

STATEMENT OF

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BEFORE THE

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Mr. Chairman, Ranking Member Tonko, and the esteemed Members of this Subcommittee, I want to thank you for inviting me to testify on behalf of the Advanced Research Projects Agency-Energy (ARPA-E) about our recent R&D activities, a recent report by the U.S. Government Accountability Office (GAO), and a report released in August 2011 by the U.S. Department of Energy Office of Inspector General (IG).

I am here to report to you on ARPA-E's activities and challenges. ARPA-E, which this Committee was integral in creating, is modeled after DARPA, which helped catalyze innovations for the Defense Department, such as the Internet, GPS, stealth-type technology, and many others. These innovations not only strengthened our national security but also our economic prosperity.

Today, we import a significant amount of the oil we use. Our children's and grandchildren's security is at stake, and that secure future is like a stool with three legs: national security, economic security, and environmental security. At the foundation of all three securities are innovations in energy technologies.

As you know, ARPA-E focuses exclusively on breakthrough energy technologies that promise genuine transformation in the ways we generate, store, distribute and utilize energy. ARPA-E looks to high impact research projects that the private sector is unlikely to invest in, but, if successful, could create the foundation for entirely new industries. As you may know, ARPA-E issued its fourth round of Funding Opportunity Announcements (FOAs) on April 20, 2011 and subsequently announced 60 cutting-edge research projects aimed at dramatically improving how the U.S. produces and uses energy. With over \$150 million from the Fiscal Year 2011 budget, the new ARPA-E projects focus on research on innovative energy technologies while increasing America's competitiveness in rare earth alternatives and breakthroughs in biofuels, thermal storage, grid controls, and solar power electronics. The projects selected are located across 25 states, with 50% of projects led by universities, 23% by small businesses, 12% by large businesses, 13% by national labs, and 2% by non-profits.

We are currently looking at new technologies and innovations in various areas. For example, we are holding technical workshops in the area of natural gas and its undeveloped, innovative, and

potentially transformational uses in the transportation sector. We are also gearing up for our third annual ARPA-E Energy Innovation Summit on February 27th-29th that will feature many of the country's energy thought leaders.

In implementing this program, which as you know had to be built from the ground up in the last three years, we have been grateful to have the assistance of overseers such as the Inspector General of DOE and the GAO. As we have ramped up our organization it is critical to have an outside perspective to be sure that our systems are being set up correctly and to identify areas where we can improve them to further minimize the occurrence of waste, fraud, and abuse. I am pleased to be joined by representatives from the DOE IG office and the GAO, and I would like to let you know how ARPA-E has responded to their oversight.

GAO

With regard to the GAO report, ARPA-E agrees with the GAO's finding that "most ARPA-E projects could not have been funded solely by private investors" and "venture capitalist[s] generally do not fund projects that ARPA-E looks to fund." GAO's review suggests that most ARPA-E projects could not and would not have been funded solely by private investors. Private venture capital firms told GAO that, among other considerations, they generally do not fund projects that rely on unproven technologies and tend to invest in projects that can be commercialized in less than 3 years. Importantly, GAO did not identify a single instance in which private investors would have funded an ARPA-E project within the same, accelerated timeframe (i.e. 3 years or less). This demonstrates that selected projects were appropriate and fulfilled a critical criterion and objective of the agency.

GAO notes on the cover page of the report that it identified "18 out of 121 award winners through ARPA-E's first three funding rounds that had received some prior private sector investment." This is not inconsistent with ARPA-E's mission to fund innovative ideas, and I would like to highlight GAO's findings with respect to those 18 award winners, which are found in Appendix IV to the Report:

- ARPA-E enabled about two-thirds of the 18 award winners "to develop prototypes or to prove basic technology concepts on more advanced ideas than their prior work."

- 7 of the 18 award winners received funding for “completely new research.”
 - 6 of the 18 award winners received funding for “major advancements to prior research.”
- ARPA-E enabled some of the awardees “to work on projects with outstanding scientific research questions which private investors would not have allowed.”
 - ARPA-E significantly accelerated the research and development timeframe for 5 of the 18 award winners.

ARPA-E also agrees with the GAO’s finding that “ARPA-E officials have taken steps to coordinate with other Department of Energy offices in advance of awarding funds.” ARPA-E actively engages with other DOE office and programs, federal agencies, national laboratories, industry, and academia to identify “white space” where a strategic infusion of funding would catalyze the development and deployment of transformational and disruptive energy technologies. ARPA-E uses world-class experts from government, industry, and academia to evaluate applications and assess the technical progress of its projects. In addition, ARPA-E participates in intra- and inter-departmental initiatives focused upon specific technology areas.

With regard to the three recommendations in the GAO report, ARPA-E has these comments:

- First, the report recommended that ARPA-E provide guidance with a sample to assist applicants in providing information on sources of private funding for proposed ARPA-E projects. ARPA-E will include a sample response in future funding opportunity announcements (FOAs) in order to assist applicants in providing information on sources of private funding for proposed ARPA-E projects.
- Second, the report recommended requiring that applicants provide letters or other forms of documentation from private investors that explain why investors are not willing to fund the projects proposed to ARPA-E. In future FOAs, ARPA-E will require applicants to explain why investors would not be willing to fund the projects proposed to ARPA-E and to include documentation of previous attempts to secure private funding if available.
- Third, the GAO report recommended using venture capital funding databases to help identify applicants with prior private investors and to help check information applicants provide on their applications. In the future, ARPA-E will make use of publicly available

information such as venture capital funding databases to help verify information provided by applicants in their applications.

IG

Concerning the IG report, ARPA-E is pleased to report that it has finalized the three policies referenced in the IG report. Specifically, ARPA-E has finalized its policies for the monitoring and oversight of awardees, allowable technology transfer and outreach activities expenses, and the process for project termination. ARPA-E also worked directly with the Department's Offices of Headquarters, Procurement, and General Counsel on various aspects of these policies, as recommended by the IG.

The DOE IG report questioned approximately \$40,000 in direct costs under two ARPA-E awards. Subsequently, DOE's Contracting Officer performed a thorough analysis of the questioned costs and found that 98% of the costs were allowable as "technology transfer and outreach" costs, consistent with ARPA-E's statutory requirement to spend 5% of appropriated funds on "technology transfer and outreach" activities.

Of the remainder (approximately \$1,700), ARPA-E had already denied some of the costs, and it has recovered the balance from the recipients on the rest.

I should note that when working with performers, ARPA-E reimburses only expenditures that are allowable under the Federal Acquisition Regulation (FAR). ARPA-E communicates directly with individual performers regarding any unallowable costs in an invoice and reviews invoices in accordance with its statutory mandate and the FAR.

Thank you again for your time, and I look forward to your questions.