

NuScale Power Ends Small Modular Reactor (SMR) Project with Utah Wholesale Power Group

Key Highlights

- In 2017, NuScale reached agreement with members of the Utah Associated Municipal Power Systems (UAMPS) to provide SMR modules to be sited at the Idaho National Laboratory (INL) in a project known as the Carbon-Free Power Project (CFPP).
- By 2020, project costs had risen significantly and in July 2021, UAMPS reduced the number of modules from 12 to six.
- Since, the project's costs rose significantly and some UAMPS participants dropped out of the project.
- On November 8, 2023, NuScale and UAMPS announced that they were ending the Carbon Free Power Project.

Background

In 2017, NuScale, a leading small modular reactor (SMR) developer, reached agreement with 33 of the 50 members of the Utah Associated Municipal Power Systems (UAMPS) — which provides comprehensive wholesale electric energy services on a non-profit basis to community-owned power systems in six states — to provide a dozen SMR modules totaling 500 MW, known as the Carbon-Free Power Project (CFPP) to be sited at the Idaho National Laboratory (INL).

By 2020, project costs had risen significantly, in part because of inflationary pressures on supply chains, with some producer price indices rising between 50% and 100%. In July 2021, UAMPS reduced the number of modules from 12 to six. The redesign, chosen by UAMPS participants, consisted of 77-MW modules for a total capacity of 462 MW, with the first module to come online in 2029, and the full plant in 2030.

Over the past years, the project's costs rose and some UAMPS participants dropped out, including two rural electric cooperatives. In January 2023, according to a November 20 Reuters article,¹ NuScale updated its target power price from \$55/MWh to \$89/MWh, “raising concerns about customers’ willingness to pay.”

On November 8, NuScale Power and UAMPS announced that they were ending the Carbon Free Power Project.

¹ <https://www.reuters.com/business/energy/nuscale-power-uamps-agree-terminate-nuclear-project-2023-11-08/>

Financial Pressures

In a March 2022 article, *The Economist*² noted that “NuScale’s Idaho plant is paid for in part by federal subsidy.” But, the magazine added, costs had doubled between 2016 and 2020, and several of the company’s commercial partners dropped out of the project in 2020.

In January 2023, NuScale updated its target power price from \$55/MWh to \$89/MWh.³ UAMPS, through its members, had an option to withdraw from the project and be reimbursed for most out-of-pocket expenses if the price of energy per megawatt-hour exceeds a certain threshold.⁴

The 53% increase in the SMR’s target power price since 2021 was driven by a dramatic 75% jump in the project’s estimated construction cost, which has risen from \$5.3 billion to \$9.3 billion, according to the Institute for Energy Economics and Financial Analysis.⁵ The new estimate makes the NuScale SMR roughly as expensive on a dollars-per-kilowatt basis (\$20,139/kW) as the two-reactor Vogtle nuclear project currently being built in Georgia, contradicting the claim that SMRs will be cheap to build.

In January 2023, *Neutron Bypass*,⁶ a blog on nuclear energy, listed the total costs of the NuScale project:

- *Total cost of acquisition and construction, including financing: \$9.3 billion*
- *Total value of DOE Cost Share Award and other financial resources: \$4.2 billion*
- *Net cost of acquisition and construction for UAMPS: \$5.1 billion*

Reactor Licensing

NuScale submitted an application to the Nuclear Regulatory Commission (NRC) for design certification of a 50 MW/module SMR in December 2016. The NRC accepted the application for a plant comprising up to twelve 50-MW modules in March 2018 and issued its final technical review in July 2022.

Subsequently, NuScale upgraded the capacity of the power unit to 77 MW/module. Early in January 2023, NuScale submitted an application for NRC approval of a six-unit configuration based on the updated design. On January 19, 2023, the NRC said it would amend its regulations to certify NuScale’s standard design for an SMR.

At the time, NuScale was seeking an uprate from the original 25 MW per module to enable each module to generate up to 77 MW. The NRC was expected to review their application this year.

NuScale's VOYGR SMR is a pressurized water reactor with all the components for steam generation and heat exchange incorporated in a single 77 MW unit.⁷

² <https://www.economist.com/science-and-technology/developers-of-small-modular-reactors-hope-their-time-has-come/21808321>

³ <https://ieefa.org/resources/eye-popping-new-cost-estimates-released-nuscale-small-modular-reactor>

⁴ <https://neutronbytes.com/2023/01/24/nuscales-smr-costs-hit-hard-by-inflation/>

⁵ <https://ieefa.org/SMR>

⁶ <https://neutronbytes.com/2023/01/24/nuscales-smr-costs-hit-hard-by-inflation/>

⁷ Details: <https://www.nuscalepower.com/technology/technology-overview> and https://s24.g4cdn.com/104943030/files/doc_downloads/factsheet/nuscale-smr-fact-sheet.pdf

UAMPS had been working toward submitting a combined construction and operating license application to the NRC in January 2024, for a plant with six of NuScale's 77 MW power modules.

Federal / Private Funding

In 2020, the Department of Energy approved \$1.35 billion over 10 years for the plant, known as the Carbon Free Power Project, subject to congressional appropriations. The department had provided NuScale and others about \$600 million since 2014 to support commercialization of small reactor technologies.

Among the investors in NuScale are Fluor, Doosan Enerbility, Samsung C&T Corp., JGC Holdings Corp. of Japan (which invested \$40 million), IHI Corp. Japan Bank for International Cooperation, Enercon Services, Inc., GS Energy, Sarens, and Sargent & Lundy. While this list of investors is public information, details of the contributions per entity are not readily available.

Decision to End CFPP

After a February off-ramp period, in which the governing boards of all the participants gave the project additional scrutiny and due diligence according to a UAMPS press release,⁸ 26 of 27 participants voted to continue. A March 2023 article in *POWER* magazine⁹ indicated that the “overwhelming approval” by CFPP participants during the February off-ramp period to continue with the project is especially notable because NuScale and Fluor’s Class 3 project cost estimate failed to reach its levelized cost of electricity (LCOE) price target of \$58/MWh (in 2020 dollars).

However, NuScale said in March 2023 that it would need to reach an 80% subscription level by February 2024 for the project, according to *UtilityDive*.¹⁰

Recently, Power Engineering reported that a report¹¹ published by Iceberg Research on October 19, 2023, alleged that NuScale would not be able to fulfill its contract with UAMPS for CFPP, as well as a 1,848 MWe power capacity contract they had with Standard Power, a blockchain datacenter service provider. This news was followed by NuScale’s stock price falling \$0.58, or 11.5%, to close at \$4.46 per share.

On November 8, 2023, NuScale Power and UAMPS announced that they mutually agreed to end the CFPP, due to mounting costs of the project.¹² This development was followed by a further drop of NuScale’s stock price by \$1.02, or 32.9%, to \$2.08 on November 9, 2023.

A class action suit¹³ has now been filed on behalf of investors who purchased NuScale securities between March 15 and November 8, 2023, alleging that NuScale made materially false or misleading statements in

⁸ <https://www.uamps.com/File/144c3e79-3efe-4464-9dfe-2c4189982fda>

⁹ <https://www.powermag.com/novel-uamps-nuscale-smr-nuclear-project-gains-participant-approval-to-proceed-to-next-phase/>

¹⁰ <https://www.utilitydive.com/news/nuscale-uamps-terminate-small-modular-nuclear-reactor-smr-project-idaho/699281/>

¹¹ <https://iceberg-research.com/2023/10/19/nuscale-power-smr-a-fake-customer-and-a-major-contract-in-peril-cast-doubt-on-nuscales-viability/>

¹² <https://www.power-eng.com/nuclear/facing-mounting-costs-nuscale-cancels-small-modular-reactor-project-in-utah/#gref>

¹³ <https://www.power-eng.com/nuclear/reactors/investors-file-lawsuit-against-nuscale-after-cancellation-of-smr-project/#gref>

their positive statements about the company, and failed to disclose that because of inflationary pressures on costs, they would not be able to sign-up enough subscribers to fulfill the CFPP.

Related Information

- Reuters Article: [Cancelled NuScale contract weighs heavy on new nuclear](#) (December 7, 2023)

Contact for Questions

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