

## Nuclear Energy in Arizona

July 2009

### Arizona's Electricity Generation

Nuclear	24.5%
Coal	36.8%
Oil	0.0%
Gas	32.3%
Hydro	6.2%
Renewable and Other	0.1%

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 (%)
<b>Palo Verde 1</b>	Phoenix	1,311	9,953,180	68.6
<b>Palo Verde 2</b>	Phoenix	1,314	8,596,600	85.0
<b>Palo Verde 3</b>	Phoenix	1,247	10,673,234	82.3
<b>Total</b>		<b>3,872</b>	<b>29,223,014</b>	<b>78.6</b>

Source: EIA

### Clean Air and Economic Benefits

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

Arizona has experienced an average growth in gross state product of 3.3 percent per year over the past five years. To keep Arizona's economy growing, the state will need new sources of power. At the same time, parts of Arizona 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*

Parts of both Maricopa and Pinal counties 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. Palo Verde supplies emission-free power to Arizona and helps improve the air quality.

SUITE 400  
1776 I STREET, NW  
WASHINGTON, DC  
20006-3708  
202.739.8000  
www.nei.org

# **Nuclear Energy in Arizona**

*Page 2 of 2 – July 2009*

## ***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 Arizona avoided the emission of 16,000 tons of SO<sub>2</sub>, 34,000 tons of NO<sub>x</sub> and 21.3 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 34,000 tons of NO<sub>x</sub> avoided by the nuclear power plants in Arizona is the amount of NO<sub>x</sub> released in a year by 1.7 million passenger cars. There are 2.2 million cars registered in the state of Arizona.

## ***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 Palo Verde could supply 1 percent more electricity and avoid annual emissions of 185 tons of SO<sub>2</sub>, 400 tons of NO<sub>x</sub> and 290,000 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.

## ***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](http://www.nei.org), where it is updated periodically.*