



OPINION

# Georgia's Plant Vogtle is a \$35B boondoggle. We need new and better solutions for a carbon-free grid.

Urgent utility business model reforms are needed to create a 21st-century, people-centered grid that delivers affordable fossil-free solutions.

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*Construction of Vogtle Nuclear Plant Unit 4. Courtesy of Bechtel*

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Georgia's Plant Vogtle began construction in 2009 as part of an effort to revive the nuclear industry, but things have not gone well. As enthusiasm builds once again for nuclear in the U.S., this is the wrong direction for the U.S. to take. Claims being made now that small modular reactors will make nuclear affordable are similar to claims that were made about Plant Vogtle.

## **The status of new build nuclear in the U.S.**

Starting around 2001, some industry experts declared a "nuclear renaissance" in the United States. New designs and a streamlined

approach to Nuclear Regulatory Commission licensing promised a new day for nuclear energy. In 2005 President George Bush signed the Energy Policy Act into law providing significant nuclear incentives. Although the NRC subsequently issued 14 licenses, over a decade later, only one nuclear power plant is even close to coming online: Georgia's Plant Vogtle.

What happened? Instead of pursuing nuclear, most states decided to take advantage of steep price declines in natural gas, solar and wind energy. Only Georgia and South Carolina proceeded, where regulator deference to utilities is strong. Construction in South Carolina and Georgia began in 2009, and problems quickly mounted. In 2017 billions of dollars in cost overruns for both projects resulted in the bankruptcy of the main contractor, Westinghouse. This triggered a review: South Carolina decided to cancel, while the Georgia Public Service Commission voted to proceed.

Plant Vogtle's costs have now ballooned past \$35 billion, making it the most expensive power plant ever built on Earth. If all construction costs for Plant Vogtle get moved into the rate base, Georgia Power bills will increase 20% for 60 years, according to calculations made from PSC filings. For a state already in the top 10 for high power bills and energy poverty, these increases shock the conscience and will be more than many people can bear.

Despite extensive documentation at the Georgia Public Service Commission, many energy professionals have little understanding of what went wrong. According to filings from independent construction monitors, issues plaguing the project include unachievable schedules, a culture of poor work inspections, failure to document progress, violation of IEEE standards, and

component failure rates of 80%. Failure to adopt lessons learned has also been a bedrock theme.

## **Urgent reform is needed**

Although Georgia state officials proclaim zero carbon energy as a benefit of Plant Vogtle, let's be clear: reduced carbon emissions were not why this plant was built. Georgia has no renewable energy goals. Last July the Georgia PSC authorized 2,300 MW of new natural gas generation in Georgia Power's IRP. Georgia doesn't even track carbon emissions.

Plant Vogtle happened because today's utility business model rewards capital investment, a perverse incentive that results in overbuilding in pursuit of profit. This business model worked well in the 20th century when the country needed a massive grid build-out, but 21st-century goals are different: we need to quickly reduce carbon emissions, increase grid resilience and build a distributed, digital grid that is flexible, engages customers and is affordable.

Nothing about nuclear energy meets those goals: it's slow to build, hugely expensive, is neither flexible nor distributed and does not engage consumers. It fails at resilience too: 10 nuclear plants in Europe shut down last summer due to low water from drought and heat.

## **The sun doesn't always shine: Baseload**

Claims that nuclear energy is required because it is baseload energy and "the wind doesn't always blow and the sun doesn't always shine" assumes that each individual technology must provide baseload or have backup, but that's just not how the

system works. The grid receives energy from different technologies and dispatches energy to meet services. An examination of how ISOs and RTOs work makes this concept clear.

Indeed, many countries and states have high penetration of renewables that proves viability: Oregon, Idaho and South Dakota produced over 60% of their electricity from renewables last year, and 10 countries across the globe generated 60% to 90% of electricity from renewables (Germany, Guatemala and Scotland among others), proving that new nuclear is not required to quickly reduce carbon emissions.

New nuclear builds are expensive and slow, yet claims that expanded nuclear power is required to address the climate crisis are gathering momentum. Inexpensive renewables that are already available risk losing ground to large new federal subsidies for capital expenditures like nuclear.

### **DOE's Loan Programs Office**

This office is tasked with funding nuclear research and construction using money from the Inflation Reduction Act. Officials there say that lessons have been learned from the failure to deliver Georgia's Plant Vogtle on time and on budget and celebrate that Plant Vogtle employs 9,000 workers. But those claims ring hollow. Captive consumers don't owe anyone a job, and it is difficult to imagine that the power sector has adopted lessons learned when PSC filings indicate that has not even happened on site.

The Loan Programs Office has done a great job promoting SMRs as a requirement for reducing carbon emissions, including issuing a

“Liftoff for Nuclear” report and creating a cool infographic, not to mention billions of dollars in funding support. Americans like to invent our way out of crises, but unlike other energy technologies such as wind, solar and storage, nuclear generation has never come down in price over time.

### **A people-centered grid?**

People must have affordable electric bills as part of the clean energy transition. Nuclear supporters will say that Plant Vogtle will “be worth it” and that over the lifespan the cost is affordable. They must not realize that the stunning 20% increase in Georgian’s electric bills will last for 60 years.

It doesn’t need to be this way. The beauty of the digital era is that it allows for new and better solutions for a carbon-free grid, and people can be involved in ways never before possible. The Smart Energy Consumer Collaborative, where I was president for 10 years, published numerous studies documenting consumer values around energy. The belief that people don’t care about electricity is not true. People are already engaging their values around energy in many ways from smart thermostats to rooftop solar to advanced LED lighting, to name a few. Data analytics, grid edge services, and fully funding demand-side management, in addition to cheap renewables and storage, should be the grid of the future.

When Georgians learn about the steep rate increases needed to pay for Plant Vogtle, backlash is going to be intense and a battle about whether Georgia Power should be allowed to recover billions in cost overruns is likely to take place this fall. Continuing upward pressure on rates while trying to innovate nuclear into a solution that does not exist with disempowered consumers required to pay

for it is inappropriate.

Urgent utility business model reforms are needed to create a 21st-century people-centered grid that delivers affordable fossil-free solutions. Some states have already begun to make this shift, but heavy federal subsidies can distort the process.