

What is Revolution Now?

Revolution Now is an annually updated report produced by the Energy Department's Office of Energy Efficiency and Renewable Energy that documents the accelerated deployment of five clean energy technologies thriving in the U.S. market – wind turbines, solar technologies for both utility-scale and distributed photovoltaic (PV), electric vehicles (EVs) and light-emitting diodes (LEDs).

Revolution Now 2016 builds upon previous reports and describes the decreasing cost and increasing deployment of all five technologies in the United States since 2008.

Major Findings

- **A Big Piece of the Capacity Pie** – Wind and solar PV accounted for over two thirds of all new electricity generating capacity installed in the U.S. in 2015.
- **Hold On to Your Hats** – Land-based wind accounted for 41 percent of all new capacity brought online in the United States in 2015.
- **It Just Keeps Getting Bigger** – Utility-scale PV generated enough electricity in 2015 to power more than 2 million homes. It also represented 15 percent of all newly installed electricity generation capacity in 2015.
- **Million Dollar Listing** – More than 1 million distributed PV systems have been installed on American homes and businesses.
- **Shining Bright on A-Types** – Total installations of A-type LED bulbs exceeded 200 million through 2015 - growing 160 percent over 2014.
- **Cruise Control** – Total sales of electric vehicles has soared closer to the half million mark with 490,000 EVs on the road as of August 2016.

How Low Can They Go?

Thanks to decades of strategic investments by the Energy Department, these technologies have rapidly decreased in cost since 2008.



Notes: Land based wind costs are derived from levelized cost of energy from representative wind sites. Distributed PV cost is average residential installed cost. Utility-Scale PV cost is the median installed cost. Modeled battery costs are at high-volume production of battery systems, derived from DOE/UIS Advanced Battery Consortium PHEV Battery development projects. LED bulb costs are cost per lumen for A-type bulbs. See full report for full citations and details.

Clean Energy Technology Snapshot

LED Light Bulbs - Total installation of LED A-type bulbs exceeded 200 million in 2015 - growing 160 percent over 2014. According to the report, LED A-type bulb costs dropped by 94 percent since 2008. Projections show that increased installations could save Americans nearly \$630 billion in avoided energy costs between now and 2035. This is a direct result of government-industry research and development (R&D) investments to bring down costs, improve efficiency and performance, and foster domestic manufacturing of LED lighting components and products.

Wind Power - Between 1976 and 2014, the Energy Department invested \$2.4 billion in R&D allowing more cost-effective generation of electricity to expand wind's geographic potential. Wind capacity has tripled since 2008. Last year, wind power represented 41 percent of all new generating capacity built in the United States. In 2015, there were nearly 74,000 megawatts (MW) of utility-scale wind power deployed across 41 states – enough to power more than 17 million households. It also reduced annual carbon dioxide emissions by more than 132 million metric tons and reduced water consumption by more than 73 billion gallons.

Photovoltaic Power - The drastic drop in the cost of utility-scale solar PV—more than 64 percent since 2008—enabled growth to 15 percent of all new installed capacity in 2015. During this time, utility PV generated 23 billion kilowatt-hours—enough to power more than 2 million homes. To date, more than 1 million distributed solar PVs have been installed on American homes and businesses.

Electric Vehicles - As of August 2016, more than 490,000 EVs are on U.S. streets, making America one of the largest EV markets in the world. Today, there are more than 35,000 public and private charging outlets in the United States. Battery R&D investments, totaling \$1 billion between 1992 and 2012, have advanced the state-of-the-art performance by six years and created \$3.5 billion worth of economic value.

Revolution Next

Revolution Now also examines additional emerging technologies on the horizon including fuel cells, grid-connected batteries, energy management systems and big area additive manufacturing, commonly known as 3-D printing. It also provides updates on smart buildings systems, fuel-efficient freight trucks, and vehicle lightweighting.

The Energy Department continues to invest in research and development of these technologies, with a goal of addressing market barriers to ensure that they become even more cost-effective and widely available across the United States in the near future.

