

Nuclear Energy

Background

Since 1970, the inflation-adjusted average cost of energy from all sources in Alabama has risen 152 percent. In 1970, the average cost of 1 million BTUs was \$1.37 (\$7.60 in 2008 dollars); in 2008, it was \$19.21.ⁱ

From 1970 to 2008, the inflation-adjusted cost of energy from petroleum products—e.g., gasoline and residential fuel oil—increased 111 percent from \$11.54 per 1 million BTUs to \$24.41. The cost of natural gas increased at an even sharper rate, going from \$2.89 per 1 million BTUs in 1970 to \$11.23 in 2008—a jump of 289 percent.

Two bright spots in Alabama’s energy market are nuclear power and biomass. Since 1970, the cost of 1 million BTUs of energy from biomass has fallen 56 percent, from \$7.16 to 3.11 in 2008, making it cheaper than natural gas and petroleum, but more expensive than coal (\$2.80 per 1 million BTUs in 2008). Nuclear power has also remained cheap; the inflation-adjusted cost for 1 million BTUs of nuclear energy fell from 53 cents in 1974 to 47 cents in 2008, a 12 percent decline.

While the costs of these two energy sources have fallen, their contributions to the power market in Alabama are vastly different.ⁱⁱ Although biomass has become more affordable in the last decade, its contribution to power generation in the state remains at less than one half of one percent. By comparison, nuclear power has become cheaper and its market share has increased almost 270 percent since 1974, even though no nuclear power plants have begun commercial operation in Alabama since 1981. In fact, Alabama is seventh in the nation in nuclear energy generation.ⁱⁱⁱ

ISSUE SNAPSHOT

To expand safe nuclear power generation in the United States, the nation should adopt the American Energy Act.

Alabama’s utility companies should continue to invest in expanding nuclear power.

For every gigawatt hour of electricity produced, nuclear power plants produce only 17 tons of CO₂. By comparison, coal emits 1,041 tons of CO₂, natural gas emits 622 tons, solar power emits 39 tons, and hydroelectric power emits 18 tons.

Policy Consideration

Nuclear power is enjoying a renaissance across the country for several reasons:

- According to the Energy Information Administration, the demand for electricity in the United States is expected to increase by 26 percent from 2007 to 2030. To meet this demand, hundreds of thousands of megawatts of new generating capacity—hundreds of new power plants will be needed.^{iv}

Given the environmental benefits of nuclear power, impending high demands for electricity, the recent rise in fossil fuel prices, and the still-nascent contributions of alternative energy, nuclear power likely will become an ever-larger player in the nation’s energy market.

GUIDE TO THE ISSUES

Recommendation

To expand safe nuclear power generation in the United States, the nation should adopt the American Energy Act^v, which would do the following:

- Cut the current four-year waiting period for a new nuclear power plant permit in half. In addition to taking less time, the process should also cost less and be more predictable.
- Direct the Nuclear Regulatory Commission (NRC) to develop a certification schedule for new, innovative reactor designs.
- Create a National Nuclear Energy Council, which would develop a comprehensive policy on nuclear energy issues.
- Redirect some funds spent on spent nuclear fuel disposal to nuclear fuel recycling.^{vi}

At the same time, Alabama's utility companies should continue to invest in expanding nuclear power. Efforts are already underway to continue construction on the TVA's Bellefonte plant in Hollywood, Alabama. Another 15 license applications have been made since 2007 to build 24 new nuclear reactors nationwide, the first of which are expected to come on line by 2018.^{vii}

Further Reading

- H. Sterling Burnett and James Franko, "Nuclear Power and the U.S. Energy Future." National Center for Policy Analysis Brief Analysis No. 683, December 30, 2009. Available at <http://tinyurl.com/47vot6r>.
- Jack Spencer, "The American Energy Act Puts Nuclear on the Fast Track," Heritage Foundation, June 10, 2009, <http://tinyurl.com/mtgbtn>.

^{vi} Energy Information Administration, "Energy Price and Expenditure Estimates by Source, Selected Years, 1970-2008, Alabama." Available at <http://tinyurl.com/4efyzxc>. Access verified January 18, 2011.

^{vi} Energy Information Administration, "Electric Power Sector Consumption Estimates, Selected Years, 1960-2008, Alabama." Available at <http://tinyurl.com/62f4an4>. Access verified January 18, 2011.

^{vi} Energy Information Administration, "Alabama Quick Facts." January 13, 2011. Available at <http://tinyurl.com/4gxrub8>. Access verified January 18, 2011.

^{vi} *Ibid.*

^{vi} Jack Spencer, "The American Energy Act Puts Nuclear on the Fast Track." Heritage Foundation *Web Memo #2477*, June 10, 2009. Available at <http://tinyurl.com/mtgbtn>. Access verified January 18, 2011

^{vi} *Ibid.*

^{vi} World Nuclear Association, "Nuclear Power in the USA." December 28, 2010. Available at <http://tinyurl.com/rxtj7u>. Access verified January 18, 2011.

^{vi} H. Sterling Burnett and James Franko, "Nuclear Power and the U.S. Energy Future." National Center for Policy Analysis *Brief Analysis* No. 683, December 30, 2009. Available at <http://tinyurl.com/47vot6r>. Access verified January 18, 2011.