



# Congress should support clean energy research and development

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For the past couple of years, President Trump's federal budget proposal has called for the elimination of a crucial Department of Energy program — the Advanced Research Projects Agency-Energy ([ARPA-E](#)).

The agency's mission is to [fund high-risk/high-reward energy research](#) — that is, research that has transformative potential for the nation's economic and energy needs but that is deemed too expensive or too risky for energy companies to fund on their own. Congress, though, has wisely resisted the president's proposal, and continued to fund ARPA-E. But the White House has stubbornly proposed eliminating the program again this year.

Congress should hold firm, for four compelling reasons.

First, consider that this past April, for the first time in modern history, [renewable resources provided 23 percent of the total electricity generated in the United States](#), as compared to the 20 percent of electricity that coal-fired power plants provided. To be sure, this is a seasonal data point, reflecting a period during which the nation experienced neither record cold nor record hot days. Nevertheless, its significance should not be underestimated because it simply captures an ongoing trend of using more clean energy.

Second, consider ARPA-E's successes. The program was created by the [America COMPETES Act](#), signed into law by President George W. Bush in 2007. The agency received its first appropriation of \$400 million

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through the 2009 [American Recovery and Reinvestment Act](#), signed by President Obama. Since that time, Congress has appropriated between \$180 million and \$306 million annually to fund the agency for a wide variety of projects, including energy storage, efficient materials, clean carbon, efficient transportation, and renewable resources, as well as smarter, faster computing.

[According to its most recent 2018 assessment](#), since its founding, ARPA-E has provided \$1.8 billion in funding for more than 660 technology projects that have been awarded 245 patents. ARPA-E project teams have published 1,724 peer-reviewed journal articles that have been referred to by other authors 42,535 times. Significantly, 71 new companies have been formed and more than \$2.9 billion has been leveraged from the private sector.

Third, consider the market for clean energy investments and development. Globally, in 2018, [there were more than \\$310 billion worth of clean energy investments, with \\$60 billion of that made in the United States](#). Notably, \$13.3 trillion of energy investments are expected by 2050, with [77 percent directed to renewable resources](#).

And, fourth, consider the clean energy sector itself. By way of example, domestic and international projections indicate that the sector is experiencing:

- increasing use of renewables to generate electricity
- increasing energy efficiency that will keep consumption flat even as the economy expands
- declining costs for solar and wind power
- global establishment of renewable energy as a mainstream source of electricity

[Experts project](#) that the world will move from obtaining two-thirds of its energy from fossil fuels in 2018 to two-thirds zero-carbon energy by 2050.

Innovation has always been the backbone of economic growth. Sometimes, innovation results from the private ingenuity of people like Thomas Edison, Bill Gates and Steve Jobs. At other times, even good ideas cannot get by on their own, and they require government support.

The [Defense Advanced Research Projects Agency](#), ARPA-E's predecessor, was responsible for developing [ARPANET](#), now better known as the Internet. Similarly, the government developed the algorithms that are responsible for the search engines used by Google and for the GPS systems in all of our smartphones.

As Americans, we cheer on innovators and entrepreneurs. In the energy sector, however, government is responsible for the build-out of the electric grid, interstate connections of natural gas and oil pipelines, and the great dams and other public power projects throughout the country. More notably, the United States would have no commercial nuclear power industry without government backing.

For all of the contentious political talk about the [Green New Deal](#), that essential point about government funding cannot be ignored. Indeed, government support of the entire energy sector has been and continues to be pervasive.

Today, as we [transition to a clean energy future](#), continued congressional support for efforts like ARPA-E is both necessary and

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valuable for developing the technologies that will improve our daily lives  
and contribute to job creation, economic growth, and shared prosperity.

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