

# Nuclear power plant pitched in central Washington

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RICHLAND, Wash. — Near the Columbia River, Clay Sell hopes to launch a new era of nuclear power with four small reactors, each stocked with billiard ball-sized “pebbles” packed full of uranium fuel.

Chief executive officer of Maryland-based X-energy, Sell aims to bring the project online by 2028 as part of a broader attempt to develop safer, more flexible reactors to redefine the nation’s energy future.

These efforts have gained support in the nation’s capital where many Democrats eager to make progress on climate change have joined with Republicans to funnel money into development. The federal Energy Department has received \$160 million to help fund X-energy, and the infrastructure bill that cleared Congress earlier this month ups that amount to cover almost half the projected \$2.2 billion cost of the Washington reactor project.

“We believe what starts here in Washington is going to change the world,” Sell said to public-utility officials gathered in Kennewick in late October.

X-energy is one of three companies with ties to the Pacific Northwest that have received federal funds to help develop a new generation of small nuclear power plants, which — since they make electricity without direct combustion of fossil fuels — could aid in the global effort to drive down climate-warming greenhouse gas emissions.

X-energy, along with Bellevue-based TerraPower, founded by Bill Gates, and Portland-based NuScale, proposes reactors that can ramp up and down their electrical output much more rapidly than the large reactors now operating. This agility could help keep electrical grids in balance as more wind and solar power comes online.

TerraPower plans to build its project at the site of a Wyoming coal plant in a partnership with a subsidiary of PacifiCorp, a private utility. NuScale is proposing a project in Idaho and has considered eventually locating a unit in Washington state.

The nuclear industry, in the Pacific Northwest and elsewhere in the nation, has a history of pitching, and sometimes starting, projects that fail to come to pass. Skeptics say these next-generation projects are being oversold and face big challenges in producing competitively priced power without compromising safety and security, and in a time frame soon enough to help reduce carbon emissions by midcentury.

“I’m frankly speechless at the success that the proponents of these plants have had in bamboozling ... a lot of government officials,” said Peter Bradford, a former mem-



X-energy

This rendering shows a proposed nuclear power plant by Maryland-based X-energy that would produce electricity from four helium gas-cooled reactors.

ber of the Nuclear Regulatory Commission and former chair of the Maine and New York utility commissions. “They should be shouldering a much heavier burden when it comes to the credibility of what they are saying.”

The NuScale project in southern Idaho involving small reactors cooled by water is furthest along in development, and has struggled with delays, design changes and escalating cost projections.

NuScale has partnered with a Utah-based utility consortium to develop what initially was proposed to be a power plant with 12 small reactors. The project, which is now forecast to cost \$5.1 billion, has since been scaled back to six reactors expected to start coming online in 2029, according to LaVarr Webb, a spokesperson for the Utah Associated Municipal Power Systems.

Though Webb says sign-ups to take power are “going very well,” some utilities have had second thoughts and pulled out of participation in the project. As of early November, the consortium had secured contracts to take 22% of the project’s proposed 462 megawatts of power.

## Central Washington site

Sell has found fervent support for X-energy in the Tri-Cities area, the hub of Washington state’s nuclear industry that has long been buoyed by billions of taxpayer dollars flowing into the cleanup of the federal Hanford site, where plutonium produced for U.S. atomic bombs has left a toxic, radioactive legacy.

The Columbia Generating Station, Washington’s only commercial nuclear power

plant, is located at the edge of Hanford. And its operator, Energy Northwest, would manage the X-energy reactors under an agreement announced last year.

A third partner is Eastern Washington’s Grant County Public Utility District, which would own the reactors and be responsible in raising about \$1 billion in financing.

This utility boasts an abundance of low-cost hydroelectric power, which has attracted to the county Microsoft, Intuit and other companies that require lots of electricity for data centers and other operations.

Kevin Nordt, Grant County Public Utility District’s general manager, is convinced nuclear could be an important addition to the utility’s energy portfolio to help meet growing demand.

But this partnership is a work in progress.

Nordt said that the utility district also is considering an alternate site project in Grant County and is exploring another option to partner with NuScale.

The costs of power produced by next-generation nuclear are a key concern and source of uncertainty.

Over the past decade, the cost of renewables has plummeted. But, unlike wind and solar power, nuclear can be fed into the grid whenever needed, and for long as needed. That makes this power more valuable, Nordt said. Still, he says a more in-depth financial review is needed, and Grant County might decide not to move forward with any of these projects.

“We may say, ‘You know, hey, the nuclear path was looking favorable, but it’s not for us right now.’ That’s a possibility,” said Nordt,

who previously worked at Energy Northwest. “I’m not saying it’s a high likelihood.”

## X-energy pushes ahead

X-energy was created by Kam Ghaffarian, an entrepreneurial Iranian immigrant who founded a major NASA contracting company and other ventures. In 2009, he turned his attention to nuclear power to help deal with what he viewed as a planetary crisis caused by climate change.

He seeks development of a helium gas-cooled reactor that can operate at higher temperatures, which he says could enable more efficient generation of electricity. This technology has been around for decades but has never been widely used in the U.S. The company, under a Defense Department contract, also is developing small portable reactors.

“My strategies going forward are deployment, deployment, deployment,” Ghaffarian declared in a 2017 speech. “We have done enough research. We have done enough dancing.”

Ghaffarian in 2019 recruited Sell, a veteran Washington insider who had served as deputy energy secretary in the Bush administration.

When prospecting for a place to put the first project, Sell says he was drawn to Washington, in part, by a law passed in 2019 that calls for all fossil-fuel-generated power to be off the state grid by 2045.

“That is the most transformative thing that has happened in nuclear-energy markets in the United States because it has created

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