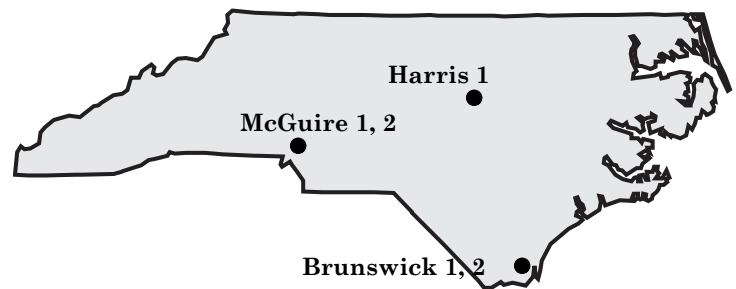


## Nuclear Energy in North Carolina

July 2009

### North Carolina's Electricity Generation

Nuclear	31.5%
Coal	60.7%
Oil	0.3%
Gas	3.3%
Hydro	2.7%
Renewable and Other	1.5%



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 (%)
Brunswick 1	Southport	938	7,030,632	89.5
Brunswick 2	Southport	937	7,854,238	90.7
McGuire 1	Cornelius	1,100	8,356,730	89.8
McGuire 2	Cornelius	1,100	8,713,269	93.7
Shearon Harris 1	New Hill	900	7,821,411	94.0
<b>Total</b>		<b>4,975</b>	<b>39,776,280</b>	<b>91.5</b>

Source: EIA

### Clean Air and Economic Benefits

#### Economic Growth and Emission-Free Electricity

North Carolina has experienced an average growth in gross state product of 2.3 percent per year over the past five years. To keep North Carolina's economy growing, the state will need new sources of power. At the same time, parts of North Carolina must deal with poor air quality. Emission-free sources, like nuclear power plants, supply safe, reliable and affordable power to meet the state's economic growth without polluting the air.

#### Status of the State's Air Quality

Central and western areas of North Carolina, including Hickory, Charlotte, and Greensboro, are in nonattainment for the U.S. Environmental Protection Agency's new eight-hour ozone standard. Ozone contributes to smog, which can lead to asthma attacks and respiratory impairment in young children and the elderly. North Carolina's nuclear power plants supply emission-free power to the whole state and help improve the air quality.

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# Nuclear Energy in North Carolina

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## ***Nuclear Energy Prevents Emissions***

Generating electricity with nuclear energy prevents the emission of pollutants like sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) and greenhouse gases like CO<sub>2</sub> associated with burning fossil fuels. The nuclear power plants in North Carolina avoided the emission of 129,500 tons of SO<sub>2</sub>, 38,600 tons of NO<sub>x</sub> and 38.9 million metric tons of CO<sub>2</sub> in the year 2008 (*Source: NEI/EPA*). Emissions of SO<sub>2</sub> lead to the formation of acid rain. NO<sub>x</sub> is a key precursor of both ground-level ozone and smog. Greenhouse gases like CO<sub>2</sub> contribute to global warming.

For perspective, the 38,600 tons of NO<sub>x</sub> avoided by the nuclear power plants in North Carolina is the amount of NO<sub>x</sub> released in a year by 2 million passenger cars. There are 3.6 million cars registered in the state of North Carolina.

## ***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 North Carolina’s nuclear power plants could supply 3 percent more electricity and avoid annual emissions of 2,500 tons of SO<sub>2</sub>, 700 tons of NO<sub>x</sub> and 860,000 metric tons of CO<sub>2</sub>.

## ***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. In North Carolina, Progress Energy has filed a license application with the U.S. Nuclear Regulatory Commission to build two reactors in Wake County. Duke Energy is planning to build at least one additional reactor

in Davie County. Upon completion, the plants will provide enough electricity to serve 2.6 million homes annually.

## ***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.

Three new nuclear industry projects are currently planned in North Carolina. Toshiba will open its national project management and engineering center in Mecklenburg County, investing \$2.8 million. The company sells the advanced boiling water reactor to be constructed in the United States and provides engineering, licensing, construction management, maintenance and other services for nuclear power plants. Westinghouse is expanding its Charlotte-based workforce to focus on balance-of-plant engineering, boiling water reactor instrumentation, control system development and project execution. GE Hitachi Nuclear Energy is investing \$704 million to expand its 1,600-acre campus near Wilmington. The company is adding new manufacturing, training, simulation, and testing facilities. The project also could include a commercial uranium-enrichment facility that would use a new laser process. These three projects will create an estimated 1,200 new jobs.

*This fact sheet is available at [www.nei.org](http://www.nei.org), where it is updated periodically.*