



## Commentary

### Nuclear Power Re-energized in Georgia

By Sean Wilson

As Georgia continues to grow and thrive, it needs power generation capable of sustaining that growth. But the options seem to be shrinking among the body politic for varying environmental, economic and aesthetic reasons.

Opponents cite environmental objections to coal, an abundant, reliable source that generates more than half the nation's energy and now, thanks to technological advances, is 70 percent cleaner. Hydropower remains a miniscule part of the solution amid ongoing interstate disputes over water allocation and the state's water shortages. Many people think wind power is fine – as long as the invasive windmills are in someone else's backyard. Unfortunately, Georgia's short on sustained winds. Natural gas is used largely for peak power production because it's a costly alternative. Finally, while solar power is becoming more cost-effective, the technology has yet to reach the economies of scale needed to make it a viable large-scale alternative.

Then there's nuclear power. The industry is governed by an enormously expensive and dense regulatory and security framework designed to safeguard the general public. Since the 1978 accident at Three Mile Island and the 2001 terrorist attacks, regulations and licensing have grown increasingly stringent. Despite the advances in safety and security, no new units have begun construction since 1973. Abroad, especially in France and Japan, nuclear energy has flourished.

Now, however, several factors favor a nuclear renaissance. The first is President Bush's approval of the Energy Policy Act of 2005, which includes significant incentives for the industry to expand output:

- Up to \$2 billion in cost-overrun support for a maximum of six new plants
- Production tax credit of 1.8 cents per kilowatt-hour (up to \$125 million total per year) during the first eight years of operation for the first six megawatts (MW) of capacity \$3 billion in research subsidies
- 20-year extension of liability caps for accidents
- Federal loan guarantees for new plant construction

Furthermore, in recent years the Nuclear Regulatory Commission (NRC) has streamlined its licensing processes. No longer can endless appeals and challenges from organizations such as Greenpeace hold up plants indefinitely. A \$917 million 2008 budget for the NRC supports new reactor design and project implementation. Then, there are fading memories of Three Mile Island, state incentives for new projects (10 reactors are slated for Texas alone), and popular concern with climate issues.

Georgia currently has two nuclear power plants: Vogtle and Hatch. Hatch's two units produce about 8 percent of Georgia's electricity, while Vogtle's two units produce about 15 percent of Georgia's electricity.

Now Southern Nuclear – a subsidiary of Southern Co. that runs the Georgia plants – has applied to construct two additional units at Plant Vogtle. Georgia Power signed an agreement in April to procure two new reactors designed by a Westinghouse/Shaw Group consortium, making it the first agreement for new nuclear development since Three Mile Island (pending approval by the Georgia Public Service Commission). If all goes well, construction may begin as early as 2010, with power flowing to Georgians in 2015.

The reactor design approved by the NRC in 2005, each AP1000 is a pressurized water reactor capable of producing a net 1,117 MW. (The two units will nearly double the plant's generation capability). The advanced safety systems utilize what is known as passive protection: Gravity and natural recirculation cool the system, eliminating the need for active pumps, which can fail or break. The relatively simple (for a nuclear reactor) design makes the AP1000 cheaper; it is less expensive to build, operate and maintain. And the footprint is smaller.

A generation ago, the nuclear industry was demonized by environmentalists as “the child of mass destruction, the spawner of waste that will remain dangerous for millennia.” Today, environmentalists such as Patrick Moore (Greenpeace founder) see nuclear power as part of the solution to the greenhouse effect. The nuclear industry has been adding to its “green” credentials by including eco-friendly designs and initiatives. Vogtle's Web site, for example, notes: “Vogtle has been certified by The Wildlife Habitat Council since 1993 for wildlife enhancement and conservation efforts.”

The industry remains enormously expensive relative to coal and notorious for cost overruns: Vogtle's original estimate was \$975 million for four reactors; for various reasons, the final price tag was about \$9 billion for two reactors. This time around, there is hope that things may be different. The AP1000 is designed to be ready for fuel load 36 months after concrete begins pouring, a considerably shorter time than earlier generations of reactors. This, along with more standardized equipment, reduces the capital costs for Vogtle, making it more economically competitive. Innovative financing options could make the cost even more palatable to ratepayers.

According to the Nuclear Energy Institute, Vogtle “had the fifth-lowest cost in the United States,” at 1.33 cents per kWh. If a cap-and-trade system is implemented by the next president, nuclear energy will become still more competitive with coal. And Georgia will have energized its future.

Sean Wilson, a senior at Georgia Tech majoring in International Affairs with a concentration in Economics, is an intern at the Georgia Public Policy Foundation. The Foundation is an independent think tank that proposes practical, market-oriented approaches to public policy to improve the lives of Georgians. Nothing written here is to be construed as necessarily reflecting the views of the Georgia Public Policy Foundation or as an attempt to aid or hinder the passage of any bill before the U.S. Congress or the Georgia Legislature.

© Georgia Public Policy Foundation (June 27, 2008). Permission to reprint in whole or in part is hereby granted, provided the author and his affiliations are cited.