

5 REASONS ENERGY INNOVATION MATTERS

1. Decades of federal energy research laid the groundwork for many of the technologies we enjoy today

For example:



LITHIUM-ION BATTERIES (LIBs) –The Department of Energy grants aided the discovery of low-cost battery materials, enabling LIBs to commercialize, which now power everything from laptops to smart phones.



LED LIGHTING – DOE research produced more efficient and longer-lasting LED bulbs, which businesses have rapidly installed to take advantage of energy savings over existing light sources.



FUEL-EFFICIENT VEHICLES – DOE research yielded efficient tires, light-weighting technologies, and advanced engines, reducing the fuel needs of cars and trucks and saving consumers money.

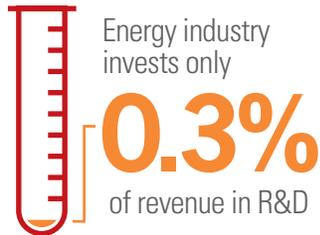
2. Federal energy research investments generate billions in economic returns for taxpayers

DOE was instrumental to developing hydraulic fracturing technology, which contributed [\\$430 billion](#) to U.S. GDP and supported 2.7 million jobs in 2014 alone.

**SUPPORTED
2.7M
JOBS IN 2014**

Forty years of DOE building efficiency research saved consumers [\\$22 billion](#) in energy costs.

3. The private sector underinvests in breakthrough energy research because energy projects are *expensive, time-intensive, and face high regulatory uncertainty relative to other industries*



The energy industry invests just [0.3 percent](#) of revenue in R&D, far less than the aerospace ([7.6 percent](#)), electronics ([10.6 percent](#)), and pharmaceutical industries ([20 percent](#))

4. Government fills a critical research investment gap in the energy sector, but federal energy R&D funding has declined in recent years

In FY2017, energy was just [4.5 percent](#) of federal nondefense R&D outlays, down from [14 to 20 percent](#) in the 1970s and 1980s, and 8 to 10 percent in the 1990s.



In FY2018, despite funding increases, DOE energy R&D funding is still [26 percent](#) below 1978 levels, when the agency was established.

5. The United States lags behind in energy innovation investment as global competition for advanced energy technologies accelerates

The United States now ranks [12th](#) in energy R&D investments as a percent of GDP.



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China is the [highest spender](#) on energy R&D as a share of GDP and has become the [largest destination](#) for energy investment worldwide.

BOTTOM LINE:

To stay competitive in the billion-dollar energy technology markets of tomorrow, the United States must strategically increase federal energy research investments. Why? Global energy demand is projected to grow a whopping [30 percent](#) by 2040. Advanced energy technologies will be needed to fill this demand, and without adequate investment, the United States risks ceding [billion-dollar](#) opportunities in these markets.

