FACT SHEET

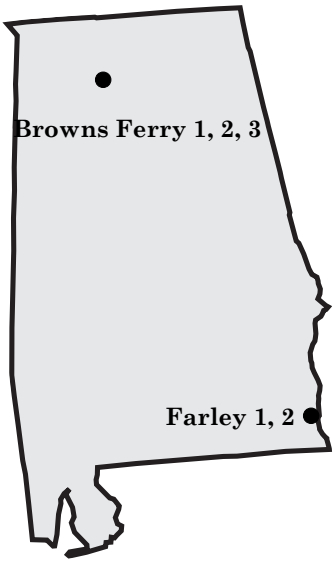
# Nuclear Energy in Alabama

*July 2009*

## Alabama's Electricity Generation

| | |
|---|---|
| **Nuclear** | 26.7% |
| **Coal** | 51.1% |
| **Oil** | 0.1% |
| **Gas** | 15.2% |
| **Hydro** | 4.4% |
| **Renewable and Other** | 2.5% |

*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 (%) |
|---|---|---|---|---|
| **Browns Ferry 1** | **Athens** | 1,065 | 8,190,739 | 45.4 |
| **Browns Ferry 2** | **Athens** | 1,104 | 9,429,917 | 89.7 |
| **Browns Ferry 3** | **Athens** | 1,105 | 7,298,760 | 85.6 |
| **Joseph M. Farley 1** | **Houston County** | 851 | 7,278,989 | 90.3 |
| **Joseph M. Farley 2** | **Houston County** | 860 | 6,794,236 | 92.8 |
| **Total** | | **4,985** | **38,992,641** | **80.8** |

*Source: EIA*

## Clean Air and Economic Benefits

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

Alabama has experienced an average growth in gross state product of 1.4 percent per year over the past five years. To keep Alabama's economy growing, the state will need new sources of power. At the same time, parts of Alabama 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 in nonattainment for the U.S. Environmental Protection Agency's particulate matter (PM) 2.5 standard include Jackson, Jefferson, Shelby and Walker, which make up the Birmingham and Chattanooga, Tenn. areas. PM 2.5 can lead to asthma attacks and respiratory impairment in young children and the elderly. The Browns Ferry and Farley nuclear power plants supply emission-free power to Alabama and help improve the air quality.

# Nuclear Energy in Alabama



***Nuclear Energy Prevents Emissions***
Generating electricity with nuclear energy prevents the emission of pollutants like sulfur dioxide ($SO_2$) and nitrogen oxides ($NO_x$) and greenhouse gases like $CO_2$ associated with burning fossil fuels. The nuclear power plants in Alabama avoided the emission of 150,000 tons of $SO_2$, 55,000 tons of $NO_x$ and 36.1 million metric tons of $CO_2$ in the year 2008 *(Source: NEI/EPA)*. Emissions of $SO_2$ lead to the formation of acid rain. $NO_x$ is a key precursor of both ground-level ozone and smog. Greenhouse gases like $CO_2$ contribute to global warming.

For perspective, 55,000 tons of $NO_x$, which is a precursor to ground-level ozone, is the amount released every year into the air by 2.8 million passenger cars. There are only 1.9 million cars registered in the state of Alabama.

***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 Alabama's nuclear power plants could supply 4 percent more electricity and avoid annual emissions of 3,500 tons of $SO_2$, 1,000 tons of $NO_x$ and 1.2 million metric tons of $CO_2$.

***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 Alabama, TVA has filed a license application with the U.S. Nuclear Regulatory Commission to build two reactors in Jackson County. Upon completion, the plants will provide enough electricity to serve 1.6 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.

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