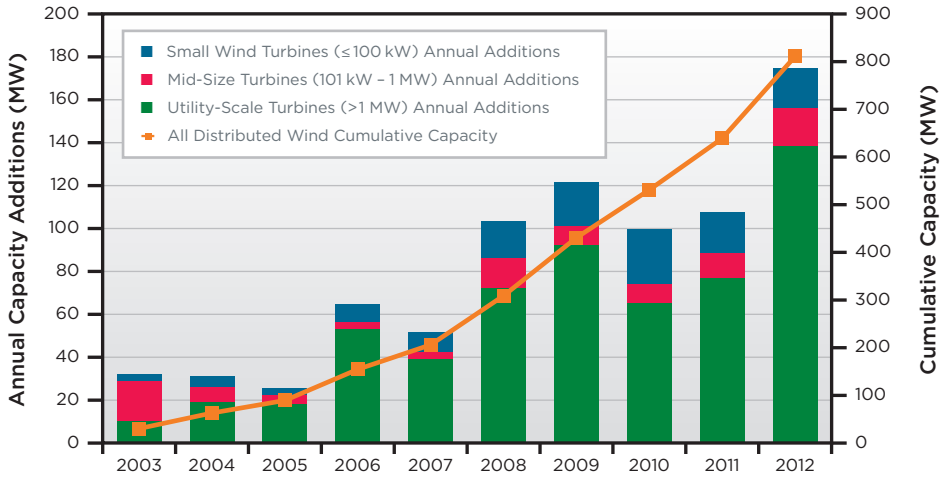
Factsheet: 2012 Distributed Wind Market Report

U.S. wind turbines in distributed applications—those that supply power to the local grid at residential, agricultural, commercial, industrial, and community sites—reached a 10-year cumulative installed capacity of more than 812 megawatts (MW) at year end 2012 (Figure 1), totaling more than 69,000 units across all 50 states.

Figure 1: **U.S. Distributed Wind Capacity by Sector**



What is Distributed Wind?

The U.S. Department of Energy Wind Program defines distributed wind in terms of technology application based on the wind plant's location relative to end-use and power distribution infrastructure, rather than turbine size. Wind systems are characterized as distributed based on their:

Proximity to End-Use: Wind turbines installed at or near the point of end-use for the purposes of meeting onsite load or supporting the operation of the distribution grid.

Point of Interconnection: Wind turbines connected on the customer side of the meter or directly to the distribution and micro grids.

During 2012, the overall **U.S. distributed wind market increased by 62%** from 2011 with 175 MW deployed, totaling nearly 3,800 wind turbines (Figure 2B) and representing more than $410 million in domestic investment.

Utility-scale wind turbines (above 1 MW) installed in distributed applications increased the most at 80%—**from 76.5 MW in 2011 to 138 MW in 2012**—followed by distributed "mid-size" wind turbines (101-1,000 kilowatts), which increased 49% **from 12.4 MW in 2011 to 18.5 MW in 2012**.

The U.S. market for small wind turbines (0.1-100 kilowatts) declined slightly from 2011 by 3% to **18.4 MW in 2012**, representing $101 million in investment and nearly 3,700 units sold. Seven U.S.-based suppliers of newly-manufactured and refurbished small wind turbines—reconditioned equipment emerging from California wind farm repowering—reported sales greater than 1 MW, up from four suppliers in 2011.

The average installed cost of newly manufactured U.S. small wind turbines in 2012 was $6,960/kW, up 15% from 2011.

Domestic sales capacity from U.S. small wind suppliers accounted for an **86%** share of the 2012 U.S. small wind market, up from 80% in 2011 (Figure 3). On a unit basis, U.S. suppliers claimed 91% of domestic small wind sales.

U.S. small wind turbine manufacturers exported 8 MW to foreign markets in 2012—primarily serving European feed-in tariffs, telecom and wind-diesel applications—representing 56% of newly manufactured U.S. small wind sales capacity. In terms of units, 55% of 2012 U.S. small wind turbines were exported, up from 41% in 2011.

Leading U.S.-based small wind turbine manufacturers continued favoring U.S. supply chain vendors for most of their turbine components, **maintaining domestic content levels of 80-85%**.

On a unit basis, **small wind turbines comprised 35% of all 2012 U.S. wind installations** and 95% of the distinct project locations.

Figure 2A:
Wind Turbine Sales in 2011 (Units)

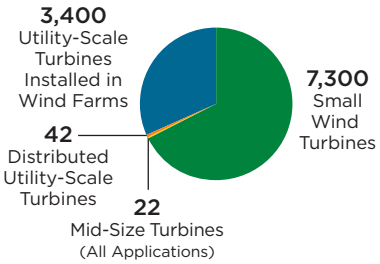


Figure 2B:
Wind Turbine Sales in 2012 (Units)

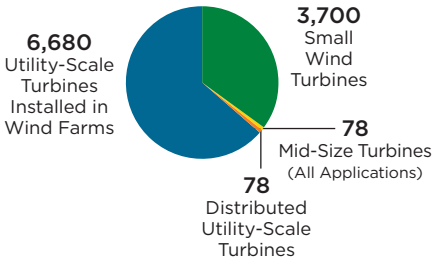
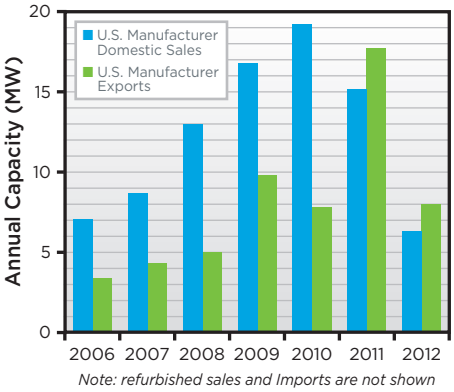


Figure 3:
U.S. Small Wind Manufacturer Sales



Note: refurbished sales and Imports are not shown

Figure 4A:
2012 U.S. Distributed Wind Capacity Additions

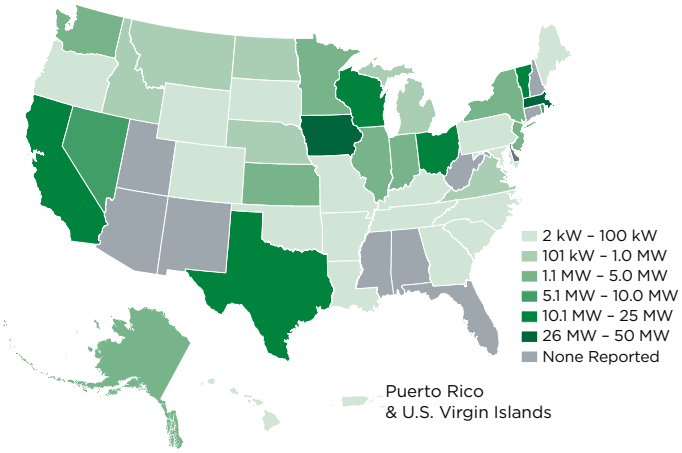
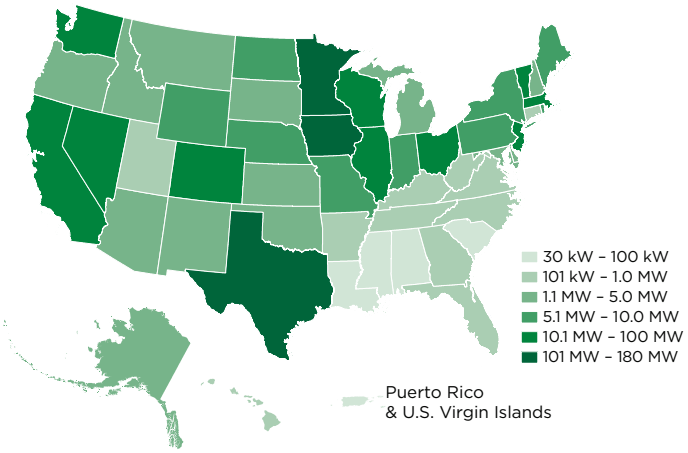


Figure 4B:
2003-2012 Cumulative U.S. Distributed Wind Capacity



Thirty-two small wind suppliers with a U.S. sales presence, including those from Europe, Canada, and South Africa, **reported sales of 74 wind turbine models worldwide** (57 models in the U.S.); 24% are rated less than 1 kW, 46% are rated 1-10 kW, and 30% are rated 11 kW to 100 kW (including 7 refurbished models). Global 2012 small wind sales from these 32 suppliers totaled $360 million, with more than 11,000 units and 54 MW.

The **average U.S. small wind turbine unit capacity nearly doubled**, from 2.6 kW in 2011 to 5 kW in 2012. Off-grid U.S. sales claimed just 5% of 2012 small wind capacity, down from 9% in 2011.

Nevada, Iowa, Minnesota, Alaska, and New York led the states in installing the most small wind capacity in 2012, followed by Kansas, Wisconsin, Ohio, Massachusetts and California. The top states for mid-size and utility-scale wind turbines in distributed applications over the past decade are **Texas, Minnesota, Iowa, Massachusetts, California**, Ohio, Illinois, Colorado, Wisconsin, and Washington.

While the federal 30% Investment Tax Credit remained an important financial incentive in 2012, the expiring **U.S. Treasury 1603 payments provided nearly $48 million** to 149 distributed wind projects installed in 2012, and the U.S. Department of Agriculture's **Rural Energy for America Program (REAP) funded 57 wind projects** with $2.6 million in grants and $1.4 million in loan guarantees.

With increased pressure on state budgets and federal stimulus dollars expended, **several states scaled back or eliminated small wind rebate programs**, with several shifting to production-based payments rather than capacity-based rebates.

New Expanded Distributed Wind Market Report and Policy Tool

The scope of the *2012 Market Report on U.S. Wind Technologies in Distributed Applications* has been expanded from past years' reports to include a finer breakdown of small wind statistics, more extensive statistics on mid-size turbines used in distributed applications, and new statistics on utility-scale turbines used in distributed applications. The full Market Report is expected to be published in Summer 2013 and available at wind.energy.gov/wind_dist_tech.html.

To further aid stakeholders in identifying the best financial environments for small wind and which existing and potential policy combinations have the most impact on improving project economics, the U.S. Department of Energy-funded **Distributed Wind Policy Comparison Tool** (windpolicytool.org) has been updated and enhanced.

Acknowledgments

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