

Advanced nuclear reactor to be built on former Wyoming coal plant site

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This photo shows one of Pacific Gas and Electric's Diablo Canyon Power Plant's nuclear reactors in Avila Beach, Calif. Wyoming announced it will host a 345-megawatt advanced nuclear reactor. | Michael A. Mariant, File/AP Photo

Wyoming, the number one coal-producing state in the country, on Wednesday announced it will host a 345-megawatt advanced nuclear reactor on the site of a retiring coal plant.

The Natrium project will be a collaboration with TerraPower, the energy incubator founded by Bill Gates, the Department of Energy, the state of Wyoming and the Warren Buffett-owned utility PacifiCorp. The project, which marks only the second advanced reactor planned for the United States, will be funded in part by DOE and the state of Wyoming.



"Nuclear power, like every other technology needs to innovate and adapt," Gates, the chair of TerraPower, said virtually at the event. "It needs to become less expensive, it needs to prove an even stronger safety case, and make sure it is designed to make a dramatic change in performance, safety, and cost."

Advanced reactors are seen as critical to the future of the U.S. nuclear power industry since they are expected to be smaller, more efficient and safer than existing nuclear projects. California will retire its last nuclear plant in 2025 when [Diablo Canyon closes](#) and the [Indian Point nuclear facility](#) in New York was shuttered in April. Plants in New Jersey on the cusp of retirement were bailed out in 2019 by the state, with New Jersey [regulators approving another \\$300 million](#) to support the units in April.

The Wyoming project will join another demonstration project underway in Tennessee, the 140 MW Hermes joint venture with the Tennessee Valley Authority and California-based Kairos Power.

Wyoming has been the state with the highest coal production for decades, producing three times as much as number two producer West Virginia, according to the Energy Information Administration, and its residents have resisted emissions reductions measures as a direct challenge to the state's economy. In 2017, Wyoming approved a law that required utilities seeking to retire their coal plants to try and sell them before closing them, and last month the legislature passed bills requiring economic studies proving that retiring a coal plant would not effect reliability or raise power rates. But Republican Gov. Mark Gordon announced in March a goal of making the state net negative, capturing more carbon dioxide than it emits.

Sen. [John Barrasso](#) (R-Wyo.) has long been a booster of advanced nuclear projects, and has advocated putting one in his home state, which currently has no nuclear plants but is the largest U.S. producer of uranium.

"Wyoming is the energy capital of America," Barrasso said at the announcement. "We have all the energy sources here, everything, oil, gas, coal and renewables. And of course, uranium for nuclear power."

The plant will use a sodium-cooled fast reactor with a molten salt-based energy storage system, TerraPower said. The storage technology will allow the project to put an extra 155 MW into the system during periods of high demand, enough to power 400,000 homes. It also will allow the project to dovetail with wind and solar power which can ramp up and down rapidly as the sun sets or wind dies down.

The project will be located at one of Wyoming's four retiring coal plants, but Gary Hoogeveen, CEO of the

PacifiCorp subsidiary utility that will operate the plant, said the site would not be announced until the end of the year. The company did not announce a construction time line.

TerraPower [won an \\$80 million award](#) from DOE's Advanced Reactor Demonstration Program in October. The company signed a cooperative agreement with DOE last month.

"This Natrium reactor shows that the future of nuclear energy is here," Energy Secretary Jennifer Granholm said virtually Wednesday. "I have a feeling that Wyoming won't be the only state angling for one of these nuclear reactors once we see it in action."

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