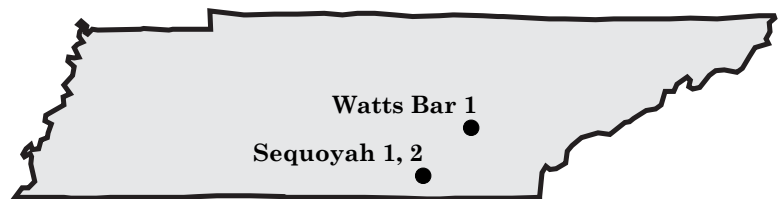


## Nuclear Energy in Tennessee

July 2009

### Tennessee's Electricity Generation

Nuclear	29.6%
Coal	62.6%
Oil	0.3%
Gas	0.5%
Hydro	6.1%
Renewable and Other	1.0%



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



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### Nuclear Power Plants in the State

	City	Capacity (MW)	2008 Generation (MWh)	2006-2008 3-year Average Capacity Factor (%)
Sequoyah 1	Soddy Daisy	1,148	10,164,801	92.6
Sequoyah 2	Soddy Daisy	1,126	8,752,507	93.0
Watts Bar 1	Spring City	1,123	8,112,309	84.2
<b>Total</b>		<b>3,397</b>	<b>27,029,617</b>	<b>89.9</b>

Source: EIA

### Clean Air and Economic Benefits

#### *Economic Growth and Emission-Free Electricity*

Tennessee has experienced an average growth in gross state product of 1.3 percent per year over the past five years. To keep Tennessee's economy growing, the state will need new sources of power. At the same time, parts of Tennessee must deal with poor air quality. Electricity from emission-free sources, like nuclear power plants, supplies safe, reliable and affordable power to meet the state's economic growth without polluting the air.

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

Counties that make up the Chattanooga, Memphis and Knoxville areas 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. Smog also reduces visibility in cities and in rural landmarks like Center Hill Lake and the Great Smoky Mountains National Park. Tennessee's nuclear power plants supply emission-free power to the state and help improve air quality.

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# Nuclear Energy in Tennessee

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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. In 2008, the nuclear power plants in Tennessee avoided the emissions of 93,100 tons of SO<sub>2</sub>, 41,900 tons of NO<sub>x</sub> and 26 million metric tons of CO<sub>2</sub> into the air (*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, 41,900 tons of NO<sub>x</sub>, which is a precursor to ground-level ozone, is the amount released every year into the air by 2.2 million passenger cars. There are about 3 million cars registered in the state of Tennessee.

## ***Potential Uprates at Nuclear Plants***

With additional capital investment, more power can be generated at most existing nuclear power plants. This process of increasing power output is called an “uprate.” According to analysis performed for the U.S. Department of Energy, uprates at Tennessee’s nuclear power plants could supply 5 percent more electricity, and avoid annual emissions of 2,800 tons of SO<sub>2</sub>, 800 tons of NO<sub>x</sub> and 1 million 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.

## ***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.

In addition, one new nuclear project is in development in Tennessee. Alstom is building a new manufacturing facility in Chattanooga, Tenn., to manufacture steam turbines for fossil and nuclear plants, gas turbines, generators and related equipment. The project represents an investment of more than \$200 million and will create approximately 350 new jobs.

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