

# United States Senate

WASHINGTON, DC 20510

April 26, 2013

The Honorable Dianne Feinstein  
Chairman  
Senate Appropriations Subcommittee on  
Energy and Water Development  
United States Senate  
Washington, DC 20510

The Honorable Lamar Alexander  
Ranking Member  
Senate Appropriations Subcommittee on  
Energy and Water Development  
United States Senate  
Washington, DC 20510

Dear Chairman Feinstein and Ranking Member Alexander,

As Senators with a strong interest in securing our nation's energy future, we thank the Subcommittee for continuing to fund several key research and innovation programs in the Department of Energy (DOE). We are specifically writing to support three complementary approaches to tackle the clean energy and energy security problems before us. These programs – the Advanced Research Projects Agency – Energy (ARPA-E), Energy Innovation Hubs, and the Energy Frontier Research Centers (EFRCs) – each serve a unique purpose, and are important building blocks to achieve our energy goals. We recognize that budgets are very constrained and will continue to be in the coming years. As the Committee develops the Fiscal Year (FY) 2014 Energy and Water Appropriations Bill, we urge you to assign a high priority to these programs and continue to fund them at a robust and sustained level.

As you know, DOE plays an important role in the development and incubation of clean energy and innovation that will benefit our nation. We need a national energy policy that continues to advance us along the path of greater energy security, economic growth, and environmental sustainability. DOE programs, such as ARPA-E, the Energy Innovation Hubs, and the EFRCs, support scientific research and technological advances at different stages of the innovation process. These programs represent a robust portfolio of energy R&D modalities, each of which complements the others to maximize the nation's ability to achieve energy breakthroughs as quickly as possible. These programs, outlined below, deserve your highest level of support in the FY 2014 budget, which we request at the following levels:

- **ARPA-E: \$379 million**
- **Energy Innovation Hubs: \$135 million**
- **EFRCs: \$168.7 million**

**Advanced Research Projects Agency – Energy (ARPA-E)** – With much federal investment, 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 to the Internet. ARPA-E was created to work in the same way, by challenging researchers to develop game-changing technologies to meet our clean energy needs. Despite the reasonable odds and potential for a huge payoff, the private sector does not invest sufficiently in this kind of “high-risk, high-reward” research. Supporting ARPA-E is a bet on

Americans' ability to turn game-changing ideas into market-creating, job-growing businesses. To date, ARPA-E has funded more than 285 projects across 12 program areas, and the Agency announced this year that 17 of its innovative research projects – which received a total of \$70 million in federal support – have capitalized on their results to secure an additional \$450 million in private sector investment. There is a tremendous interest at the Agency in investing in many more innovative ideas. For FY 2014, we request \$379 million.

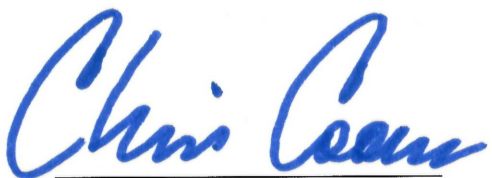
**Energy Innovation Hubs (Hubs)** -- The Hubs are large, multidisciplinary, multi-investigator, multi-institutional integrated research centers, with a focus on bridging the gap between scientific breakthroughs and industrial commercialization. The Hubs use a centralized, mission-oriented research approach like that employed by the Manhattan Project or at AT&T's Bell Laboratories, which developed the transistor. To date, DOE has established, and Congress has supported, five Hubs focusing on: Fuels from Sunlight; Energy Efficient Buildings; Modeling and Simulation for Nuclear Reactors; Batteries and Energy Storage; and Critical Materials. We encourage your continued support for the existing Hubs, as well as the new Hub proposed by DOE in the FY 2014 budget, which would focus on electricity systems and address challenges to grid modernization. For FY 2014, we request \$135 million, which would fully fund the five existing and one newly requested Hub.

**Energy Frontier Research Centers (EFRCs)** -- EFRCs consist of small groups of researchers focused on the fundamental science underlying 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, basic scientific research. The centers also play a significant role in training graduate students in scientific disciplines central to overcoming energy-related grand challenges. In the coming year, the EFRCs will undergo open recompetition that will include selection of new centers and renewal applications for the 46 existing EFRCs. For FY 2014, we request \$168.7 million, which includes annual funding of \$100 million and an additional one-time funding of \$68.7 million to fully forward-fund the new and renewed EFRCs.

America's innovation history is built upon a foundation of federal investment in fundamental scientific research, and the public sector has a deep history of working hand-in-hand with businesses to bring the fruits of this research to market, address market failures, provide needed expertise, or raise the capital for risky projects to bring them to completion. Without such partnerships, the stories of the transcontinental railroad, the aviation sector, and biotechnology industries would be dramatically different. Similar to these areas in the past, 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 attention to the need to sustain and foster these important DOE programs.

Sincerely,



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Kirsten E. Gillibrand

Shirley Brown

Jeffrey A. Mackay

Chuck Sch

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Carl Levin

B. J. Sanders

Brian Schatz

Al Franken

Bob Duff

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