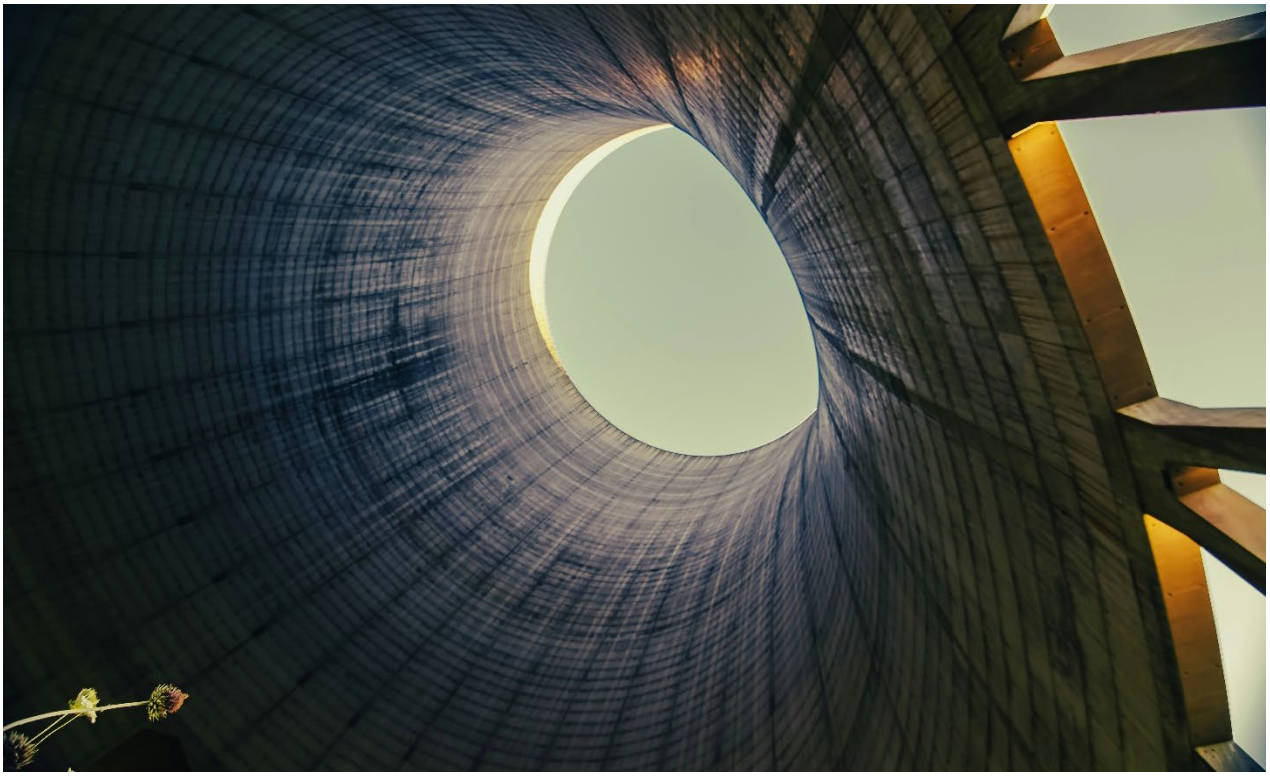
ISSUE BRIEF

Will Nuclear Energy Make a Comeback?



Amid rising energy demand from artificial intelligence and the urgent need to decarbonize the economy, nuclear energy has once again entered the conversation. Long sidelined by high costs, regulatory red tape, public skepticism and occasional but catastrophic accidents, nuclear power is now being reimagined as a clean, reliable energy source. But will the private capital markets, historically cautious of nuclear power, finally help the industry take off?

A History of Hesitation

For decades, nuclear energy has struggled to attract private investment. The reasons are well known; massive upfront capital requirements, construction delays, regulatory uncertainty, and ongoing concerns about safety and the potential impact of accidents. Traditional investors and banks have often viewed nuclear as too risky and too slow to deliver returns. Even in its heyday, Congress had to pass the Price-Anderson Nuclear Industries Indemnity Act in 1957 to entice private investment in nuclear. That skepticism has since been reinforced by major accidents like Three Mile Island, Chernobyl, and Fukushima. There is still lasting concern about safety, fallout, and long-term waste management.

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Even as climate concerns grew, nuclear power still remained a tough sell. Renewable energy sources like wind and solar, with their lower costs and faster deployment timelines, made far more sense for investors deploying capital in the

energy space. Nuclear, despite its zero-carbon credentials, was often left out in the cold.

That may be changing. Nuclear power generates nearly 20% of the United States' electricity, underscoring its increasingly important role in the nation's energy landscape[1]. Unlike intermittent renewables like wind and solar, nuclear energy offers continuous, reliable power generation rain or shine. This combined with the Trump Administrations distain for renewables, creates a very big opportunity for nuclear. With the U.S. government slashing its way through the red tape and setting targets to quadruple US nuclear capacity (to 400 GWe from 100 GWe) by 2050[2], it looks like it's time for nuclear to step back into the spotlight.

A Policy Pivot in 2025

On May 23, 2025, President Trump signed four sweeping executive orders aimed at revitalizing the U.S. nuclear sector. These orders—titled *Reinvigorating the Nuclear Industrial Base*, *Reforming Nuclear Reactor Testing at the Department of Energy*, *Ordering the Reform of the Nuclear Regulatory Commission*, and *Deploying Advanced Nuclear Reactor Technologies for National Security*—represent the most aggressive federal push for nuclear energy in decades. Their goals are multifaceted: to assert nuclear power as infrastructure critical to maintaining economic competitiveness, to meet the surging energy demands of artificial intelligence data centers, and to reinforce national security while reducing reliance on foreign energy sources. The reduction of carbon emissions was not explicitly listed as reasons for the energy shift but is certainly a backdoor bonus.

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The New Nuclear

Whether capital markets embrace the sector is a big question. But with new and improved tech combined with the backing of the U.S. government, tunes may change. Nuclear power plants have historically been 300-foot structures that took a decade or more to build. The new reactors at the Vogtle Electric Generating Plant in Georgia are a good example. Construction started in 2009 at a projected cost of $12 billion, expected to be completed in 2017. Instead, the second of the two additions entered commercial operations in 2024 and ended up costing almost $35 billion "for what may be the most expensive power plant ever."[3]

As these innovations continue to evolve, they offer a glimpse of a new generation of nuclear energy—one that is not only more adaptable and efficient, but also significantly safer and more environmentally responsible than its predecessors.

Future growth of the sector is clearly dependent on rapidly developing technology for Advanced Reactors which can vary in size and come with updated safety and sustainability features. "Micro Reactors" can produce a range of 1 to 20 million watts of energy and can fit on a flatbed of a truck for transport while Small Modular Reactors, SMRs, produce from 20 up to 300 million watts and can be scaled up or down by adding more units if necessary.[4] With water being one of Earth's most vital yet increasingly scarce resources, many SMRs are cooled with sodium or helium instead of water thus enabling them to operate at higher temperatures and lower pressures than current reactors. Advanced Reactors can also significantly reduce the volume of spent fuel, with some designs capable of reusing fuel thus minimizing waste and lowering the risk of accidents related to improper disposal. As these innovations continue to evolve, they offer a glimpse of a new generation of nuclear energy—one that is not only more adaptable and efficient, but also significantly safer and more environmentally responsible than its predecessors.

The Financing Game

President Trump's executive orders direct the Department of Energy to prioritize funding for these advanced nuclear technologies through grants, loans, and other federal support within

180 days, which would be before November 27, 2025. On November 18th, DOE officials announced the Trump administration will provide Constellation Energy with a $1 billion loan to restart the Crane Clean Energy Center, formerly known as Three Mile Island, with expectations to start generating power again by 2027. Subject to available funding, the DOE—working with the Small Business Administration—is directed to focus on backing companies with mature designs, strong financial support, and near-term deployment potential.[5] The administration is also continuing existing initiatives like the Advanced Reactor Demonstration Program , providing $160 million in initial funding to qualified applicants.[6]

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On the private side, back in September 2024 a group of 14 banks and investment managers announced plans to ramp up financial support for the nuclear industry, aligning with COP28's goal to triple global nuclear capacity by 2050.[7] Several major tech companies have also entered the arena, committing billions to their own nuclear endeavors to fuel the insatiable demands of their data centers.

Together, these developments reflect a growing alignment between federal policy and private investment aimed at revitalizing the U.S. nuclear sector. With federal funding mechanisms, support for demonstration projects, and increasing interest from both financial institutions and major tech companies, the groundwork is being laid for a potential nuclear resurgence. However, while these commitments mark a meaningful shift in how nuclear energy is viewed, actual deployment remains a long-term goal not to be overlooked.

The next 12 to 24 months will be critical. With banks and investors stepping up, we may finally see a nuclear renaissance powered not just by atoms—but by capital.

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[1] World Nuclear Association, updated 11/17/2025: Nuclear Power in the USA - World Nuclear Association

[2] World Nuclear Association, updated 11/17/2025: https://world-nuclear.org/information-library/country-profiles/countries-t-z/usa-nuclear-power#:~:text=Given%20that%20nuclear%20plants%20generate,maintain%20a%2020%25%20nuclear%20share.

[3] Associated Press, published 04/29/2024: A second new nuclear reactor is completed in Georgia. The carbon-free power comes at a high price | Georgia Public Broadcasting

[4] U.S. Department of Energy, accessed 10/21/2025: https://www.energy.gov/sites/prod/files/2020/01/f70/011620%20Advanced%20Reactor%20Types%20Factsheet.pdf

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[7] World Nuclear Association, updated 09/23/2024: https://world-nuclear.org/news-and-media/press-statements/14-major-global-banks-and-financial-institutions-express-support-to-triple-nuclear-energy-by-2050-23-september-2024