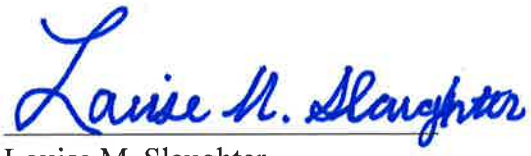
Henry C. "Hank" Johnson, Jr.


Diana DeGette

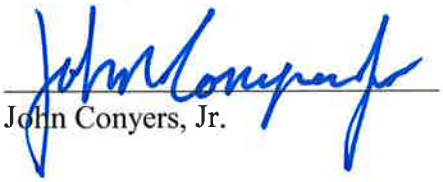

Elijah E. Cummings


Dave Loebsack



Louise M. Slaughter

Ro Khanna



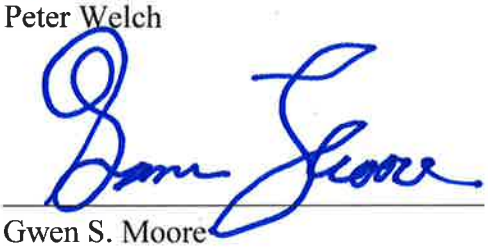
John Conyers, Jr.

A. Donald McEachin

James R. Langevin

Peter Welch

John K. Delaney



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Chellie Pingree

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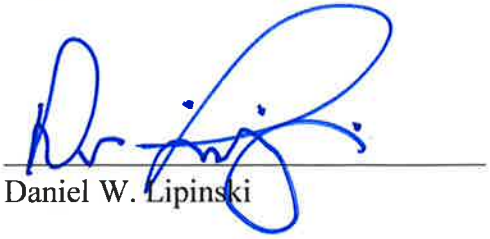

Daniel W. Lipinski

Pramila Jayapal

Alma S. Adams, Ph.D.

Steve Cohen