



What does wind power  
mean for America?  
Wind takes U.S. further.

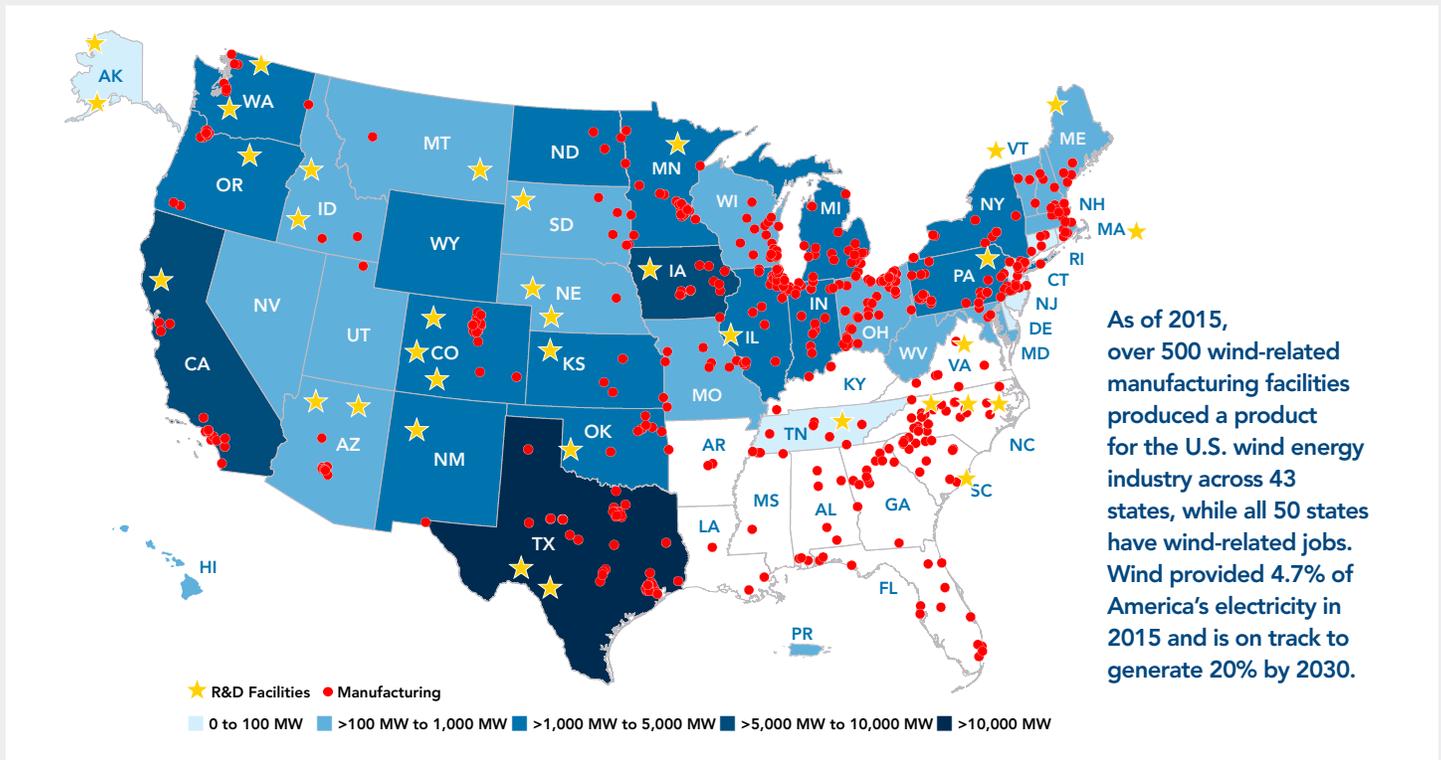
# Wind power is a good deal for America.

## That's why Americans want more of it.

America is a nation of innovation, ambition and opportunity.

We rise to meet challenges and come away stronger, safer and more competitive.

Our nation's growing demand for energy has unleashed the full measure of American vision and entrepreneurship. Wind power made in the USA is a clean, abundant and affordable part of our energy supply—and is bringing value to American consumers now.



"Wind energy can save you money. No longer is it just good for the environment, wind can be the most economical energy choice, too... And wind power purchased at firm prices will protect you from the uncertainty of rising fuel costs in the future."

Xcel Energy message on customers' electric bills

"Innovation and enterprise are working to harness our natural resources and producing clean electricity, creating good-paying jobs, boosting farm-lease receipts and growing the revenue base. Beyond the electrical power that we all rely upon for daily life, the wind industry employs 7,000 Iowans in 12 manufacturing facilities in the state."

U.S. Senator Charles Grassley (R-IA)

"We invest in renewable energy projects and purchase wind power for our operations, across states like Oklahoma and North Dakota.... Much of corporate America is buying renewable energy in some form or another, not just to be sustainable, but because it makes business sense, helping companies diversify their power supply, hedge against fuel risks, and support innovation in an increasingly cost-competitive way."

Eric Schmidt, Executive Chairman, Google

# Quality jobs and consumer savings

**American wind power saves consumers money.** Adding wind energy to the U.S. generation mix makes the energy market more competitive, increases energy security, and saves American homeowners and businesses money.

Because it has zero fuel costs, wind energy protects consumers from volatile fossil fuel prices, much like a fixed-rate mortgage protects homeowners from fluctuating interest rates.

**Over the last five years, wind has been one of the top two sources of new U.S. electric generating capacity.** There's now enough clean, affordable, American wind power to supply the equivalent of 20 million homes with electricity.

Wind power is a key vehicle on America's road to economic recovery. Wind energy has added a brand new manufacturing sector in the last decade with over 500 factories stretching across 43 states.

**American wind power now supports tens of thousands of well-paying jobs,** and is capable of growing to support many more. The U.S. Department of Energy has found that wind power could grow to supply 20 percent of the nation's

electricity by 2030 and support hundreds of thousands of American jobs.

**And wind energy is increasingly "made in the USA"** – a majority of a U.S. wind farm's value is now American made, further reducing costs by avoiding shipping so many of these large components from overseas.

Hands down, the American people support the development of clean, affordable, homegrown wind power. Polls have found that nearly nine out of 10 voters – Republicans, Democrats, and Independents – believe increasing the amount of energy the nation gets from wind is a good idea.

**That's because wind power doesn't just generate electricity.** It powers economic development. It offers a new source of steady income to family farmers and ranchers. It opens the doors of factories previously mothballed. It sends clean energy to our homes and businesses, while helping cushion families' and small businesses' budgets from skyrocketing fuel prices.

**No wonder Americans want more wind power.**



## Wind Worker Profile

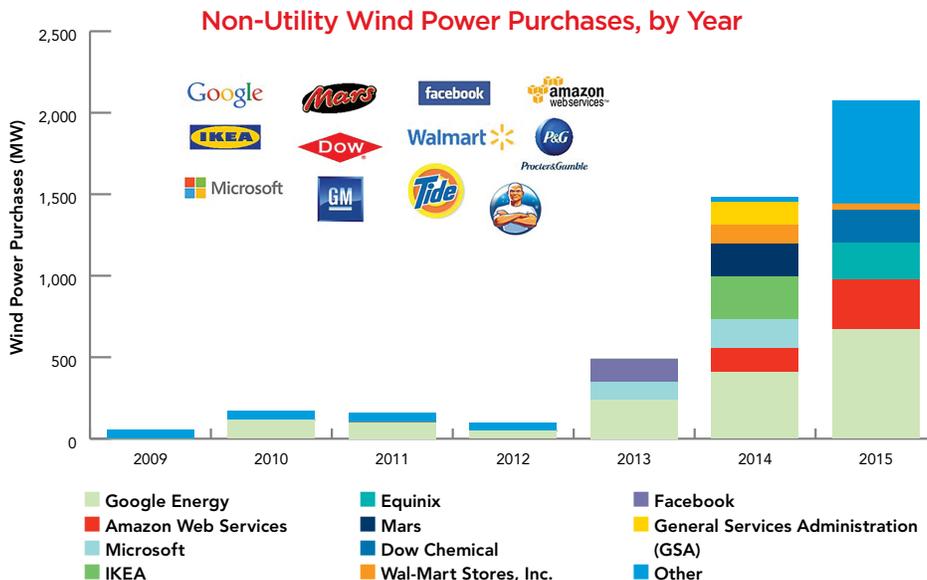
Bradford Simpson, Invenergy LLC  
Snyder, Texas

Brad Simpson joined leading wind energy generation company Invenergy after completing a career in the U.S. Air Force as a Master Sergeant. Stationed at bases both home and abroad, Brad completed tours of duty in Italy, Kuwait, and (British Territory) Diego Garcia. As Invenergy Services' Senior Regional Safety Manager, he helps protect the health and safety of wind technicians by ensuring their work environment, job duties, and protective equipment have been properly analyzed for hazard mitigation and elimination.

*"Veterans are a great fit for the wind industry," says Simpson. "Approximately one-quarter of our Invenergy Services team members have served in the armed forces.*

*"My job brings great responsibility, and I take my role seriously. I believe my military training and education prepared*

## Corporate buyers and other emerging wind energy customers



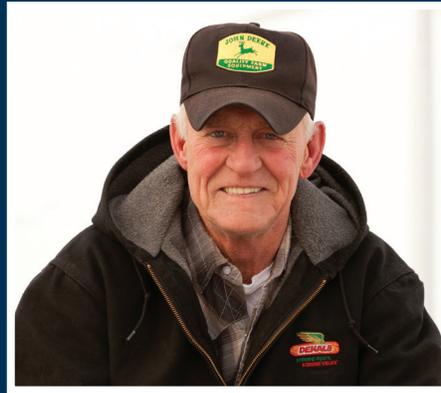
Major brands and other non-utility customers signed 52 percent of the wind power capacity contracted through power purchase agreements (PPA) in 2015. Customers driving this new demand for wind energy include Fortune 500 companies behind household brands, like Tide and Downy, high-tech companies, universities and major U.S. cities.

# A new cash crop

Wind power benefits rural America in more ways than one. Wind power production has breathed new life into American rural communities and helped conserve water supplies during times of persistent drought.

Driving much-needed private investments into rural areas, American wind power adds tens of billions of dollars a year to the U.S. economy. Farmers, ranchers and other landowners receive lease payments of approximately \$120,000 over a 20-year period for each wind turbine installed on their property. When wind power grows to supply 20 percent of America's electricity by 2030, payments to rural landowners will amount to more than \$600 million a year.

Wind power uses virtually no water in generating electricity, while most other types of power plants use substantial amounts, often in drought-stricken areas of the country. IN 2015, American wind power generation conserved more than 73 billion gallons of fresh water, or 226 gallons person.



*"I've farmed for 47 years and lived on this place for 43 years. The wind towers have really been a boon to this area. We raised 3,000 hogs, which was quite a few back then, but now that's nothing. It's like everything else, get big or get out. The wind towers gave us another \$20,000 a year in income. I just think they're fantastic. I wish the whole farm was covered with them."*

Tim Hemphill, corn and soybean farmer and wind farm leaseholder, Milford, IA

Wind energy brings taxes and other revenue to local communities, benefiting county and local services including schools, health care facilities and roads.

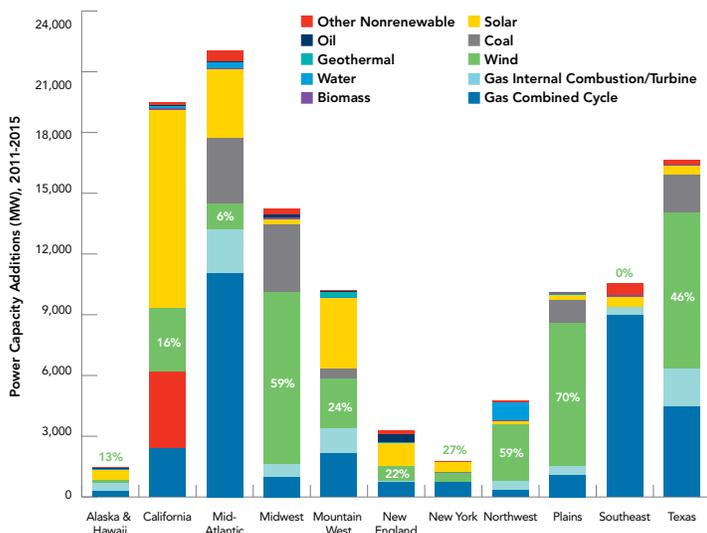
In Sherman County Oregon, every household actually received a \$590 check in the mail in 2011. Tax payments also helped fund essential public services, paid for additional sheriff's deputies, built a library, and helped the county emerge from the shadow of the economic recession.

*"Sherman County School District has benefited from wind power in a variety of ways. We are not in the budget crisis most districts have because we have resources from wind energy to prevent having to do cuts in our programs."*

Ivan Ritchie, school superintendent, Sherman County, OR

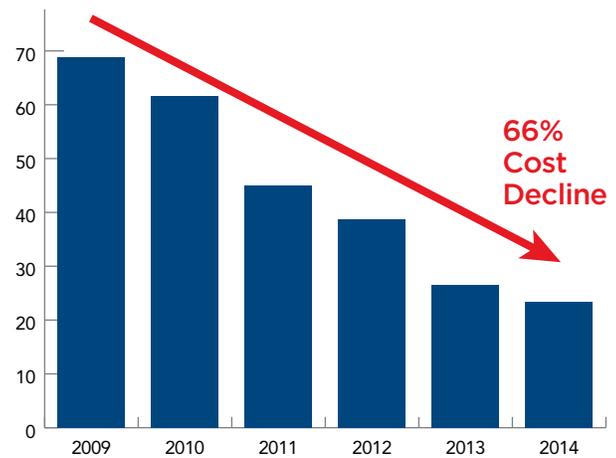
## U.S. Wind Energy: Growing and Cheaper Than Ever

U.S. Power Capacity Additions 2011 to 2015, by Region



The American wind industry continues to show record-breaking growth as a U.S. power provider. Wind energy produced nearly 5 percent of the nation's electricity in 2015, and has been one of the leading sources of new electric generating capacity during the last five years.

Average levelized price of wind PPAs



U.S. wind power costs 66 percent less than it did six years ago, with better technology, operations, and maintenance, and more domestic manufacturing. It now competes with natural gas in wind-rich areas of the country.

# Innovation + ingenuity = American wind power

The growing success of American wind energy production and component manufacturing shows the power of technological innovation. And wind energy's fixed-price advantage further enhances the industry's cost-competitiveness.

Tower heights are getting taller and blades are getting longer, allowing developers to access higher wind speeds and capture more energy in new areas such as the American Southeast, already a wind manufacturing hub.

Innovative wind industry manufacturing is now creating jobs in virtually every part of the nation. This includes wind-specific factories as well as many businesses that have diversified into supplying the wind industry.

It makes economic sense to manufacture such large, heavy objects close to where

they will be installed, thus saving on transportation costs. This geographic diversity, along with the array of U.S. factories now producing the 8,000 components that go into a wind turbine, have laid the groundwork for continued expansion of the U.S. wind power supply chain.

The wind industry is committed to an even more efficient and cost-effective future, with turbine manufacturers as well as component suppliers continuing to conduct advanced research and development on wind technology in dedicated facilities.

Predictable policies are critical to wind energy's achieving full cost-competitiveness with other forms of energy, as wind becomes ever more efficient and affordable.

# Best for the environment

Of all our energy sources, wind power has the lowest environmental impact of any utility-scale source of electricity, and reduces the threat of climate change – the greatest threat to wildlife.

Wind energy also has significant benefits over other sources of generation, as it emits no air or water pollution. It uses no water in the generation of electricity, and creates no hazardous or radioactive waste requiring long-term storage.

Since the only fuel wind turbines need is the wind itself, they avoid the environmental risks or degradation from fuel exploration, extraction, transport, shipment, processing, and waste disposal.

Even with its relatively low impacts, the wind industry has been built on a legacy of care and holds itself to a higher environmental standard, and does more to study, avoid, minimize, and mitigate wildlife impacts than any other industry. Resulting conservation programs by wind developers save habitat and help protect birds.

And, currently installed wind power will avoid nearly 132 million metric tons (nearly 145 million short tons) a year of carbon dioxide emissions, or a 6 percent reduction in overall power sector carbon dioxide emissions.

Wind energy also greatly reduces a variety of health-harming air pollutants, including smog-causing sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>), which helps reduce rates of asthma and other respiratory issues. Altogether the tons of SO<sub>2</sub> and NO<sub>x</sub> pollution avoided each year carry a public health value to Americans of over \$7.3 billion a year.

The combined benefits of wind energy make it more beneficial to humans and wildlife than other more traditional forms of energy production.

## Wind power by the numbers

Wind energy produces over 31 percent of the electricity in Iowa and over 20 percent in South Dakota and Kansas

Over 74,000 MW of wind capacity installed in the U.S., over 48,000 wind turbines

Over 500 manufacturing facilities in 43 states

Nearly 1,000 projects in 40 states plus Puerto Rico and Guam

Over \$128 billion in investment in last 10 years

88,000 quality, well-paying jobs (FTEs)

Over 73 billion gallons of fresh water conserved (2015), since wind energy uses virtually no water

100% pure, clean energy source

Wind turbine technician is the fastest growing profession in the U.S.



To learn more about wind power,  
or the benefits of AWEA membership, please visit  
**[www.awea.org](http://www.awea.org)**



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