

ELECTRIC COOPERATIVES AND ALTERNATIVE ENERGY

a snapshot



Electric cooperatives are private, independent electric utilities, owned by the consumers they serve. This local connection has led electric co-ops to establish themselves as leaders in developing and offering alternative energy programs for their consumer-owners.

Locally owned and operated distribution cooperatives deliver reliable, affordable electricity to consumers. Generation and transmission cooperatives (G&Ts) generate and transmit electricity to their member distribution co-ops. Today there are 864 distribution and 66 G&T cooperatives serving 40 million people in 47 states, or 12 percent of the U.S. population, in 80 percent of the nation's 3,100 counties.

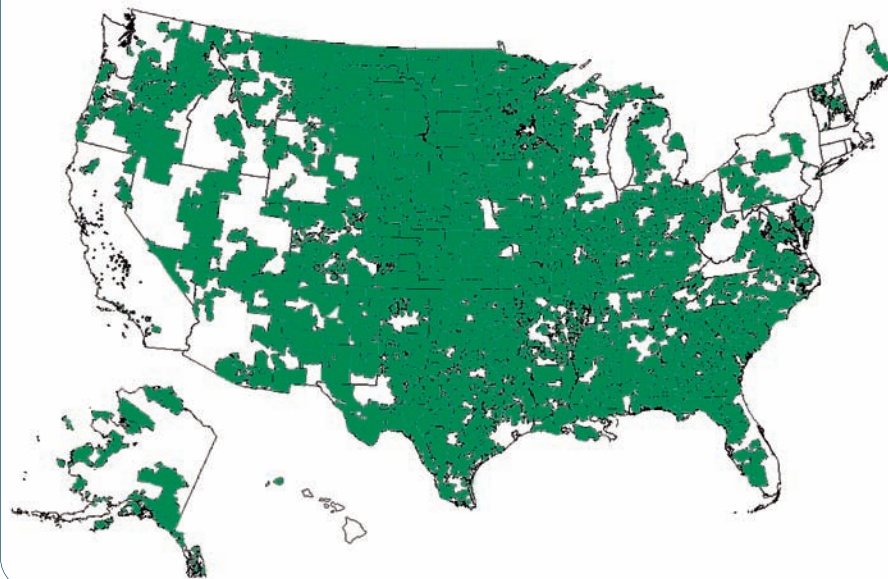
To fulfill their mission, electric co-ops:

- own assets worth \$92 billion
- own and maintain 2.4 million miles, or 43%, of the nation's electric distribution lines, spanning three quarters of the nation's landmass
- serve an average of 7 customers per mile of line, while investor-owned power companies average 35 customers per mile of line, and publicly owned or municipal utilities average 47 customers per mile of line
- deliver 10 percent of the total kilowatt hours (kWh) sold in the U.S. each year
- generate 5 percent of the total electricity produced in the U.S. each year
- employ 65,000 people in the United States, and
- pay more than \$1 billion in state and local taxes

COMMITMENT TO COMMUNITY AND THE ENVIRONMENT

While electric cooperatives own and operate some of the nation's cleanest and most modern generating facilities, they continue to explore new technologies and fuel sources to control and reduce emissions. Distributed generation technologies, such as fuel cells, and renewable resources like wind, sun, and biomass (landfill methane gas, wood waste, farm by-products, and ethanol) offer generation alternatives that promise economic as well as environmental benefits for residential and business consumers alike, especially those in rural areas.

Land Mass Served by Electric Cooperatives



Electric co-ops have expanded their non-hydroelectric renewable generation capacity to more than 120 megawatts (MW) and look to add more capacity during 2006. They purchased more than 500,000 megawatt hours of energy from renewable resources operated by various developers in 2004. Currently, 550 co-ops offer renewable energy options allowing consumers to buy green power from solar, wind, hydroelectric, and biomass generation. As a result, electric cooperatives hold a significant share of the green power market in terms of customer participation.

In 2006, the Department of Energy's National Renewable Energy Laboratory (NREL) included five co-ops in its annual Green Power Top Ten list. The five co-ops ranked were Basin Electric Power, Bismarck, N.D.; Holy Cross Energy, Glenwood Springs, Colo.; Central Electric Co-op, Redmond, Ore.; Western Farmers Electric Co-op, Anadarko, Okla.; and Wabash Valley Power Association, Indianapolis, Ind.

In addition, the newly enacted Clean Renewable Energy Bond (CREB) program provides a long-sought incentive that will lead to the development of a significant number of new cooperative-owned renewable energy generation projects. A CREB is a special type of bond, known as a "tax credit bond," which offers cooperatives the equivalent of an interest-free loan for financing qualified renewable energy projects for a limited term.

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WIND ENERGY

Basin Electric Power Cooperative, a G&T system with headquarters in Bismarck, N.D., made a long-term commitment with FPL Energy in Juno Beach, Fla., to buy 80 megawatts of capacity from FPL's wind farms in North Dakota and South Dakota. Basin Electric also operates two wind projects near Chamberlain, S.D., and Minot, N.D. Basin markets the power through the PrairieWinds program in conjunction with member cooperatives, East River Electric Power Cooperative, Madison, S.D., and Central Power Electric Cooperative, Minot, N.D. In addition to purchasing 100 percent of the capacity of two other wind turbines near Rosebud, S.D., and Pipestone, M.N., Basin Electric has contracted to purchase all of the generation from the three Dakota wind farms owned and operated by FPL Energy. Through joint projects and purchase agreements, Basin Electric Power Cooperative has added approximately 136 megawatts of wind energy to its energy portfolio. Basin Electric delivers wholesale power to its 121 member cooperatives in nine states.

Electric co-ops in Illinois and Missouri are also leaders in installing wind generation. In May 2005, Illinois Rural Electric Co-op based in Winchester, Ill. was the first in the state to install wind capacity, completing a 1.65 MW turbine—sufficient to power some 500 homes. In Missouri, electric cooperatives are spearheading an effort to build Missouri's first wind energy farm near King City, Mo. The project includes 24 wind-powered generators with the potential to generate 50 MW of power, enough to meet the needs of 15,000 to 30,000 homes for a year. Springfield, Mo.-based Associated Electric Cooperative, which generates most of the power used by co-op members in Missouri, agreed to purchase the entire output of the project for 20 years.

BIOMASS ENERGY

Biomass energy includes landfill methane gas, wood waste, farm by-products, and ethanol. Of these resources, landfill methane gas is particularly promising for electric cooperatives.

Great River Energy, a G&T in Elk River, Minn., owns and operates a 40 MW waste-to-energy power plant at Elk River Station. This is the largest renewable energy source that co-ops own and operate right now. The state of the art plant helps reduce the amount of waste entering Minnesota's landfills by more than 300,000 tons each year.

The leadership of the National Rural Electric Cooperative Association, a service organization representing electric co-ops across the country, recently joined the Agriculture Energy Work Group, a project sponsored by the non-partisan initiative Energy



Future Coalition. The group invited agricultural leaders to provide strategic leadership in exploring how agriculture and forestry sectors can contribute to new energy solutions. Their bold vision includes supplying 25 percent of America's energy needs by the year 2025, using resources from farms, ranches, and forests. Energy from biomass is one of the most promising options for this goal. According to the Coalition, transportation fuels from biomass, such as wood and agricultural residues, could displace 25 to 30 percent of U.S. petroleum imports, significantly reducing America's energy dependence on foreign fuel sources.

FUEL CELL ENERGY

The Cooperative Research Network (CRN) will soon conclude its Residential Fuel Cell Demonstration Program. As part of this project, CRN brought industry and electric co-ops together to evaluate fuel cells and share information. Currently, two co-op locations in New York State, including a cooperative housing building in New York City, are running tests of a 5 kilowatt (kW) fuel cell. This residential fuel cell demonstration program follows up on CRN's ground breaking demonstration project with commercial-grade fuel cells, which included a three-year national tour of a 200-kW mobile fuel cell that accumulated more than 20,000 hours of operation at three highly diverse co-op sites.

SOLAR ENERGY

In Texas, electric co-ops have adapted solar power systems to provide electricity for stock wells located in remote areas. Four co-ops have installed 65 solar electric systems that generate more than 30 kW of capacity. Of the 75 electric cooperatives in the state, 57 have given their consumers the option to buy electricity through photovoltaic power programs, and several cooperatives have consumers on waiting lists.