

Nuclear Energy in Minnesota

July 2009

Minnesota's Electricity Generation

Nuclear	23.9%
Coal	59.7%
Oil	0.2%
Gas	4.5%
Hydro	1.2%
Renewable and Other	10.5%

Source: U.S. Energy Information Administration (EIA), 2008



Nuclear Power Plants in the State

	City	Capacity (MW)	2008 Generation (MWh)	2006-2008 3-year Average Capacity Factor (%)
Monticello	Monticello	572	4,878,016	94.0
Prairie Island 1	Red Wing	551	4,059,457	87.0
Prairie Island 2	Red Wing	545	4,059,365	87.4
Total		1,668	12,996,838	89.5

Source: EIA

Clean Air and Economic Benefits

Economic Growth and Emission-Free Electricity

Minnesota has experienced an average growth in gross state product of 1.2 percent per year over the past five years. To keep Minnesota's economy growing, the state will need new sources of power. Emission-free sources, like nuclear power plants, supply safe, reliable and affordable power to meet the state's economic growth without polluting the air.

Nuclear Energy Prevents Emissions

Generating electricity with nuclear energy prevents the emission of pollutants like sulfur dioxide (SO₂) and nitrogen oxides (NO_x) and greenhouse gases like CO₂ associated with burning fossil fuels. The nuclear power plants in Minnesota avoided the emission of 42,300 tons of SO₂, 21,800 tons of NO_x and 13.6 million metric tons of CO₂ in the year 2008 (Source: NEI/EPA). Emissions of SO₂ lead to the formation of acid rain. NO_x is a key precursor of both ground-level ozone and smog. Greenhouse gases like CO₂ contribute to global warming.

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For perspective, the 21,800 tons of NO_x avoided by the nuclear power plants in Minnesota is the amount of NO_x released in a year by 1.1 million passenger cars. There are 2.6 million cars registered in the state of Minnesota.

Potential Uprates at Nuclear Plants

With additional capital investment, more emission-free power can be generated at most existing nuclear power plants. This process of increasing power output capacity is called an “uprate.” According to an analysis performed for the U.S. Department of Energy, uprates at Minnesota’s nuclear power plants could supply ten percent more electricity and avoid annual emissions of 2,700 tons of SO₂, 2,000 tons of NO_x and 1.3 million metric tons of CO₂.

New Nuclear Plants

The U.S. Energy Information Administration predicts that demand for energy will grow 21 percent by the year 2030. To meet this growing electricity demand in a manner that is

cost effective and protects our air quality, energy companies are planning to build nuclear power plants to provide affordable electricity to consumers and prevent greenhouse gases.

Economic Growth & Job Creation

Nuclear energy is one of the few bright spots in the U.S. economy because it creates more high-paying jobs than other sources of electricity and helps stimulate the economy. On average, a nuclear power plant creates 1,400-1,800 high-paying jobs during construction, with peak employment estimated as high as 2,400 jobs during that period, and yields 400-700 jobs during the operation of the plant. Additionally, the average nuclear plant generates approximately \$430 million a year in total output for the local community and nearly \$40 million per year in total labor income.

This fact sheet is available at www.nei.org, where it is updated periodically.