



## Renewable Energy

### Profile and Trends in Colorado

Colorado has the resources to become one of the top 10 clean energy-producing states in the nation. Colorado's combination of high mountains and broad plains adds up to a bounty of renewable resources. Although wind power is especially abundant, electricity generated in Colorado comes primarily from fossil fuels, with over 83% produced from coal. Home to the National Renewable Energy Laboratory (NREL), Colorado is also a leader in renewable energy research and development.

Colorado voters have become the first in the nation to vote on and pass a statewide renewable energy requirement. Amendment 37 will require Colorado's top utility companies to provide a percentage of their retail electricity sales from renewable resources beginning with three percent by 2007, six percent by 2011 and increasing to 10 percent by 2015.

### National Renewable Energy Laboratory (NREL)

Located in Golden, Colorado, NREL is the nation's leading center for renewable energy research. NREL develops new energy technologies to benefit both the environment and the economy. Its mission is to lead the nation toward a sustainable energy future by developing renewable energy technologies, improving energy efficiency, advancing related science and engineering and facilitating commercialization.

### Solar

Colorado has over 300 days of sunshine per year providing the opportunity for growth in sale and installation of solar photovoltaic (PV) and solar thermal energy systems for business, residential and community buildings. The electricity generation potential is estimated to be 83 million MWh/yr.

### Wind Resources

Colorado has excellent wind resources with an estimated six million acres of windy lands, particularly on the eastern plains. There are two large-scale wind developments on line: 30 MW at the Ponnequin Wind Farm near the Wyoming border, and 30 MW at the Peetz Table Wind Farm near Sterling. Additionally, there are hundreds of good sites for small-scale applications throughout the state. The electricity generation potential is estimated to be 601 million MWh/yr.

### Biomass

With significant agricultural operations, Colorado is a good candidate for increased use of biomass fuels, especially those that do not require large amounts of water to produce. The state already produces specialized motor oils from sunflower seeds, canola, and soybean oil. Ethanol is made with corn, canola, other grains and waste beer in Colorado. The Colorado Office of Energy Management and Conservation has been working with Colorado Pork, LLC on a demonstration project to generate electricity using methane produced by hog farming.

### Fuel Cells and Hydrogen

Colorado has formed the Colorado Energy Research Institute (CERI), involving Colorado School of Mines, Colorado Office of Energy Management and Conservation and Gas Technology Institute, to conduct advanced research in hydrogen and fuel cell technologies. CERI is expected to impact the economy by attracting additional research funding and could result in new spin-off companies establishing in the state.