

## THE ADVANCED RESEARCH PROJECTS AGENCY-ENERGY OVERVIEW

### ABOUT ARPA-E

The Advanced Research Projects Agency-Energy (ARPA-E) provides R&D funding for transformational ideas to create America's future energy technologies. ARPA-E focuses exclusively on early-stage technologies that could fundamentally change the way Americans get, use, and store energy.

ARPA-E funds innovative ideas from academia, private industry, national laboratories, start-up companies, and small businesses—providing project teams with an average award of \$2-3 million over several years. Every project team receives hands-on guidance to meet ambitious technical milestones that push the boundaries of energy innovation. ARPA-E's unique Technology-to-Market program also empowers project teams with business insight and strategies to accelerate their progression towards commercialization.

As of February 2021, ARPA-E has funded more than 1,000 energy technology projects across over 60 focused programs and open solicitations.

### ARPA-E HISTORY

In 2005, leaders from both parties in Congress asked the National Academies of Sciences, Engineering, and Medicine to identify concrete steps that federal policymakers could take to bolster U.S. competitiveness in science and technology as a means to help the United States prosper and stay secure in the 21st century. The Academies recommended that Congress establish an Advanced Research Projects Agency within the U.S. Department of Energy (DOE).

In 2007, Congress passed, and President George W. Bush signed into law, the America COMPETES Act, establishing ARPA-E. In 2009, Congress appropriated the new agency's first \$400 million in funding.

ARPA-E is modeled after the successful Defense Advanced Research Projects Agency (DARPA) in the Department of Defense (DOD), the agency credited with such innovations as GPS, the stealth fighter, and computer networking.

### ARPA-E ENERGY INNOVATION SUMMIT

The ARPA-E Energy Innovation Summit is the premiere U.S. energy technology innovation event. ARPA-E will host the **2021 ARPA-E Energy Innovation Summit** on **May 24-26**, at the **Gaylord National Convention Center** in **National Harbor, MD**. The 2019 Summit brought together nearly 1,700 thought-leaders from academia, business, and government to discuss cutting-edge energy issues and facilitate relationships to help transition technologies out of the lab. The Summit's main feature is the Technology Showcase—a 100,000 square foot hall that features nearly 300 exhibitors and displays next-generation energy technologies.

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"Pound for pound, dollar for dollar, it's hard to find a more effective thing government has done than ARPA-E."

-FedEX founder, chairman, president and CEO Fred Smith

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### ARPA-E'S UNIQUE PROCESS

ARPA-E actively manages its projects, positioning them so partners are likely to commit to the next stage of development once ARPA-E's funding period is over. ARPA-E advances its early-stage technologies toward the market with results-oriented handoff strategies:

- **New company formation**, which takes place when ARPA-E project teams at labs or universities "spin out" their work, can facilitate and expedite the commercialization process for technologies.
- **Patents and publications** generated by ARPA-E project teams help advance scientific understanding and technology innovation.
- **Follow-on investment** from private investors during or after an ARPA-E award can provide project teams with the strategic funding needed to advance their technologies.
- **Strategic partnerships** with private companies that can license, acquire, and buy technologies help project teams progress along a clear path to market after their time with ARPA-E.
- **Public funding** from other government agencies, including the DOD and other DOE agencies, can advance projects after ARPA-E's initial funding.

As of February 2021, 177 ARPA-E projects have attracted more than \$4.9 billion in private-sector follow-on funding. This does not include the \$3.5 billion in exit valuations from 13 mergers, acquisitions, and IPOS. In addition, 88 ARPA-E project teams have formed new companies to advance their technologies, and 237 ARPA-E projects have partnered with other government agencies for further development. Moreover, ARPA-E projects have generated 4,614 peer-reviewed journal articles, and 716 patents issued by the U.S. Patent and Trademark Office.