

# Wind Power a Growing Force in Oil Country

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**T**exas, a state better known for oil production, is the nation's top producer of wind-generated electricity—an encouraging statistic for consumers seeking clean, renewable energy.

In fact, Texas' wind-generated electricity capacity has steadily grown since 2006 along with overall electricity consumption. A favorable regulatory environment and technological advances have contributed to investment in Texas wind power plants, which are concentrated in the often-windy West Texas and Panhandle areas.

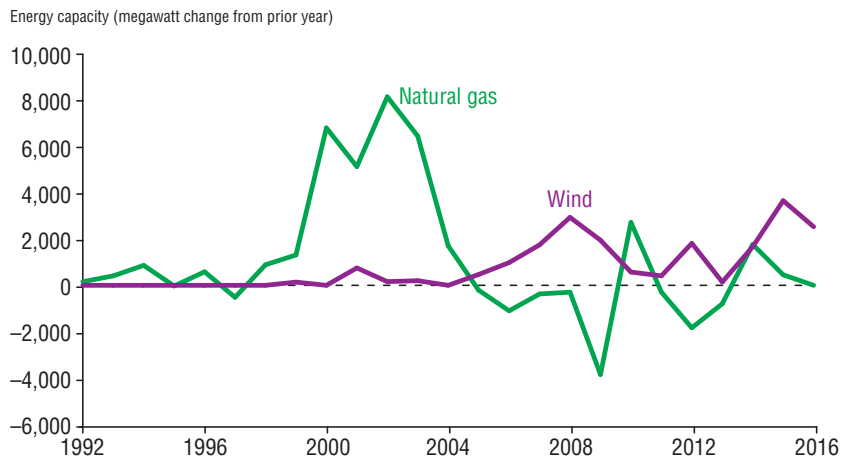
Rapid population growth, at close to twice the national rate, has driven electricity demand in Texas. In 2016, Texas generated 455 million megawatt-hours of electricity, amounting to 11 percent of the national total. The proportion of total electricity generated by wind in Texas rose 12 percentage points from 2006 to 2016, while the state's population increased 19 percent over the same period.

As a proportion of the electricity generated in Texas last year, 52 percent came from natural gas, 25 percent from coal and 13 percent from wind, the most rapidly growing source of power. Electricity from wind grew 763 percent from 2006 to 2016, compared with 748 percent in the rest of the country. Tax incentives are one reason for the rise.

## Tax Benefits

Provisions of the federal government's 1992 Energy Policy Act authorize tax credits for electricity generated from renewable sources. The act was the first legislation to incentivize renewable generation. The tax credit provision has been renewed multiple times since 1992, most recently in 2016. Other provisions included the investment tax credit, which provides cash grants toward the cost of building power plants devoted to renewable energy. Also, the state of Texas provides tax credit and rebate programs for renewable power plant generation.<sup>1</sup>

**Chart 1** Growth in Electricity Generation from Natural Gas Falls as Wind Expands



NOTES: 2016 values are based on estimations as of April 24, 2017.

SOURCES: U.S. Department of Energy from Global Energy Concepts and American Wind Energy Association; Federal Reserve Bank of Dallas.

The policy frameworks have incentivized investment in wind and solar instead of conventional hydrocarbon energy, such as coal or natural gas. But these measures are only part of the reason for the increased wind power generation. For example, wind turbines have fewer location restrictions than conventional power plants. The installations vary by size depending on location—anywhere from full-size turbines on farmland to community wind projects installed in residential or commercial areas. Meanwhile, natural gas and coal power plants have confronted significant regulatory and siting restrictions.

## Commodity Price Fluctuations

Also, the cost of commodities used in conventional power plants—principally oil and gas—can fluctuate significantly. For example, the price of natural gas briefly soared and then collapsed in 2005 due to Hurricane Katrina. Energy generation capacity from natural gas has declined since 2005 (*see chart*). There was a similar price-fluctuation episode after the 2008–09 recession. Even with low

prices since 2008, natural gas plants have been unable to consistently boost production capacity. By comparison, wind power capacity has never declined.

Additionally, Texas is an ideal place for inland turbines. The west central U.S. is one of the regions measured to have the fastest wind speeds in North America. The wind speed in West Texas and the Panhandle is higher than in any other region, providing favorable locations for turbines. According to the Department of Energy's Wind Program, Texas has the highest potential wind power capacity in the U.S. at around 1.3 million megawatts, followed by Montana at around 0.7 million megawatts.

Still, wind power is not a universal solution to mounting power demands. For example, along the East Coast, given lower potential wind capacity and the extremely high demand for electricity during winter, wind plants may not be as feasible an option.

## Note

<sup>1</sup> Information on state-specific programs can be found at [www.dsireusa.org](http://www.dsireusa.org).