

Largest US public power company launches new nuclear program

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In this April 23, 2019, file photo, Tennessee Valley Authority President Jeff Lyash speaks with the Times Free Press from the TVA Chattanooga Office Complex in Chattanooga, Tenn. The largest public power company in the United States is launching a program to develop and fund new small modular nuclear reactors as part of its strategy to dramatically reduce greenhouse gas emissions. The board for the Tennessee Valley Authority on Thursday, Feb. 10, 2022 authorized the program, with up to \$200 million to be spent for the first phase. Credit: C.B. Schmelter/Chattanooga Times Free Press via AP

The largest public power company in the U.S. is launching a program to develop and fund new small modular nuclear reactors as part of its strategy to dramatically reduce greenhouse gas emissions.

The board for the Tennessee Valley Authority on Thursday authorized the program to assess moving forward with new nuclear technology, with up to \$200 million to be spent for the first phase. The TVA wants the technology to be available to help power the grid in the 2030s if it proves cost-effective and necessary, and the Nuclear Regulatory Commission approves. The board met at Western Kentucky University in Bowling Green, Kentucky.

The federally owned utility provides electricity to seven states. It has the first U.S. permit for a suitable site for small modular reactors in Oak Ridge, Tennessee, at the Clinch River Nuclear Site. By 2050, it hopes to hit its goal of net-zero emissions, which means the amount of greenhouse gases produced is no more than the amount removed from the atmosphere.

"Our objective isn't to build one nuclear plant," TVA President and CEO Jeff Lyash said in an interview. "Our objective is to reach net zero carbon, to support economy-wide decarbonization, and to do it at a price and a level of reliability that people can count on. And this is a part of doing that."

[A recent Associated Press survey](#) of the energy policies in all 50 states and the District of Columbia found that a strong majority—about two-thirds—say nuclear, in one fashion or another, will help take the place of fossil fuels. Roughly one-third of the states and the District of Columbia have no plans to incorporate nuclear power in their green energy goals, instead leaning heavily on renewables to try to stave off the worst effects

of a warming planet.

The split over nuclear power in U.S. states mirrors a similar debate unfolding in Europe, where countries including Germany are phasing out their reactors while others, such as France, are sticking with the technology or planning to build more plants. The head of the U.N. nuclear agency said in November that he sees atomic power playing a key role in balancing climate concerns and the world's energy needs.

Lyash said the TVA can reduce carbon emissions by about 80% using solar and wind power, existing nuclear plants and hydroelectric dams, and by reducing demand through energy efficiency efforts, without sacrificing reliable, resilient, low-cost power.

But the smaller nuclear reactors that companies are developing now are crucial to getting the rest of the way and increasing electricity production, along with other new technologies, he added. The utility now operates three nuclear plants—the nation's third largest nuclear fleet—to supply more than 40% of the region's energy.



In this Aug. 7, 2019, file photo, a man fishes at William B. Ladd Park near the Kingston Fossil Plant in Kingston, Tenn. The largest public power company in the U.S. is launching a program to develop and fund new small modular nuclear reactors as part of its strategy to dramatically reduce greenhouse gas emissions. The board for the Tennessee Valley Authority on Thursday, Feb. 10, 2022 authorized the program to assess moving forward with new nuclear technology, with up to \$200 million to be spent for the first phase. Credit: AP Photo/Mark Humphrey, File

Lyash told the board Thursday that for the Clinch River site, the TVA is focused on GE Hitachi's design for a small modular reactor that uses light water like all U.S. commercial reactors. The TVA is also collaborating with Kairos Power to build a test reactor, a demonstration project that wouldn't be for commercial use, in Oak Ridge.

The Union of Concerned Scientists has cautioned that nuclear technology still comes with significant risks that other low-carbon energy sources don't, including the danger of accidents or targeted attacks for both the radioactive waste and the reactors, and the unresolved question of how to store hazardous nuclear waste.

Grant Smith, a senior energy policy adviser at the Environmental Working Group, said small reactors are going to be a "total financial debacle" because the cost of nuclear power never comes down, with costs and risks shifted to ratepayers.

"You really don't need them," he said in an interview. "Why keep dumping money into a technology that has been a financial disaster from the beginning?"

The TVA had plans decades ago to build 17 large reactors at seven sites. The utility sank more than \$8 billion in the 1970s and 1980s into 10 nuclear reactors that were canceled before they were finished—scrapping most of what then was the nation's most costly and ambitious nuclear program.

Lyash said they're now taking a far more conservative approach: They're not launching into a program to build multiple reactors on multiple sites because they've learned many lessons over 50 years. If one reactor can't be planned and built on schedule and on budget, they won't scale up, he added.

The initial funding will be used for the design, licensing and project development to potentially build GE Hitachi's reactor.

State-regulated utilities could face skepticism over the potential cost to customers of nuclear reactors, though. Two more-traditional large nuclear reactors being built in Georgia have more than doubled in overall

cost, to more than \$28 billion. Similar reactors that were under construction in South Carolina were scrapped, driving a utility to be sold in distress and resulting in a criminal conviction of the former CEO for fraud.

The NRC has approved just one of the new, small modular reactor designs: from an Oregon company called NuScale Power, in August 2020. Several other companies are planning to apply for their designs. That includes [a project by Bill Gates' company, TerraPower, in Wyoming](#), the nation's largest coal-producing state.

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