



Wind turbines are used in distributed applications in all 50 states, Puerto Rico, and the U.S. Virgin Islands to provide energy locally, either serving on-site electricity needs or a local grid. This 100-kW Northern Power Systems wind turbine is installed at a recycling facility in Brooklyn, New York. *Photo credit: Aegis Renewable Energy*

U.S. Distributed Wind Capacity Nearing 1 GW

Distributed wind cumulative capacity has reached a total of 906 MW from nearly 74,000 wind turbines.

In 2014, 23 states added 63.6 MW of new distributed wind capacity, representing nearly 1,700 units and \$170 million in investment.

2014 a Mixed Year for Distributed Wind

The market for distributed wind systems using large-scale turbines (greater than 1 MW) showed signs of a recovery after low capacity additions in 2013.

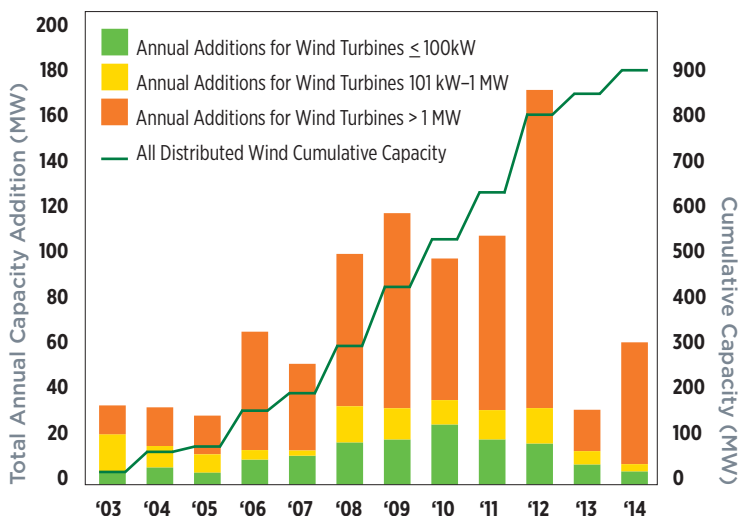
The markets for distributed wind systems using small and mid-size wind turbines, defined as up through 100 kW and 101 kW to 1 MW, respectively, continue to struggle since achieving strong sales in 2008 through 2012.

2014 Exports Buoy U.S. Small Wind Manufacturers

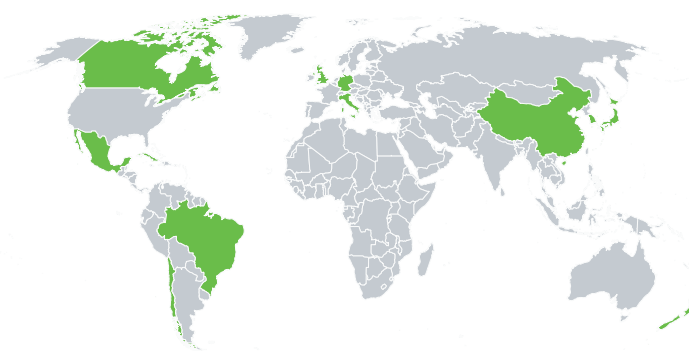
A strong export market for U.S.-manufactured small wind turbines supports domestic manufacturing and supply chain jobs across the country.

U.S.-based small wind turbine manufacturers claimed another strong year of exports to countries across the globe. Exports accounted for nearly 80% of the value of 2014 U.S.-based manufacturers' sales.

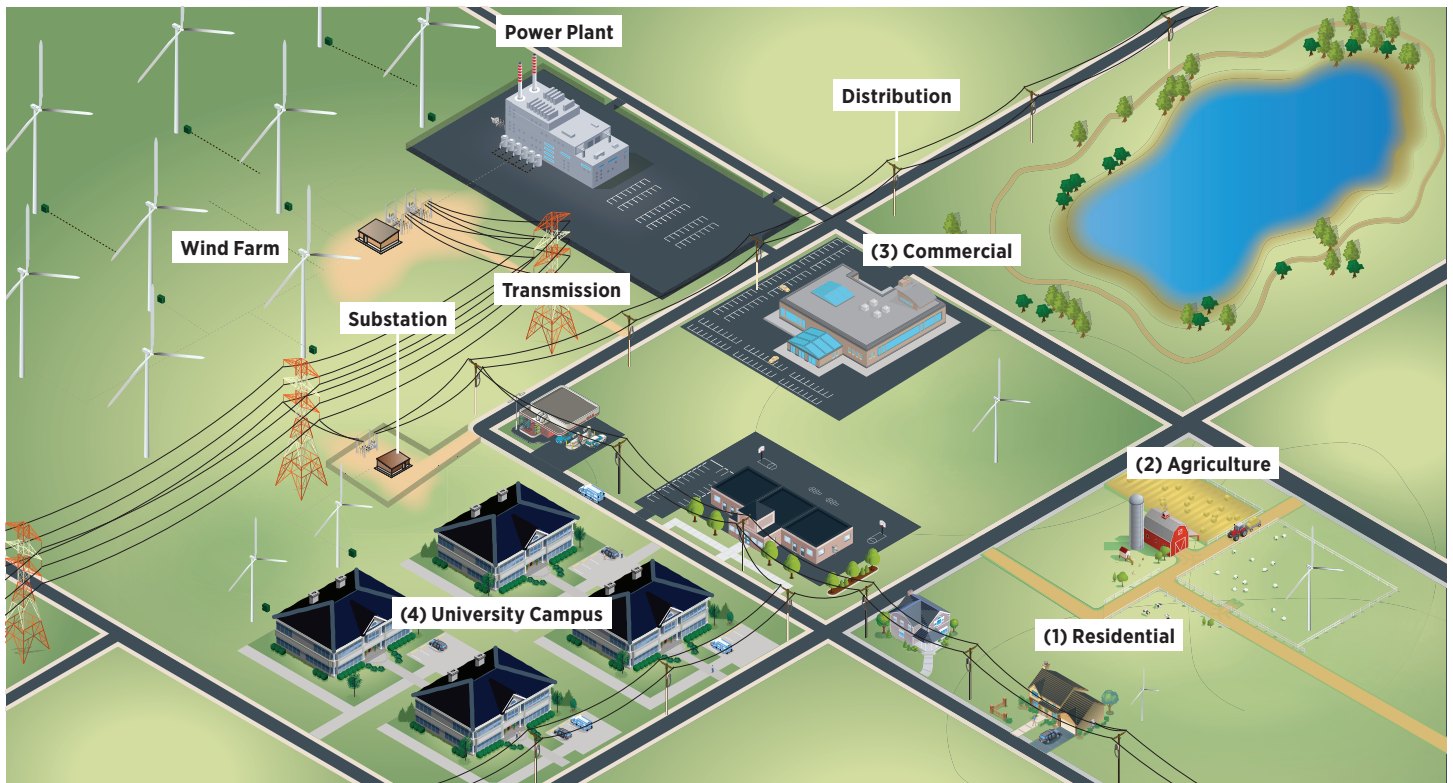
U.S. Distributed Wind Capacity



2014 U.S. Small Wind Export Markets



The total value of 2014 U.S. small wind exports was \$60 million and markets included Brazil, Canada, Chile, China, Germany, Grand Cayman, Italy, Japan, Korea, Mexico, New Zealand, UK, and Vietnam.



In contrast to energy generated at large wind farms that is sent via transmission lines to distant end-users, distributed wind energy systems produce electricity that is consumed on site. Distributed wind projects can be (1) a 5-kW turbine at a residence, (2) a 50-kW turbine at a farm or (3) commercial user, or multi-megawatt turbines at (4) a university campus. *Image credits: NREL/David Schulz*

Distributed wind experienced a mixed year in which only some sectors of the market saw growth in 2014. Installations of large scale turbines (greater than 1 MW) grew almost threefold to nearly 58 MW. Yet small and mid-size turbines saw a decline in deployments, adding only 3.7 MW and 2.4 MW, respectively.

The 3.7 MW of small wind turbine sales represent about 1,600 units and \$20 million in investment. This is down from 2013, in which the 5.6 MW from roughly 2,700 units resulted in \$36 million of investment.

The 2014 figures account for 15 small wind turbine manufacturers and suppliers with a U.S. sales presence, 11 of which are based in the United States. This is in comparison to the 32 small wind turbine companies who were included in the 2013 report.

With 11.2 MW of exported capacity, U.S.-based manufacturers of small wind turbines benefited from a strong global market in 2014. This export capacity is comparable with the 13.6 MW exported in 2013 and the third best year since 2003.

The average installed cost of newly manufactured small wind turbines deployed in the United States in both 2013 and 2014 varied by turbine size. For turbines less than 2.5 kW, the average cost was \$8,200/kW, for turbines 2.5 kW to 10 kW, the average cost was \$7,200/kW, and for turbines 11 kW to 100 kW, the average cost was \$6,000/kW.

State and federal policies and incentives play an important role in the development of distributed wind projects. Two prominent programs are the New York State Energy Research and Development

Authority (NYSERDA) On-Site Wind Turbine Incentive Program and the U.S. Department of Agriculture Rural Energy for American Program (REAP). NYSERDA funding was relatively stable from 2013 to 2014 with a total of 19 projects awarded approximately \$850,000 in funding in 2014, compared to \$1.1 million for 14 projects in 2013. In contrast, 2014 REAP grants were considerably lower than in previous years due to less funding being available in the last authorized year of the 2008 Farm Bill. A total of 15 wind projects in Iowa, Kansas, Minnesota, New York, and Texas received approximately \$400,000 in REAP grant awards in 2014, compared to the 25 projects that received \$1.2 million in REAP grant awards in 2013. Increased funding levels have been authorized for REAP by the 2014 Farm Bill that will be applied to grant awards starting in 2015. ■