

Xcel Energy, Inc.

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Xcel Energy is a major electric and natural gas company, with nearly 11,000 employees and annual revenues of \$10.3 billion. Based in Minneapolis, Xcel operates in eight western and midwestern states and provides energy-related products and services to 3.4 million electricity customers and 1.9 million natural gas customers. Xcel's service area includes portions of Colorado, Michigan, Minnesota, New Mexico, North Dakota, South Dakota, Texas, and Wisconsin. Subsidiary companies include Northern States Power Company, Southwestern Public Service Company, and Public Service Company of Colorado.

Xcel Energy produces electricity from coal, natural gas, wind, sunlight, falling water, waste materials, and uranium. Xcel also buys electricity from federal power agencies and private producers. In Colorado, the nature of Xcel's energy mix is determined by the dispatch center in Denver, the first stop on the 2011 EMFI tour.

Xcel's two nuclear power plants are located in Minnesota, one near Monticello and one near Red Wing. Xcel also owns the Fort St. Vrain Station, a former nuclear power plant located about 37 miles from Denver. Beginning in 1989, the plant was adapted to burn natural gas in combined-cycle gas turbines, which tripled the plant's capacity to 965 megawatts (MW).

Ten percent of Xcel's generation comes from renewable resources: solar, wind, hydro, and biomass. Xcel purchases electricity from two plants in Minnesota that burn forestry residues and from another Minnesota plant that processes turkey litter. Xcel has three plants in Minnesota and Wisconsin that produce electricity from *refuse derived fuel* (RDF), which is obtained by processing municipal solid waste. Xcel's plant in Ashland, Wisconsin, produces electricity from coal, natural gas, and petroleum coke (a low-value byproduct of oil refining) in combination with waste wood, railroad ties, and tires.

Xcel is the nation's largest provider of electricity from wind, with over 3,000 MW of wind-powered generating capacity in place in its eight-state service area at the end of 2010. Today, wind energy represents nine percent of Xcel's energy mix and by 2020 the company projects it will be about 20 percent.

In Colorado, Xcel owns the Ponnequin Wind Farm, located due north of Denver, east of I-25, slightly south of the Wyoming border. Xcel owns and operates 37 of the 44 turbines. Equipment includes 29 NEG Micron turbines and 15 Vestas turbines. Each NEG Micron measures 181 feet from ground level to the hub of the rotor blade. The blades are 159 feet in diameter, and the turbine can produce up to 750 kilowatts (kW). Each Vestas unit measures 213 feet from ground to the hub of the blade, which is 154 feet in diameter. Each unit can produce up to 660 kW. Ponnequin's total capacity is 30 MW. The power is sold through Xcel's *Windsource* program, which allows customers in Colorado, Minnesota, New Mexico, and Wisconsin to encourage development of renewable energy by paying a voluntary subsidy for 100 kilowatt-hour blocks of electricity. About 75,500 customers participate.

Xcel Energy was ranked as seventh in the nation in total solar electricity capacity in 2010. Through the *Solar*Rewards* program, a voluntary program that offers rebates to customers who install solar systems on their own sites, Xcel acquired over 25 MW of on-site solar generation from homes and business in Colorado. The company will also purchase the power from a 8.2 MW central solar power plant located in southern Colorado near the town of Alamosa and is in the process of contracting for up to 600 MW of additional concentrating solar power.

In addition to wind and solar, Xcel operates 26 hydroelectric power plants in Wisconsin, Minnesota, and Colorado, which combined generate more than 500 MW. In Colorado, Xcel operates six hydro plants with a total capacity of

240 MW. The EMFI bus will pass close to three of these:

- **Georgetown Hydro**, at the town of Georgetown about 45 miles west of Denver, began operating in 1906 and is open to the public as an energy museum. Its two generators can produce a total of 1.2 MW. It normally operates as a run-of-the-river plant, but for three months out of the year, additional water is spilled from nearby reservoirs.
- **Cabin Creek Station** is a pumped hydro peaking facility located about five miles from Georgetown, at an elevation of 10,018 feet. It was built between 1964 and 1967. It sits between an upper water-storage reservoir and a lower reservoir. When

electricity demand surges in Xcel's system, water is allowed to fall from the upper reservoir to the lower reservoir through two 150 MW generators. The power generated is then fed to the grid. When demand is low and stable, the generated energy is used to pump water from the lower reservoir back to the upper reservoir, to await the next demand surge.

- **Shoshone Hydro** is located on the Colorado River, along I-70 in Glenwood Canyon. A dam several miles upstream impounds river water and sends it downhill through pipes to the plant's two generators, which are capable of producing a total of 15 MW. Water is then returned to the Colorado River. The plant began operating in 1909.



Xcel's Valmont Station near Boulder, Colorado
Total Capacity 229 MW:
186 MW Coal-Fired Steam Unit plus
43 MW Gas-Fired Combustion Turbine



Ponnequin Wind Farm
Capacity 30 MW



Georgetown Hydro
Capacity 1.2 MW



Cabin Creek Station
Capacity 300 MW



Shoshone Hydro
Capacity 15 MW