



## Renewable Energy



### The Issue

Wind, water, biomass, and the sun are the oldest energy sources used by mankind. The inherent limitations of these sources motivated people to seek more efficient and reliable fuels to power society.

The peak use of windmills was in the 1930s and 1940s. Farmers stopped using them because rural electrification provided electric power far more reliable and often less expensive than wind. Yet today, we are turning back to this expensive and inefficient energy source because of government mandates and subsidies, which are driving up electricity costs for Texas consumers.

In 1999, Texas adopted a Renewable Portfolio Standard mandating that the state's competitive electric providers buy a minimum 2,000 MW of qualifying energy by 2009. In 2005, the Texas Legislature increased the RPS to 10,000 MW by 2025. Texas met the RPS target for installed wind capacity in 2010, a full 15 years ahead of schedule. Subsidies from the RPS flow to generators through renewable energy credits (RECs).

In addition to the Texas' RPS, generous federal subsidies and favorable wind conditions in the vast open plains of west Texas have encouraged wind production. In fact, the federal tax credits for renewable energy may be the driving force behind the rapid growth of Texas' wind generation; when the federal credits briefly lapsed, new wind installation in Texas dried up, despite the fact that no change had been made in Texas' RPS.

Texas' wind farms are concentrated in the panhandle region. While this makes sense insofar as this is where there is the most wind to capture, this area is far from the focus of Texas' electrical demand, which lies along the I-35 corridor. The long distance of wind generation from population centers has led to large subsidies through the construction of the Competitive Renewable Energy Zone (CREZ) transmission lines. The CREZ lines are Texas' largest subsidy for renewable energy. The cost to build the CREZ lines will be directly added to the bill of every electric consumer in ERCOT.

The total cost of subsidies for wind is tremendous, estimated to be about \$13 billion for the 10-year period 2006-15. The CREZ lines cost about \$6.8 billion, the federal PTC about \$4.1 billion, and the state's RECs about \$560 million. All of these costs are borne by citizens in their roles of consumers or taxpayers.

For wind and solar power, the difference between installed capacity and actual net generation is often substantial, because of the intermittent nature of those energy sources (the sun doesn't shine at night or when it is cloudy, and the wind does not blow hard enough or often enough to utilize a turbine's full capacity).

In addition, wind tends to blow hardest at night and during off peak months, when there is less overall demand, and not as much during the high demand summer months. For these reasons, ERCOT estimates that actual net generation for wind power in Texas is about 12% of installed capacity for non-coastal wind and 55% for coastal wind.

Another major cost of wind is the integration of renewables into the electrical grid. Because they are intermittent, use of wind and solar power requires continual back-up generation to replace this electricity on the grid at a moment's notice. Typically natural gas-fired generating units are used in an interruptible mode similar to idling a car. The cost of back-up generation is a hidden and wasteful cost of renewable energy.

A major problem with all of these costs is that they are not paid for by the investors in wind generation—as in the case of generation from traditional sources, and thus traditional market incentives cannot operate.

## The Facts

- Subsidies for renewable energy in Texas totaled about \$13 billion for the 10-year period 2006-15.
- Subsidies for CREZ lines ran about \$6.8 billion, the federal PTC about \$4.1 billion, and the state's RECs about \$560 million.
- The Texas Renewable Portfolio Standard (RPS) mandates 10,000 MW of renewable capacity by 2025, of which 500 MW must be from non-wind sources.
- The backup generation and grid-related costs of wind energy could increase ERCOT's system production costs by \$1.82 billion per year.

## Recommendations

- Make compliance with the Renewable Portfolio Standard voluntary.
- Support elimination of the federal production tax credit.
- Require all electrical generators to meet the same standards, including renewable energy sources.
- Eliminate the 50% natural gas mandate.

## Resources

[\*The Broken Promise of Renewable Energy Subsidies\*](#) by Kathleen Hunker (Nov. 2013).

[\*Setting the Record Straight on Renewable Energy Subsidies\*](#) by Bill Peacock (Feb. 2013).

[\*The Cost of the Production Tax Credit and Renewable Energy Subsidies in Texas\*](#) by Bill Peacock and Josiah Neeley (Nov. 2012).

[\*Texas Wind Energy: Past, Present, and Future\*](#) by Drew Thornley, Texas Public Policy Foundation (May 2010).

[\*Learning from Others' Mistakes: What Europe's Experience with Renewable Mandates and Subsidies Can Teach Texas\*](#) by Josiah Neeley, Texas Public Policy Foundation (Feb. 2012).

